



# Durham E-Theses

---

## *Conceivability, Apriority and Modality*

WINSTANLEY, PAUL

### How to cite:

---

WINSTANLEY, PAUL (2011) *Conceivability, Apriority and Modality*, Durham theses, Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/860/>

### Use policy

---

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

# Conceivability, Apriority and Modality

*Paul Winstanley*

Submitted for the degree of PhD  
Department of Philosophy  
University of Durham  
2011

# Abstract

I aim to understand whether apriority entails necessity, aposteriority entails contingency and conceivability entails possibility; that is, the relationship between, and the nature of, rationality and modality. The thesis is split into two parts: one on apriority and modality (chs. 2-4), and another on conceivability, apriority/aposteriority and modality (chs. 5 to 7).

In Chapter 1, I discuss 'two-dimensional modal semantics', arguing that it is ill-equipped to provide a substantive account of rationality and modality, before setting out the basis of such an understanding.

I begin the first part of the thesis (in Chapter 2) by outlining a preliminary account of the *a priori*: it is, strictly, not defeasible by empirical evidence; it involves a kind of necessity ('rational necessity'); and it is (at least in its *prima facie* variant) fallible.

In Chapter 3 I discuss the contingent *a priori*, arguing that genuine apriority entails necessity, before placing apriority qua 'rational necessity' (and 'rational modality' more widely) with respect to other kinds of modality (in Chapter 4). I conclude Part I of the thesis, by arguing that the *a priori* is not coextensive with, but is grounded in, metaphysical necessity.

Part II of the thesis begins with a discussion of the necessary *a posteriori* (Chapter 5), where I argue that there are no genuine cases, thus aposteriority entails contingency and conceivability entails possibility.

I then deal with Frege's and Kripke's puzzles (Chapter 6), which I claim (as with the necessary *a posteriori*) pose no genuine problem for conceivability-possibility reasoning.

Finally (in Chapter 7), I offer a deeper account of rational modality together with a tentative account of metaphysical modality (and essence). I then conclude that genuine apriority qua rational necessity entails metaphysical necessity; similarly, strictly, aposteriority (rational contingency) entails metaphysical contingency and, (in)conceivability (rational (im)possibility) entails metaphysical (im)possibility.

# Acknowledgements

Much of the research for the thesis has been presented at seminars and conferences in the UK and Europe. In particular, Chapter 1 draws on material presented at the 2005 Durham-Bergen seminar in Bergen, Norway (subsequently published in the proceedings, as 'Conceivabilities and possibilities'), and on a paper presented at the 2005 National Postgraduate Analytic Philosophy Conference in York (subsequently published in *Percipi*, as 'Conceivability, Possibility and Two-Dimensional Semantics'). Chapter 3 draws on work presented at the First SIFA Graduate Conference in Padova, 2007 (subsequently published in the proceedings, as "I exist": the contingent *a priori* and indexicality'). I am grateful to the organisers and editors concerned for allowing me to present this material here. I am further grateful to several audience members (notably Timothy Williamson) for forcing me to think more deeply about some of the relevant issues.

I am, of course, deeply indebted to my supervisor, Jonathan Lowe. I should also mention Durham's postgraduate philosophy community. I have had many very helpful discussions with Tuomas Tahko, Donnchadh O'Connell and Michael Turp. I have also had much, general, philosophical support from my good friend, Tony Booth, who deserves a particular mention.

Finally, I would like to thank my wife, Emma, for her continuing love and understanding, especially during the last, rather taxing months of the PhD.

# Contents

## Chapter 1:

### From Metaphysics to Semantics: Two-Dimensionalism, Rationality and Modality

1	Introduction	1
2	From Kripkean to two-dimensional semantics	4
3	The real issues	12
4	Thesis outline	20

## PART I: APRIORITY AND MODALITY

## Chapter 2:

### The *A Priori*: Preliminaries

1	Introduction	25
2	A negative account?	28
2.1	Independence	30
2.2	Experience	34
3	A positive account?	39
4	Justifiability, objectivity and subjectivity	43
5	Euclid and defeasibility	47
6	Fallibility	58

## Chapter 3:

### Coincidence, Goldbach and the Contingent *A Priori*

1	Introduction	62
2	The coincidence thesis and Goldbach's conjecture	63
3	The contingent a priori	68
3.1	Problems with the metre stick	70
3.2	'I exist': a better example?	80
3.3	Apriority, indexicality and Evansian, 'superficial' contingency	83
3.4	Apriority, introspection and causation	92
4	Conclusion	99

## Chapter 4:

### Rational, Epistemic, Logical and Metaphysical Modalities

1	Introduction	103
2	Rational necessity, rational insight and metaphysical modality	105
2.1	The regress problem	112
2.2	Apriority and rational necessity; certainty and objectivity	117
3	Rational, epistemic and logical modalities	121
3.1	Rational and epistemic necessity	122
3.2	Rational necessity and the logical necessities	127
4	Apriority as rational necessity	134

## PART II: RATIONALITY AND MODALITY

### Chapter 5:

#### The Necessary A *Posteriori*, Conceivability and Possibility

1	Introduction	141
2	A Kripkean argument for the necessary a posteriori	144
3	How many propositions?	155
4	Another argument?	164
5	The necessary a posteriori conceivability and possibility	175

### Chapter 6:

#### Frege and Kripke's Problems, Conceivability and Possibility

1	Introduction	181
2	Frege's problem and Kripke's puzzle	183
2.1	Frege's problem	183
2.2	Kripke's puzzle	190
3	Conceivability, rational and metaphysical modalities	200
3.1	The problems, conceivability and possibility	201
3.2	(In)conceivability and (im)possibility: Goldbach's conjecture again	203

### Chapter 7:

#### Rationality, Modality and Essence

1	Introduction	215
2	The nature of metaphysical modality	215
2.1	'Actual' and 'possible' worlds	216
2.2	Possible worlds, 'realism' and essentialism	221
2.3	Problems with possibilism and merits of modalism	224
2.4	The grounding of modality	230
3	Thesis summary	235
4	Issues, objections and replies	243
4.1	Fallibilism, justifiability, circularity and two-dimensionalism	244
4.2	The possibility of modal error	248

	Bibliography	257
--	--------------	-----

# Chapter 1

## From Metaphysics to Semantics: Two-Dimensionalism, Rationality and Modality

### 1 Introduction

Philosophy, at least as traditionally conceived, is a deeply modal and broadly *a priori* discipline. Philosophers are interested in necessary and possible<sup>1</sup> conclusions, and whether, for example, *a priori* or conceivability-based reasoning justifies these; whether apriority entails necessity and ‘conceivability’ entails possibility.<sup>2</sup> The empirical sciences (again, as traditionally understood) are, as the ‘empirical’ suggests, largely *a posteriori*. Scientists are interested in contingent truths about the natural world and are generally less interested in whether, for example, aposteriority entails contingency. Broadly stated then, a simple, traditional demarcation of philosophy and science would have the latter exemplified by *a posteriori* investigation of contingent truths (or probabilities), with the former consisting of putatively *a priori*-necessary and conceivability-possibility forms of reasoning.

After the seminal work of Kripke on the ‘contingent *a priori*’ and ‘necessary

---

<sup>1</sup> I intend metaphysical modality here—but this is a topic of dispute throughout. I begin to clarify this issue towards the end of this section and throughout the remainder of the thesis.

<sup>2</sup> There is a lot of shorthand here, which I explain in more detail later. The scare quotes indicate the contentiousness of ‘conceivability’. I offer working understandings of modality shortly, and of apriority and conceivability in §3 below.

*a posteriori*<sup>3</sup> there appeared to be much to challenge such an understanding of philosophy, science, rationality and modality. Specifically, the contingent *a priori* (if genuine) invalidates any entailment from apriority to necessity. Similarly, the necessary *a posteriori* (if genuine) undermines (for example) philosophy's position as the main provider of necessary or essentialist conclusions, since if *a posteriori* justification can result in necessary conclusions, empirical science (perhaps alone) can establish essentialist results; i.e. scientific essentialism. Moreover, the necessary *a posteriori* would also appear to further challenge the methodology of traditional philosophy, *viz* the conceivability-possibility form of reasoning; if  $p$  is necessary and *a posteriori*,  $\neg p$  is impossible but, apparently, '*a priori* possible' or 'conceivable'—that is, 'conceivability' does not entail possibility.

In short, whilst having significant ramifications for the status of both philosophy and science, apriority, conceivability (i.e. rationality) and modality are also independently interesting. In this thesis then, I want to understand the nature of the *a priori* and of conceivability; whether apriority entails necessity, aposteriority entails contingency and conceivability entails possibility—and so whether there are contingent *a priori* and necessary *a posteriori* propositions.<sup>4</sup> Most importantly perhaps, given that most of these are deeply modal issues, I want to understand the nature of modality itself.

Now, modality is perhaps the deepest and most difficult of these topics—and I only begin to offer a more complete account in the final chapter. I cover apriority and conceivability in a little more detail in §3 below but, given its importance, feel that some words must be spent on modality presently. Throughout the thesis, I assume the following general account of metaphysical modality. Beginning with the notion of necessity,  $p$  is 'broadly logically' or metaphysically necessary ( $\Box p$ )<sup>5</sup> iff  $p$  could not have been false—or, in the heuristic language of possible-worlds semantics, iff  $p$  is true in all possible worlds. So for example,  $\Box[2 + 3 = 5]$ ,  $\Box[\text{Hesperus is Phosphorus}]$  and  $\Box[\text{Aristotle is a$

---

<sup>3</sup> Kripke 1971, 1972/1980. Cf. Putnam 1970, 1975.

<sup>4</sup> I realise the issue of propositions is vexed. I attempt to deal with this throughout the remainder of the thesis.

<sup>5</sup> The 'broadly logical' phrase is from Plantinga 1974, p. 2 and *passim*. I use the term 'metaphysical' here so as to disambiguate this from other modalities, for example 'strict' or 'narrow' logical (cf. Lowe 1998, ch. 1), and what I later call 'rational' modality—all of which I cover throughout the following.

person'] are (increasingly, potentially, controversial) examples of metaphysically necessary propositions.<sup>6,7</sup>

Possibility can then be defined in terms of necessity;  $p$  is possible ( $\diamond p$ ) iff it is not necessarily the case that  $\neg p$  ( $\neg \Box \neg p$ ). So, it is possible that [I went for coffee at 3pm, instead of continuing writing] and (given its necessity) that [2 + 3 = 5]; it is not possible that [ $\neg(2 + 3 = 5)$ ], and (perhaps controversially) that [Hesperus is not Phosphorus] and [Aristotle is not a person].

Similarly, contingency can be defined in terms of either of the previous two modalities;  $p$  is contingent iff  $p$  is possibly true and possibly false, or, equivalently, if  $p$  is not necessarily true and not necessarily false ( $\Box \diamond p \wedge \diamond \neg p$  or  $\neg \Box \neg p \wedge \neg \Box p$ ). So, a contingent proposition is one that is true, but not necessarily so; for example [I did go for coffee at 3pm...], ['Hesperus' is co-referential with 'Phosphorus'] and [Aristotle instantiates personhood].

Now, there is one recent, broadly semantic framework, 'two-dimensional modal semantics' (2DS), whose adherents claim to explain many, if not all, of the foregoing issues. In the remainder of this chapter, I discuss the two-dimensional account of rationality and modality; arguing that, in virtue of being a semantic framework, two-dimensionalism is ill-equipped to provide substantive answers to such metaphysical questions—since the general move from semantics to metaphysics is illegitimate (§2). I then set out the real issues and subject matter of the *a priori*, conceivability and modality (§3), before providing an outline of the remainder of the thesis (§4).

---

<sup>6</sup> I use '[' and ']' to indicate complex propositions; i.e. to distinguish these from natural language sentences.

<sup>7</sup> The controversies concern issues such as the necessity of identity, identity statements involving names and the relationship between sentences, propositions and circumstances—all of which I discuss in what follows.

## 2 From Kripkean to two-dimensional semantics

According to Kripke, statements or sentences<sup>8</sup> such as

(H) ‘Hesperus is Phosphorus’

and

(S) ‘stick *s* is one metre long at *t*<sub>0</sub>’,

are examples of the necessary *a posteriori* and contingent *a priori*, respectively. In very brief detail, (H) is (allegedly) necessarily true since the names ‘Hesperus’ and ‘Phosphorus’ are rigid designators (designating the same object in all possible worlds where that object exists),<sup>9</sup> identities between objects hold necessarily,<sup>10</sup> so identity statements involving names are necessarily true. Moreover, Kripke claims that (H) is only knowable *a posteriori* since it is an empirical discovery that Hesperus and Phosphorus are identical; (H) is a necessary (or essentialist) *a posteriori* statement.<sup>11</sup>

Similarly, (S) is (allegedly) contingently true but knowable *a priori* since although stick *s* might have been a different length at *t*<sub>0</sub> (hence (S)’s contingency), someone baptismally introducing ‘stick *s*’, ‘fixes the reference’ rather than ‘gives the meaning’ of ‘one metre’. Accordingly, he knows (S) *a priori* despite its being contingent; (S) is an example of the contingent *a priori*.<sup>12</sup>

Two-dimensionalism<sup>13</sup> is a relatively recent, semantic framework offered

---

<sup>8</sup> See his discussion of sentences and propositions in 1980, pp. 20-1. Much hangs on this distinction, as shall become clear in later chapters.

<sup>9</sup> Kripke 1980, p.p. 48-9 and *passim*. There are many issues with the notion of rigid designation (e.g. the existence of the designated object, weak and strong designation), some of which I take up in later chapters. (I take up the issue of possible worlds in ch. 7.)

<sup>10</sup> *Op. cit.*, pp. 97-105 and *passim*. There are many reasons to doubt the Barcan necessity of identity ( $\forall x \forall y (x = y \rightarrow \Box x = y)$ ) or, at least, its application in the current argument. Lowe 1982 is a clear example of potential doubt about the latter; cf. Chandler 1975.

<sup>11</sup> Kripke 1980, pp. 29, 100-4, 107-9, 140-3. As shall become apparent, there are many reasons to doubt that (essentialist) object identities are purely empirical discoveries—and so the necessary *a posteriori* in general (see ch. 5, §§3-4, below, in particular).

<sup>12</sup> *Op. cit.*, p. 54-7. As with the necessary *a posteriori*, there are many reasons to doubt the existence of contingent *a priori* propositions (as I argue in ch. 3 below), not least of all, the possibility of *priori* and *de re* knowledge of contingent objects.

<sup>13</sup> As presented by Kaplan 1978, Stalnaker 1978, Evans 1979, Davies and Humberstone 1980

largely to account for rationality, modality and, specifically, the necessary *a posteriori* and contingent *a priori*. As indicated above, my position on 2DS is that in being a *semantic* framework, it is ill-suited to the task of accounting for the (epistemology and) *metaphysics* of the *a priori*, conceivability and, especially, modality. In support of this, I argue that if 2DS is to account for rationality and modality in any way that preserves strong links between apriority/conceivability and necessity/possibility, it must defuse the contingent *a priori* and necessary *a posteriori*. In addition to this, Soames (2005) identifies and provides detailed, *semantic* criticisms of several species of 2DS.<sup>14</sup> In short, I concur with Soames that ‘benign’ and ‘weak’ two-dimensionalism are not in the business of offering a deflationary response to Kripke; only ‘strong’—or what I shall call ‘epistemic’—2DS<sup>15</sup> can be viewed as seriously attempting to defuse the Kripkean semantic programme. All of this being the case, I focus on epistemic 2DS but (i) given the existence of diverging frameworks (and sets of terminology), it is occasionally necessary to generalise, and (ii) given that rationality and modality (as opposed to two-dimensionalism) are my main focus, I wish largely to avoid exegesis. Thus, in attempting to present a version of 2DS that neutralises the necessary *a posteriori* and contingent *a priori*, the account I describe should not be attributed solely to any two-dimensionalist.

A reasonably standard, two-dimensional interpretation of Kripkean semantics is as follows. Propositions are functions from possible worlds to truth-values; thus (H) is necessarily true in virtue of expressing a necessary ‘horizontal’ proposition<sup>16</sup>—i.e. one that is true in all possible worlds.<sup>17</sup> In addition to the standard, counterfactual view of propositional content however,

---

and, more recently, by Jackson 1994, 1998, 2004 and Chalmers (especially 1996, 2006a, 2006b).

<sup>14</sup> See Chalmers 2006a and especially Manuscript, for some responses to Soames, as well as the ‘Introduction’ of (and papers in) Garcia-Carpintero and Macia 2006, for critical discussion.

<sup>15</sup> As offered by Chalmers and Jackson primarily—see references in the previous note.

<sup>16</sup> See especially Stalnaker 1978 here (and with terminological amendments, Kaplan 1978). Stalnaker’s ‘horizontal’ (proposition) is broadly equivalent to Kaplan’s ‘content’, Jackson’s (1998, 2004) ‘C- (or counterfactual) proposition’ and Chalmers’s (1996, 2006a) ‘secondary’ proposition. Although the latter usually talks in terms of intensions and extensions, that his claims carry over to propositions is evident from Chalmers 1996, p. 63, where he equates the secondary proposition with Kaplan’s content.

<sup>17</sup> As hinted already, I am suspicious of the possible-worlds understanding of modality. That said, two-dimensionalism is deeply embedded in this framework; hence it would be impossible to provide a faithful outline without mention of possible worlds.

two-dimensionalists (as the name suggests) add a second dimension of possible worlds ‘considered as actual’,<sup>18</sup> such that (H)’s aposteriority is explained in terms of its expressing a contingent ‘diagonal’ proposition<sup>19</sup>—i.e. true in some but not all ‘worlds considered as actual’.<sup>20</sup> Similarly, (S)’s status as contingent *a priori* is explained in virtue of its expressing a contingent horizontal and a necessary diagonal proposition.

Now there is some divergence on the nature of the diagonal or primary domain. Sticking with strong, epistemic 2DS presently, a ‘world considered as actual’ indicates an ‘epistemically’ (or centred)<sup>21</sup> possible world. The point being, even if (H) is metaphysically (or secondarily, or, following Evans 1979, ‘superficially’) necessary, the (primary or Evansian, ‘deep’) epistemic possibility that  $\neg(H)$  (given, for example, a centred possible world where ‘Hesperus’ designates Mars) suggests that, despite (H)’s apparent necessity,  $\neg(H)$  is entirely conceivable (qua epistemically possible) and so *possible* in some wider sense. Similarly, in virtue of expressing a necessary primary proposition, (S) is *a priori*; so despite being (secondarily, ‘superficially’) metaphysically contingent, it is (‘deeply’, epistemically) necessary.

What all of this suggests is that strong, epistemic two-dimensional semantics requires something like the following analyses in order to account for the necessary *a posteriori* and contingent *a priori*:

- (1) The ‘diagonal’, ‘primary’ domain captures *epistemic* modality (understood in terms of centred, or *counteractual* possible worlds—i.e. as not distinct from standard, metaphysically possible worlds); in

---

<sup>18</sup> Most clearly evident in Jackson 1998 and Chalmers 1996, p. 60; both heavily influenced by Kaplan’s (1989) discussion of ‘contexts of utterance’ and ‘circumstances of evaluation’. I explain ‘worlds considered as actual’ both the following notes and main paragraph.

<sup>19</sup> The ‘diagonal’ is from Stalnaker 1978 and is broadly equivalent to Kaplan’s (1989) ‘character’, Jackson’s (1998, 2004) ‘A- (or *counteractual*) proposition’ and Chalmers’s (1996, 2006a) ‘primary’ proposition.

<sup>20</sup> In short (but contentiously) two-dimensionalists posit two dimensions of propositional content, ranging over one set of possible worlds—but, importantly, worlds *considered* as counterfactual (i.e. Kripkean, ‘metaphysical’ modality) and as *counteractual* (i.e. ‘epistemic’ modality; conceivability, aposteriority and apriority).

In addition to this, the idea that the counteractual domain is primary and the metaphysical is secondary, is very much related to Evans’s (1979; cf. Davies and Humberstone 1980) discussion of apriority as ‘deep’ necessity and (metaphysical) contingency as ‘superficial’.

<sup>21</sup> I.e. consisting of a world and agent and a time (for example). See Chalmers 1996, pp. 60-4 and 2006a, pp. 81-3, for more detail.

particular,

- (1a) *apriority* is epistemic (primary) necessity; and
- (1b) *conceivability* is epistemic (primary) possibility.
- (2) The ‘horizontal’, ‘secondary’ domain captures *metaphysical* modality (again understood in terms of—counterfactual—possible worlds); so,
  - (2a) metaphysical necessity is secondary necessity; and
  - (2b) metaphysical contingency is secondary contingency.
- (3) There is *one space of possible worlds*; *logical possibility* consists in metaphysical and/or epistemic modalities.<sup>22</sup>

Thus,

- (4) *apriority* entails necessity;
- (5) *aposteriority* entails contingency; and
- (6) *conceivability* entails possibility.

Therefore,

- (7) there can be no necessary *a posteriori* and contingent *a priori* propositions.

As suggested already, my short way with two-dimensionalism is that it tries to draw deep epistemic and metaphysical conclusions from a purely semantic framework; so I reject all of (1) to (7) above (at least in their two-dimensional guises). That said, before discussing epistemic 2DS in any more detail, let it be noted that there is strong disagreement within two-dimensionalism on whether the ‘diagonal’ is best understood in terms of epistemic modality—and so, whether there are such strong links between *apriority*/*conceivability* and *necessity*/*possibility*.<sup>23</sup> Thus the relevant questions are; ‘can epistemic 2DS

---

<sup>22</sup> The details of this point are very important, as shall become apparent below.

<sup>23</sup> Stalnaker’s ‘meta-semantic’ two-dimensionalism (1997, 2004) has it that meaning can vary in the diagonal dimension. His main example comes from mathematics. Consider an utterance of ‘ $7 + 5 = 12$ ’ (*m*), where the speaker is uncertain whether the intended meaning is the usual base-10 meaning or one that uses base-8 notation. Propositions such as *m* are usually considered paradigm expressions of necessary *a priori* truths. However, allowing the meta-semantics to vary in the way described, *m* would have a necessary horizontal and *contingent* diagonal; i.e. *apriority* does not entail diagonal necessity and diagonal contingency does not entail *aposteriority*.

Davies (2004) argues that names have their extensions essentially and are, consequently, ‘deeply rigid’ designators. Assuming the (meta-) semantics so fixed, meaning cannot vary on the diagonal, so an apparently necessary *a posteriori* utterance such as ‘Hesperus is Phosphorus’

show that we ought to view the diagonal as epistemic modality?', and 'should 'logical' possibility be understood in terms of metaphysical *and* epistemic modalities?' I now consider the 'strongest' version of epistemic 2DS, which, as noted above, must answer these questions in the affirmative, in order to provide the required account of rationality and modality.

In 'The foundations of two-dimensional semantics', Chalmers argues that epistemic 2DS is the only account that vindicates the 'core thesis' of two-dimensionalism:

(Core) "For any sentence *S*, *S* is *a priori* iff *S* has a necessary [primary proposition]." <sup>24</sup>

Accordingly, if (Core) "...is true, it restores a golden triangle of connections between meaning, reason and possibility...", promising "...a view of modality on which there are deep links between the rational and modal domains (potentially grounding a link between conceivability and possibility)". <sup>25</sup> Thus Chalmers sets out epistemic two-dimensionalism as follows:

(T4) "A sentence token *S* is metaphysically necessary iff the secondary intension [i.e. proposition<sup>26</sup>] of *S* is true at all [possible] worlds.

(T5) A sentence token *S* is *a priori* (epistemically necessary) iff the primary intension is true at all scenarios [i.e. centred/epistemically possible worlds<sup>27</sup>]" <sup>28</sup>

Fairly clear consequences of these are as follows:

---

would be both horizontally and diagonally necessary; i.e. diagonal necessity does not entail apriority and aposteriority does not entail diagonal contingency. (I go into greater detail on all of this in Winstanley 2007.)

<sup>24</sup> Chalmers 2006a, p. 64. Chalmers uses the phrase "1-intension"; I more or less abbreviates primary; I explain the substitution of 'propositions' for 'intensions' (given the two-dimensional interpretation of Kripkean semantics, where 'proposition' replaces 'intension') in n. 16 above.

<sup>25</sup> *Ibid.* and following.

<sup>26</sup> See n. 24 above.

<sup>27</sup> Chalmers (2006a, pp. 81-3) quite clearly equates 'scenarios' and 'centred'/'epistemically possible worlds', arguing that just as possible worlds explain metaphysical modality, so are scenarios and epistemic modality related.

<sup>28</sup> Chalmers 2006b, pp. 585-6. The details of (T1) to (T3) broadly repeat points made in my exposition of general 2DS above.

- (T6) “A sentence token *S* is necessary *a posteriori* iff the secondary intension of *S* is true at all worlds but the primary intension of *S* is [true at, at least one and] false at some scenario.
- (T7) A sentence token *S* is contingent *a priori* iff the primary intension of *S* is true at all scenarios but the secondary intension of *S* is [true at, at least one and] false at some world”.<sup>29</sup>

All of this is a clear endorsement of theses (1) and (2) above. In order to derive (4) to (7) however, epistemic 2DS requires thesis (3); i.e. that there is only one space of possible worlds—‘logical’ modality consists in some combination of primary and secondary modalities. This point is quite vital; in order to show clear entailments between rationality and (*real*) modality (i.e. to have any *real* explanatory force), 2DS requires thesis (3). The point being, if there are separate spaces of metaphysical and epistemic possible worlds, then no amount of ‘conceivability’ (qua primary, epistemic possibility) will demonstrate (*real*, metaphysical) possibility (and *mutatis mutandis* ‘apriority’-necessity). This being the case however, my central concern is that if rationality and modality are so construed (*viz* as relating to a single space of possible worlds, *considered as* counterfactual and counterfactual, respectively), ‘real’, metaphysical modality is reduced to the relevant, primary modality; namely the epistemic or conceptual. Thus, ‘real’ possibility would consist in conceivability qua epistemic or conceptual possibility; ‘real’ necessity would consist in apriority qua epistemic, conceptual or semantic necessity (analyticity).

Now, as much as Chalmers is quite careful to distinguish his 2DS from the kind of position just described,<sup>30</sup> other two-dimensionalists<sup>31</sup> make precisely such an identification. For example, Jackson, following Lewis and Stalnaker, claims that propositions are sets of possible worlds,<sup>32</sup> so if *p* is *the* necessary proposition, *p* must be *a priori* and *analytic*; there is no difference between

<sup>29</sup> *Op. cit.*, pp. 587-8.

<sup>30</sup> E.g. 2006b, pp. 595-6; but see 2002 for a strong defence of theses very close to (3) and following. For example, at 2002, pp. 194-5, Chalmers advocates ‘weak modal rationalism’, such that, primary conceivability entails primary possibility. He then goes on to suggest that if ‘pure modal rationalism’ (“[p]ositive conceivability  $\equiv$  negative conceivability  $\equiv$  possibility” (p. 194)) “is true, the epistemology of modality, at least when idealized, will be simple and beautiful” (p. 195).

<sup>31</sup> Notably Stalnaker 1978 and especially Jackson 1998.

<sup>32</sup> Jackson 1998, p. 71; he cites approvingly Lewis 1986 (cf. 1968) and Stalnaker 1976.

analyticity, conceptual or logical necessity, on the one hand, and metaphysical necessity, on the other.<sup>33</sup> Accordingly, the necessary *a posteriori* (and presumably the contingent *a priori*)

“...can be explained in terms of one unitary notion of a set of possible worlds. The phenomena do not call for a multiplication of senses of possibility and necessity, and in particular for a distinction among the possible worlds between the metaphysically possible ones and the epistemically possible ones.”<sup>34</sup>

At this point, I could go into exegetical detail<sup>35</sup> but, as I stress throughout, my main focus is rationality and modality *per se* and not the interpretation of 2DS. This being the case, suffice to note the following key problems with this line of (attempted) explanation. As I hint throughout, the first problem with the claim that apriority/conceivability is epistemic (or conceptual) necessity/possibility is that either this entails the relevant species of ‘real’ modality or it does not. If not, then 2DS looks explanatorily weak; conceivability-based and *a priori* reasoning flounder short of real possibility and necessity. If on the other hand it does, then the two-dimensional account of ‘real’ modality looks extremely close to conceptualism or, even, logical positivism.

Second, when the above identification of propositions with sets of possible worlds is made (to avoid explanatory weakness), the problem of conceptualism comes into even sharper focus. If there are no necessary *a posteriori* (and contingent *a priori*) propositions in virtue of there being one necessary, *a priori* and so (allegedly) analytic proposition, two-dimensional modality is purely epistemic, conceptual or semantic; ‘metaphysical necessity’ is apriority qua epistemic, conceptual or semantic necessity, qua analyticity.<sup>36</sup>

---

<sup>33</sup> Jackson 1998, pp. 68-70 (and following) is quite clear on this issue. He further clarifies at pp. 84-6.

<sup>34</sup> *Op. cit.*, p. 70. Strictly, Jackson doesn’t consider the contingent *a priori* but it is fairly clear that his interpretation of the necessary *a posteriori* carries over to the contingent *a priori*. Cf. pp. 74-7.

<sup>35</sup> I do, with respect to Chalmers, in Winstanley 2007.

<sup>36</sup> The scare quotes suggest that *real*, metaphysical modality cannot be understood in terms of the conceptual or the epistemic. On the contrary, as I urge in later chapters, the conceptual (or better, the rational) should be understood in terms of the metaphysical.

Finally then, as I have been suggesting, the central problem (and the cause of the first two) is that an entirely semantic framework cannot generate the required substantive, metaphysical (and epistemic) conclusions. In being a *semantic* framework, the purported analyses are entirely semantic; ‘epistemic’ qua conceptual/semantic modality entails ‘metaphysical’ qua conceptual/semantic modality. Attempting to understand propositional content in terms of ‘secondary’, metaphysically possible worlds, results in the ‘single, necessary proposition’ analysis. *Real*, metaphysical modality however, does not consist in ‘horizontal’ or ‘superficial’ modality; it is grounded in the natures or essences of all (metaphysical) things. Analysing the rational (apriority, aposteriority and conceivability) in terms of ‘epistemic propositions’, which then require sets of ‘centred’, ‘epistemically possible worlds’, is perhaps even worse—in leading to an epistemic/conceptual account of modality itself. As I shall argue in what follows, *real* apriority, aposteriority and conceivability have little to do with mere, epistemic/conceptual or ‘diagonal’, ‘primary’ modality; they are grounded in ‘rational modality’, which, arguably, is itself further grounded in the metaphysical.<sup>37</sup> Moreover, insisting that there is one set of worlds and suggesting that the epistemic is ‘primary’, ought to be viewed as the central *semantic to metaphysical* error of two-dimensionalism. A semantic analysis of conceivability as epistemic/conceptual possibility and apriority as epistemic/conceptual necessity, leads to the ready conclusion that all necessity is epistemic, conceptual or *semantic*. But perhaps we should not be surprised by this, given the general idea; semantics in—semantics out.<sup>38,39</sup>

In summary, rationality and modality are (epistemological and) metaphysical matters, and 2DS is a semantic framework. The key problem, as I have been hinting all along, is that two-dimensionalists are trying to draw epistemic and metaphysical conclusions from purely semantic premises. This pattern of reasoning is illegitimate. Recalling Salmon’s criticisms of Kripkean

---

<sup>37</sup> I begin to explain this set of claims in the following (section and) chapters—although, as this is a central (and complex) set of claims, it is only fully explained later in the thesis; ‘rational modality’ is used to explain conceivability (‘rational possibility’ in Part II below) and apriority (‘rational necessity’—Part I).

<sup>38</sup> I very much echo Lowe (2007a, p. 31) here—and in the general theme that you cannot get substantive, metaphysical conclusions from semantic premises.

<sup>39</sup> Much of which is exemplified in Chalmers’s various discussions of two-dimensionalism, zombies, conceivability and possibility—as I argue in Winstanley 2007 (influenced to some extent by Yablo 1999).

essentialism,<sup>40</sup> this is akin to pulling a metaphysical rabbit from a two-dimensional hat, which has in turn materialised from semantic thin air. In order to draw such metaphysical conclusions we need to understand conceivability, apriority and *real* modality, not two-dimensional reconstructions thereof.

### 3 The real issues

So far, I have been discussing deeply *modal* issues—epistemic two-dimensionalists (and their critics) assume that apriority, aposteriority and conceivability (in addition to *metaphysical* modality), should be given broadly modal explanations; epistemic necessity, possibility and contingency, respectively.<sup>41</sup> Following two-dimensionalists to some extent, but disagreeing strongly on the details and methodology, I do view the rational (as opposed to the ‘epistemic’) as deeply embedded in the (*real*, metaphysical) modal; as I hope to explain, conceivability is something akin to *a priori* or ‘rational possibility’;<sup>42</sup> apriority itself is ‘rational necessity’.<sup>43</sup> This being the case, before introducing the remainder of the thesis, I ought to say a little more about (metaphysical) modality and apriority/conceivability understood in terms of ‘rational modality’.

As suggested already, the nature of (metaphysical) modality is a deep and vexed issue. I present the beginnings of a working understanding above but, given its centrality, I discuss modality throughout the thesis, only beginning to reach conclusions in Chapter 7. The history of philosophy is rife with discussions of (logical and other) necessity and possibility; Aristotle, Aquinas and Leibniz being key exemplars. More recent work (influenced by Leibniz) has focussed on ‘possible worlds’, modal logic and their semantics,<sup>44</sup> but as

---

<sup>40</sup> Salmon 1981.

<sup>41</sup> Although critical of 2DS, Soames (2005) assumes throughout that conceivability is epistemic possibility and apriority is epistemic necessity (see especially, pp. 82-3, 198 and 204-6).

<sup>42</sup> See chs. (3 and) 5-7 below, for more detail.

<sup>43</sup> As I argue (especially) in chs. 2-4 and 7.

<sup>44</sup> See Lewis 1968, 1986; Plantinga 1974; Adams 1974; Stalnaker 1976 for early possible-worlds theories. See Loux’s (1979) classic collection for an overview of many of the central issues. Kripke himself was one of the main developers of modal logic, suggesting a possible-worlds understanding throughout his 1980. See Chellas 1980 and Garson 2008 for an overview—and the latter for further references.

indicated already, I view possible worlds in particular as more heuristic than deeply ontological—and I suggest further in Chapter 7 that, since the main positive arguments are logico-semantic, the possible-worlds framework is another example of the (invalid) semantics to metaphysics form of reasoning. All of this being the case, any kind of literature review would be otiose at this point.

Similarly with apriority (and aposteriority), the nature of the phenomenon is complex and vexed. Although Kant offers perhaps the classic discussion of the *a priori* as knowledge that is independent of experience, prior discussions of clearly related topics are too numerous to cite; e.g. from Plato's *Meno* to Hume's *Treatise*. Taking a lead from the positivist rejection of Kant's 'synthetic *a priori*', more recent treatments have centred on analyticity, resulting in a broadly Quinean consensus that even if apriority is not an empty category, it is fully explicable in terms of logical or conceptual necessity.<sup>45,46</sup> Again then, any kind of literature review would be somewhat redundant here;<sup>47</sup> I provide a detailed discussion of the *a priori* in Chapters 2 to 4 below, with references throughout.

Turning to conceivability, thought on this and clearly related issues, such as imagination and intuition, as well as thought experimentation, is as evident as discussions of apriority and modality.<sup>48</sup> More recently there has been greater discussion of conceivability—especially as related to possibility.<sup>49</sup> As before, a

---

<sup>45</sup> Two-dimensionalists (and their critics) are no exception here. Jackson 1998, for example, couches his entire discussion in terms of epistemic/conceptual necessity qua analyticity (see especially, pp. 50-5 and 84-6). Similarly, Soames's (2005, pp. 333-7) final examples of the contingent *a priori* are deeply semantic, involving as they do an 'actually' operator in conjunction with a broadly Kripkean semantics.

<sup>46</sup> See Quine 1951 (and Devitt 2005) for the emptiness claim.

<sup>47</sup> But I must cite Bonjour's 1998 as a generally excellent discussion; cf. several papers in Boghossian and Peacocke 2000. See Russell 2008 for many further references.

<sup>48</sup> E.g. (conceivability and especially imagination) from Descartes, Berkeley, Hume and Kant, through to Sartre and the phenomenologists. For more recent work on imagination, see (works cited in) Gendler and Hawthorne, 2002, pp. 7-9 (n. 17). On intuition, see especially Bealer 1987, 1996a, 1996b, 1999, 2002; Yablo 1993; DePaul and Ramsey 1998. On thought experiments, see Horowitz and Massey 1991; Sorensen 1992. Much of the work on thought-experimentation, in being broadly empirical, goes beyond the scope of this thesis—I am interested in '*philosophical* conceivability' inasmuch as this is related to possibility.

<sup>49</sup> See in particular, Van Cleve 1983; Yablo 1993; Tidman 1994; Chalmers 2002; and Fiocco 2007 (for an interesting discussion of conceivability and epistemic possibility—to which I am relatively sympathetic). See also the 'Introduction' of (and several papers in) Gendler and Hawthorne 2002, for an excellent overview of conceivability, possibility and several related issues—as well as references to many further, relevant works; cf. David Chalmers's online bibliography of 'zombies and conceivability arguments' (<http://consc.net/mindpapers/1.3b>; cf. §§1.3c-g of the same).

detailed review this literature would be somewhat superfluous (given the discussion in ensuing chapters); that said, some consideration of Van Cleve's and Yablo's work<sup>50</sup> would be apposite, in order to frame the remaining discussion.

In brief detail, Van Cleve's discussion (much like Yablo's) begins with some taxonomic analysis of the meaning of 'conceivable'.<sup>51</sup> That said, he does identify a notion of "strong conceivability" as seeing that a proposition is possible, contrasting this with *p*'s being "weakly conceivable", when "*s* does not see that *p* is impossible".<sup>52</sup> Although some distinction between strong and weak conceivability is useful (but, I claim, better explained in terms of *prima* and *secunda facie* conceivability<sup>53</sup>), in couching his analysis in terms of *intellectual* seeing, Van Cleve is in danger of (i) accusations of obscurantism (as are often levelled against 'faculty of intuition'-based accounts of the *a priori*)<sup>54</sup> from more empiricist critics and (ii) offering a deeply psychologicistic account. For the latter reason in particular, I reject Van Cleve's approach—as well as sections of Yablo's analysis that make similar moves.<sup>55</sup>

Turning briefly to the details of Yablo's account, as I note above, whilst it is quite comprehensive, it is nonetheless deeply linguistic; many of the considerations Yablo offers consist in 'common use' analyses of 'conceivability'.<sup>56</sup> After many pages of such enquiries, Yablo alights on the decidedly psychologicistic: "...*p* is conceivable for me if (CON) I can imagine a world that I take to verify *p*".<sup>57</sup> Given my remarks on the possible-worlds analysis of modality and on epistemic possibility, which (despite Yablo's

---

<sup>50</sup> I set aside Tidman 1994, as there is no clear, positive account of conceivability (see pp. 307-8 for the beginnings). I discuss Chalmers with respect to two-dimensionalism, above.

<sup>51</sup> Van Cleve, 1983, p. 36 and Yablo 1993, *passim*; cf. Tidman 1994, *passim*. Yablo provides an interesting discussion of Goldbach's conjecture (pp. 8-9) and criticism of the 'epistemic possibility' approach (pp. 9-11, 22-5).

<sup>52</sup> 1983, p. 37; cf. Chalmers's discussion of positive and negative conceivability (2002, pp. 149-56).

<sup>53</sup> See chs. 2 and 5-7 for discussion of this distinction with respect to apriority and conceivability respectively. My distinction is related to (but significantly different from) Chalmers's discussion at 2002, pp. 147-9.

<sup>54</sup> See ch. 2, §3 for more discussion.

<sup>55</sup> E.g. Yablo 1993, pp. 29ff. Van Cleve does offer an excellent discussion of the Descartes-Arnauld exchange on 'distinct perception' (pp. 38-41; cf. Yablo 1993, pp. 15-21). Geirsson 2005 also offers an overly epistemic account of conceivability.

<sup>56</sup> Evident throughout the 'negative discussion' (Yablo, 1993, pp. 7-25) and especially in the 'positive discussion' (pp. 26-30).

<sup>57</sup> *Op. cit.*, p. 29.

remarks to the contrary)<sup>58</sup> appears extremely close to ‘imagining a world’, it is fairly clear that I take this analysis to fail. As with the two-dimensional account criticised already, if conceivability is purely epistemic, it is difficult to see how this has any real bearing on metaphysical possibility; if  $p$  is impossible, I fail to see how my imagining a world such that ‘ $p$ ’ has any real bearing as to  $p$ ’s possibility.

As should be clear from the foregoing, I take current, standard accounts of apriority, aposteriority and conceivability to be very much cashed out in terms of epistemic modality (e.g. conceivability is epistemic possibility, apriority is epistemic necessity and so on). In the remainder of this thesis, going beyond this a little, I shall argue that such explanations are ultimately best understood in terms either of the positivistic conceptualism just levelled against two-dimensionalism, or of a more subjective notion along the lines of ‘conceivability-for-me’ or ‘apriority-for-all-I-know’. In short, ‘conceivability’ is something like epistemic possibility qua ‘imaginability’ (viz of qualitatively, or epistemically identical situations) and apriority is epistemic necessity qua ‘unimaginability of falsehood’; that is, deeply qualitative, subjective and, ultimately, (epistemic) possible worlds-based forms of reasoning. The point being, where something is deemed epistemically necessary/possible and so ‘a priori’/‘conceivable’, this is only in the weakest, subjective epistemic sense; apriority/conceivability ‘for-me’ or ‘for all I know’. As I suggest above, whilst such versions of ‘apriority’ and ‘conceivability’ might be excellent guides to ‘epistemic modality’, they are not good guides to any genuine or real kind of *metaphysical* modality. This being the case, I shall argue that apriority and conceivability should best be understood in terms of a more deeply ‘metaphysical’, ‘*modal*’ modality, which sits between the logical, epistemic and the metaphysical; ‘rational modality’. I aim to explain conceivability in terms of ‘rational possibility’ and apriority in terms of ‘rational necessity’ (as well as aposteriority in terms of ‘rational contingency’); in short, I shall argue that  $p$  is conceivable iff  $p$  is rationally possible,  $p$  is *a priori* iff  $p$  is rationally necessary and  $p$  is *a posteriori* iff  $p$  is rationally contingent. All of this being the case, before outlining the remainder of the thesis, I ought to say a few words about

---

<sup>58</sup> 1983, pp. 22-5.

rational modality in general (and rational possibility, contingency and necessity in particular).

As I suggest above then, following two-dimensionalism somewhat, I do take the rational (i.e. apriority, aposteriority and conceivability) to be a somewhat mixed epistemic-modal category. That is, apriority, for example, is best understood in terms of some kind of deeper, wider necessity (and I focus on apriority/rational necessity here for ease of expression—my remarks extending to aposteriority/rational contingency and conceivability/rational possibility *mutatis mutandis*), which sits between the epistemic and the metaphysical. Going into slightly more detail, in Chapter 4 below (in particular), I offer a negative account of rational necessity, discussing kinds of necessity such as the epistemic, logical and metaphysical, suggesting that the rational cannot be coextensive with any of these. In particular, it cannot be fully epistemic as the latter is very subjective and, as the name suggests, *epistemic*; it is necessity-for-all-I-know (as I suggest above). Similarly it cannot be fully logical, as the logical requires the rational (and metaphysical) for its own explanation (as I outline in ch. 4, §3.2). Finally, it cannot simply be the metaphysical, given, for example, that there are many problematic cases of necessities that are not knowable *a priori*. Thus I conclude that rational necessity is a mixed, epistemic-metaphysical modality that must sit between the epistemic and metaphysical. Now this is all well and good, but I realise the need for a more positive account of rational necessity (and rational modality more widely).

Going into more positive detail then, (again in Chapter 4) I begin to offer an account in terms of necessity in virtue of the natures of the relevant propositions, together with the rational assumptions of the relevant speakers or thinkers. What I mean by this is as follows. Apriority qua rational necessity (and rational modality more widely) is what it is necessary (or possible or contingent for conceivability and aposteriority) to think, believe or know. In short what it is necessary (possible or contingent) to reason;  $p$  is *a priori* (or conceivable/*a posteriori*) iff  $p$  is rationally necessary (possible/contingent). Now clearly, and as intimated at the beginning of this paragraph, whilst this is a very 'objective' account of apriority, some degree of subjective variance must

also be built in. This being the case, whilst  $p$  might be more widely or genuinely *a priori* qua rationally necessary, I also discuss *prima facie* and *secunda facie* apriority in terms of what it is necessary to reason, given the epistemic position of a more or less idealised reasoner. So the first notion of apriority I describe above, qua genuine (or ideal) rational necessity, is, as I suggest, a deeply metaphysical, modal notion (somewhat idealised, as for what might be described as a perfect, ideal reasoner or similar), whereas the latter two qualifications (*prima* and *secunda facie* apriority) build in the required caveats for the account to be extended to less idealised examples of reasoning.

To fill this out a little, what I mean by phrases such as ‘what it is necessary/possible/contingent to think or reason’ is as follows. Taking some examples I shall rely on throughout, if it is metaphysically necessary that ‘ $2 + 3 = 5$ ’, or that ‘Hesperus is identical to Phosphorus’, then strictly, the negations of such propositions are also metaphysically impossible and so, as I shall argue, strictly (i.e. genuinely, ideally) rationally impossible or inconceivable. That is, ‘ $\neg(2 + 3 = 5)$ ’ or ‘Hesperus is not identical to Phosphorus’ (in the relevant sense) are metaphysically impossible and so rationally impossible or inconceivable; it is just not possible for a reasoner (genuinely) to rationally assert such propositions. The key point being, if two things are identical (or perhaps better, if one thing is self-identical) it is just not possible to imagine ‘their’ non-identity, or better, its non-self-identity. Now as I say, this is somewhat (but not entirely) idealised. Of course, an idealised reasoner would (and could) not entertain such possibilities but a less ideal thinker might entertain related possibilities (perhaps what Kripke might call qualitatively identical epistemic counterparts) in the region of the alleged metaphysical impossibility (given, for example, a weak understanding of ‘2’ or ‘+’ or of, perhaps, the necessity of identity or the meaning of ‘Hesperus’) and this latter situation is captured by what I call *prima facie* conceivability qua rational possibility.

In essence then, what I am saying is that for something to be genuinely described as *a priori* (or conceivable/*a posteriori*) it must be rationally necessary (or possible/contingent) and, ultimately, metaphysically so. If Hesperus is identical to Phosphorus (if they are one and the same, self-identical thing) imagining their non-identity is, as I shall argue, tantamount to asserting a

contradiction; asserting a logical, *a priori*, rational and metaphysical impossibility. This then is what I mean by the notion of ‘rational modality’ qua rational necessity, possibility and contingency; it is a broadly metaphysical modality in that there is an entailment relationship between a rationally necessary (possible or contingent) *p* and a metaphysically necessary (possible or contingent) *p* (even if the entailment in the other direction fails). That said, it is also a mixed, ‘epistemic-metaphysical’ modality as qualified for less idealised reasoners, for *prima facie* and *secunda facie* reasoning.

Now, as should be clear, this kind of account has many interesting and potentially problematic implications, some of which I now highlight and deal with (at least for present purposes). First, as I stress throughout the above, my account of conceivability, apriority and aposteriority as rational possibility, necessity and contingency is admittedly, deeply metaphysical. Where *p* must be metaphysically necessary in order to be genuinely *a priori* justifiable, for example, this is akin to apriority as being a rational or metaphysical status judgement rather than as being some kind of ‘guide’, in the standard epistemic sense, to metaphysical necessity *per se*. Only in the weaker, *prima* and *secunda facie* variants can the rational be viewed as such an epistemic (i.e. as traditionally construed) guide to (metaphysical) necessity.

Second then, and deeply related, is the very potential objection that such a construal of the rational cannot be any kind of relevant ‘guide’ to metaphysical modality. Against this, I make two points. First, rational modality is a ‘guide’ to the metaphysical in that, for example, and as I stress above, rational necessity *entails* metaphysical necessity; it is the best guide to metaphysical modality we might possess. Again however, as I stress above and shall argue below (especially Chapter 4), since there is no bi-conditional relationship here, although the rational entails the metaphysical modal, the two are not identical or co-extensive; hence the requirement to recognise rational modality as a separate kind of modality.

My second subsidiary and final point, is that (as I already admit) the rational cannot genuinely be considered a ‘guide’ to the metaphysical in the standard, epistemic sense, since it is closer to being a fully metaphysical notion than a standardly epistemic one. This however is not the problem that critics

might think it is. The point being, standard conceivability, apriority and aposteriority as understood in terms of *epistemic* possibility, necessity and contingency, are themselves not at all very good guides to the metaphysical; if conceivability is to be understood qua conceivability-for-me, conceivability-for-all-I-know, or in terms of sets of epistemically possible worlds, this can only be considered the weakest, most subjective guide to genuine, metaphysical possibility. In fact, as I shall argue, it is no good guide at all; conceivability qua epistemic possibility is only a guide to epistemic, conceptual or, perhaps (strict) logical possibility (as I argue in Chapter 4 in particular), and *mutatis mutandis* apriority qua epistemic necessity and metaphysical necessity. In short, epistemic modality is only a guide to epistemic, conceptual or (strict) logical modality; the rational needs to be partially metaphysical in order to entail or be any kind of genuine guide to the metaphysical.

Finally then, before providing an outline of the thesis, I also note that I make much use of the phrase ‘is grounded in’ (and cognates) both in this introductory chapter and below. As with ‘rational modality’ some words of introduction are required. What I mean by such claims is as follows. If, as I suggest, apriority (for example) is best understood in terms of some kind of necessity, this implies that apriority entails (or at least implies) the relevant kind of necessity. Now, I claim, if apriority entails (some kind of) necessity, apriority ‘is’ (qua grounded in or, at the very least, qua involving) the relevant species of necessity; the latter is a necessary condition of apriority. This is the main thrust of such claims as that apriority/aposteriority/conceivability are grounded in necessity/contingency/possibility. Similarly (although I make less of this suggestion), where I claim that the rational is ultimately grounded in the metaphysical, what I should be taken to be saying is that apriority (and so on) entails, implies (or at the very least, strongly involves) metaphysical necessity (and so on).

Now, I discuss involvement, grounding and the relevant modalities very much throughout the remainder of the thesis. The above remarks then, should only be viewed as introductory. This being the case, let me both conclude this chapter by offering an outline of the thesis.

## 4 Thesis outline

In Chapter 2 (§§2 and 3) I consider the *a priori* as traditionally understood in terms of negative (e.g. independence from experience) and positive accounts (e.g. rational insight into necessary truth). Finding problems with both kinds of explanation, I nevertheless draw two lessons; (i) that an *a priori* proposition is one that is, strictly, not defeasible by empirical evidence, and relatedly, (ii) that some notion of necessity is involved in the claim that a proposition is *a priori* justifiable. I go into much more detail on (i) via a discussion of Euclidean geometry (§5) but before commencing the main discussion of apriority and modality, I also consider the *a priori* with respect to intersubjectivity (§4) and fallibility (§6).

Turning to lesson (ii), if apriority somehow entails necessity and similarly for aposteriority and contingency, perhaps some form of coincidence thesis (CT) obtains. In Chapter 3 (§2) I use Goldbach's conjecture (GC) and its 'contingent equivalent' (CGC)<sup>59</sup>, to disambiguate (CT) into the following four, putative conditionals:

- (CT1) apriority entails necessity;
- (CT2) aposteriority entails contingency;
- (CT3) necessity entails apriority;
- (CT4) contingency entails aposteriority.

I also claim that (GC) and (CGC) show that unqualified versions of (CT3) and (CT4) cannot hold, and that the rational and metaphysical domains cannot be coextensive; whilst all true propositions are either necessarily or contingently true, they are not all justifiable *a priori* or *a posteriori*.

Of course, the main threat to any (attenuated) (CT) is the possibility of contingent *a priori* and necessary *a posteriori* propositions. This being the case, I spend some time on a detailed discussion of the contingent *a priori* (ch. 3, §3) and the necessary *a posteriori* (ch. 5). Beginning with (CT1) and the contingent

---

<sup>59</sup> I do not state (CGC) as a separate conjecture as I am using the label generically, to indicate a putative, contingent thesis that is unknown or potentially unknowable.

*a priori*, I argue that genuine apriority does entail necessity; indeed a proposition can only be justifiable on an *a priori* basis if it is (or asserts) a necessary circumstance. Thus I argue that apparently ‘contingent *a priori* sentences’ express (at least) two propositions, but these are (generally) either ‘widely’ contingent but justifiable on an *a posteriori* basis (if at all justifiable), or if justifiable *a priori* then ‘narrowly’, necessarily the case.<sup>60</sup>

Finally concerning the *a priori*, and before taking up the issue of the necessary *a posteriori*, in Chapter 4 I place ‘rational necessity’ (and ‘rational modality’ more widely) with respect to other kinds of modality, arguing that it explains both negative and positive accounts—whilst avoiding allegations of obscurantism and mysteriousness that can be levelled against the latter (§2). I also claim that rational necessity is not the same as epistemic or logical necessities (§3), since epistemic necessity is entirely non-modal and subjective, whereas logical necessity is entirely formal and analytic, and, most importantly, requires apriority (or rational necessity) for its explanation. Rational necessity, on the other hand, is (at least) quasi-modal, intersubjective, non-trivial and it explains or grounds logical necessity. I conclude Part I of the thesis, by arguing that the *a priori* is not coextensive with, but is grounded in, metaphysical necessity (ch. 4, §4); if *p* is knowable on an *a priori* basis, there is a strong (metaphysical) sense in which *p* must be the case.

Having discussed the *a priori* and modality, in Part II I set out to understand the relationships between rationality (conceivability, apriority) and modality, as well as to offer an account of modality itself. In Chapter 5 I discuss the necessary *a posteriori* as a potential counter-example to (CT2). In addition, as I suggest in §1 above, the necessary *a posteriori*, if genuine, would also appear to pose a serious problem to conceivability-possibility reasoning; since the negation of a necessary *a posteriori* *p* appears to be ‘conceivable’ but entirely impossible. With respect to the necessary *a posteriori* then, as with the contingent *a priori*, I argue that there are no genuine cases; apparently ‘necessary *a posteriori* sentences’ in fact analyse out into (at least) two propositions, which assert either necessary circumstances justifiable on an *a priori* basis (if justifiable), or *a posteriori* justifiable but contingent

---

<sup>60</sup> I explain ‘width’ and ‘narrowness’ both in the chapter under discussion and throughout chs. 5-7.

circumstances. In this way, I claim that aposteriority does entail contingency, in that a proposition that is essentially justified on an *a posteriori* basis, must be a contingent proposition. Similarly, although there are apparent ‘necessary *a posteriori*’ sentences, (genuine) conceivability still entails possibility, since if *p* is impossible (‘Eminem is not Slim Shady’, for example), strictly, this is also inconceivable or rationally impossible as well (the interim conclusion of ch. 5).

During my discussion of the necessary *a posteriori*, I begin to suggest that a consideration of the semantics and pragmatics of belief ascription is required for a more complete understanding of conceivability and possibility. This being the case, I deal with Frege’s and Kripke’s puzzles,<sup>61</sup> conceivability and possibility in Chapter 6. With respect to the two puzzles, I argue that they rest on a confusion of ‘wide’ and ‘narrow’<sup>62</sup> propositions asserted by a pair of original and apparently problematic sentences. For example, if *a* genuinely, rationally believes that ‘Paderewski is musical’, then *a* ought to conclude that ‘it is not the case that Paderewski is not musical’; *a* ought to realise that Paderewski’s being both musical and not musical is impossible. Importantly Kripke’s puzzle (and the related versions of Frege’s problem) trades on sentential ambiguities that mask such impossibilities; these are removed by a more complete, propositional, circumstantial and *metaphysical* understanding of the alleged problem cases. I conclude Chapters 5 and 6 by arguing that, strictly and as understood above, aposteriority entails contingency and conceivability entails possibility; there are extremely close ties between the rational and metaphysical, modal domains—even if the two are not coextensive.

In the final chapter, having expressed a commitment to a heuristic account of ‘actuality’ and ‘possible worlds’ (throughout the thesis), I begin to outline an account of metaphysical modality itself (§2). It is basic but grounded in the natures or essences of all things; indeed it is a subspecies of essentialist necessity (as broadly suggested by Fine 1994). With this understanding in place, I further account for rational modality as metaphysical modality in virtue of human (or similar) rational capacities; what it is (rationally) necessary (for

---

<sup>61</sup> See Kripke 1979 and Frege 1892 respectively.

<sup>62</sup> See n. 59 width and narrowness.

apriority) and possible (for conceivability) to think, respectively. After summarising my findings (§3), I then discuss potential objections and issues, such as accusations of two-dimensionalism and the possibility of modal error (§4)—the latter of which I explain largely in terms of the distinction between strict, philosophical conceivability (rational possibility) and weaker conceivability (more akin to epistemic possibility).

# PART I

## APRIORITY AND MODALITY

# Chapter 2

## The *A Priori*: Preliminaries

### 1 Introduction

The main concern of this thesis is the relationship between rationality and metaphysical modality; specifically whether apriority entails necessity, aposteriority entails contingency and whether conceivability entails possibility. In the previous chapter I begin to suggest an account of conceivability in terms of '*a priori* possibility'. Given all of this, we need to understand the *a priori/a posteriori* and the relationship between apriority/aposteriority and necessity/contingency, since however these are related, presumably conceivability and possibility are similarly related. In this and the following chapters I intend to spell out those relations by offering, first, an account of the *a priori/a posteriori* and modality (mainly in the following two chapters but continued throughout), then an account of conceivability and modality (Chapters 5-7).

With respect to the *a priori*, there is a lot to be unpacked before I can begin to offer any kind of detailed account. First, there are general issues such as the 'bearers' and 'makers' of apriority; i.e. 'what is *p* when *p* is *a priori*?' and 'what makes *p* *a priori*?'<sup>63</sup> Second there is a cluster of problems concerning the

---

<sup>63</sup> Clearly there is a lot of shorthand here. By '*p* is *a priori*' I mean something like '*p* is justifiable *a priori* (for a subject *s*)'—with 'justifiable' deliberately wider than 'justified', given currently unknown but knowable *a priori* truths. Much of this (including the parenthesised 'subject *s*' remark) is explained in §4 below.

epistemic, alethic and modal status of *a priori* claims; what is the relevant status of *p* when *p* is *a priori*? Regarding this second set of problems, I address the epistemic, alethic and especially the modal issues of apriority throughout the following two chapters, and, to a slightly lesser extent, I examine some of the epistemic and alethic issues (such as justifiability, defeasibility and fallibility) in the latter half of this chapter. Concerning the first set and the *a priori* in general, this is the central topic of this chapter.

Before dealing with some of the more complex issues however, let me say a few words concerning two of the original questions mentioned above; ‘what makes *p a priori*?’ and ‘what are the ‘bearers’ of apriority?’ As regards the first, I take this either to be a more or less epistemic matter (i.e. what exactly warrants or justifies *p* when *p* is justifiable *a priori*?) and as such beyond the scope of this thesis; or, rather, too closely related to the issue of the nature of apriority to be a distinct question; i.e. *what is a priori* justification? That being the case, I set aside the distinctly epistemic aspects of this question in what follows and focus on the nature of *a priori* justification as it relates to necessity and possibility claims.

Regarding what might be called the ‘bearers’ of apriority, I take these to be propositions in the first instance but, since I take propositions to assert or express (or even, ultimately, to be) circumstances (that is arrangements of objects, attributes and so on), it is the latter that are the bearers of apriority. That said, since circumstances (and related notions) are vexed, since most other theorists in the area talk of *a priori/a posteriori* propositions and since apriority as so discussed is a broadly epistemic topic, I take the bearers of apriority to be the same as those of standard epistemic notions such as knowledge and belief, that is propositions (and/or the circumstances/objects/

---

In addition, I clearly assume that there is such a thing as *a priori* justification; I largely ignore sceptical arguments to the contrary, citing a similar list of candidate items of *a priori* knowledge as does Bonjour (1998, pp. 2-6 and 100-6) and following several of the anti-sceptical arguments of the same (1998, chs. 2 and 3). For example, given that logic, mathematics, some central philosophical theses, together with some more general claims, such as ‘nothing can be red and green all over’, are *a priori*, and given that the very process of rational argument (qua system of rational inference) is itself largely *a priori*, it is evident that there is some important phenomenon in the region. This and the following chapter then, are very much an extended, tacit (and occasionally explicit) argument against the likes of Quine 1951 and Devitt 2005. Even assuming Quine’s article is a successful attack on the analytic, it is not at all clear that the *a priori* can be explained in terms of that notion; so it is also not at all clear that the article successfully attacks apriority.

attributes and so on, which they express). This being the case, my ultimate concern with respect to the *a priori* is whether (and if so how and in what sense) a proposition's apriority ensures its necessity (or *vice versa*). The point being, I am most concerned with the metaphysics of rationality and modality; whether and how *a priori*-necessity and conceivability-possibility claims are justifiable. Hence with respect to the *a priori*, I seek to understand the nature of apriority; what apriority *is*; but in particular, how it relates to necessity and conceivability claims; and especially whether an *a priori* (or conceivable) proposition is also a necessary (or possible) proposition (and/or circumstance).

By way of a broad working understanding then, let us assume apriority to be knowledge or justification that is 'independent of experience'; *p* is *a priori* (for a subject *s*) iff *p* is justifiable without experience (for *s*).<sup>64</sup> This raises several immediate concerns; namely (i) the characterisation of the *a priori* in terms of 'negative' and 'positive' accounts, and relatedly, the relevance of 'independence' and 'experience'; (ii) the epistemic status of *a priori* justification, with respect to objectivity and subjectivity; (iii) the related issue of *a priori* knowability or justifiability—is what is *a priori*, justified or justifiable *a priori*?; (iv) the question of defeasibility and corrigibility—for example, is *a priori* justification defeasible, and if so, is it empirically, or only rationally, defeasible?; and (v) the epistemic, alethic and modal status of apriority itself (and specifically of *p* when *p* is *a priori*); for example, if *p* is *a priori*, then is *p* necessary and if so, in what sense? In this and the following chapters, I take up these concerns in turn. I deal with 'negative' and 'positive' accounts in §§2 and 3 of this chapter; objectivity, subjectivity and justifiability in §4; and defeasibility, corrigibility and fallibility in §§5 and 6. In particular, a set of issues arises from the consideration of 'experience-independence' in §2; *a priori* justification seems fallible and defeasible, potentially empirically so. In §§5 and 6 I examine such claims, arguing that the *a priori* is only essentially,

---

<sup>64</sup> As already suggested, there is a sense in which apriority is a 'subjective' notion, *p* being *a priori*-for-a-subject-*s*. Thus a better expression might be '*s*'s belief that *p* is *a priori* iff *s*'s belief that *p* is justified independently of experience' (cf. Casullo 2003, pp 29-32). Presently, I use the more neutral, 'objective' phrasing for stylistic purposes.

rationally defeasible, whilst at the same time avoiding any commitment to infallibilism in regards to '*prima facie*' apriority at least.

These sections are where I set the scene for the discussion of the wider issues of alethicity and modality (i.e. issue (v) above), and for the advancement of my general thesis of the *a priori*, in the following two chapters. This being the case, that is, with this chapter being largely introductory and very much setting the scene for the following two chapters, I do not present any detailed conclusions until towards the end of Chapters 3 and 4.

## 2 A negative account?

If as I suggest above, the *a priori* should be characterised initially in terms of justification that is independent of experience, there is a sense in which this might be said to be a 'negative', or at least a 'derivative' account.<sup>65</sup> It could be said to be negative based on the assumption that there is a class of *a posteriori* justifiable propositions, and the *a priori* is 'not that'. Without an explanation of aposteriority then, we might then be left somewhat in the dark.<sup>66</sup> Indeed, in §4 below (and in the next chapter), I suggest that apriority and aposteriority are not so clearly interdefinable; mathematical 'unknowns' (and potentially 'unknowables') such as Goldbach's conjecture arguably being neither *a posteriori* nor *a priori*. There is then very good reason to suspect that such a fully negative account will not be forthcoming; even assuming the *a posteriori* can be easily demarcated, there are clear potential counter-examples to the claim that apriority is non-aposteriority. This being the case, perhaps a 'derivative' account would be preferable? An account of apriority would be derivative, if we could provide separate, working analyses of the notions of

---

<sup>65</sup> There is a sense in which I appear to agree with Casullo's claim (2003, ch. 1) that 'epistemic'—that is, largely 'negative' and 'positive'—accounts of *a priori* justification are initially the most promising; hence I begin by considering the Kantian, 'negative' conception. As will become clear however, my analysis cuts across Casullo's in that I take 'positive' notions such as 'rational intuition' and 'insight' to be underpinned by a quasi-modal notion, 'rational necessity'. This makes my account not 'purely epistemic' (i.e. 'non-epistemic') in Casullo's terms.

<sup>66</sup> With the likes of Bonjour (1998), Butchvarov (1970, pt.1, §9) and Pollock (1974, ch. 10), I view negative accounts as somewhat uninformative.

independence and experience; the *a priori* then being non-experiential justification (and Goldbach's conjecture would be neither *a posteriori* nor *a priori*).<sup>67</sup> Accordingly, sections 2.1 and 2.2 are an attempt to get to grips with independence and experience in turn.

Now, it might be objected that a negative or derivative account of the subject matter somehow undermines the importance of the notion; so a positive account, along the lines of 'rational insight' or 'rational intuition'<sup>68</sup> is to be preferred. On the one hand such a position is attractive; if there is some notion in the region of rational insight (or even some faculty of rational intuition), which explains apriority, this would provide an appealing account of many areas of epistemology. On the other hand, first, one might contend that all analyses are 'derivative' to a certain extent; hence if a working understanding of independence from experience is available, so much the better for apriority. Second and more importantly though, many contemporary empiricists would find the notions of rational insight and especially a faculty of rational intuition, deeply objectionable.<sup>69</sup> This being the case, in (this and) the following chapters, I discuss the notion of 'rational necessity' as providing the best account of apriority; suggesting that *p* is *a priori* iff *p* is *rationally necessary*. In the following two chapters in particular I argue that it is this latter notion that grounds independence from experience and 'rational insight', thus there is a clear sense in which 'negative', 'derivative' and 'positive' accounts of apriority are something of a side issue; rational necessity does the explanatory work. Having said this, in order to understand the notion of rational necessity, and the general relationship between apriority and modality, we must first get to grips with the topics of independence and experience.

---

<sup>67</sup> 'Non-experiential justification' is extremely close to Casullo's 'positive' (P2) "S's belief that *p* is justified *a priori* iff s's belief that *p* is justified by *some* non-experiential source" (2003, p. 31); making (P2), on my account, a negative, rather than a positive, analysis of apriority.

<sup>68</sup> As offered respectively by Bonjour (1998, 2005) and Bealer (1987, 1996a, 1996b, 1999).

<sup>69</sup> I am thinking of a line of philosophers stretching from (at least) Quine 1951 to Devitt 2005.

## 2.1 Independence

A standard position on apriority is that to know *a priori* that  $p$  requires understanding  $p$ , which in turn requires having had some experience relevant to  $p$ . That is, in order to understand a concept, one must possess that concept, and, at least some experience is required for concept-possession.<sup>70</sup> For example, consider the putative *a priori* claim [red is a colour]. To understand such a proposition, I need to possess the concepts 'red' and 'colour'; and to possess such concepts, presumably I need to have experienced the colour red (or at least to have had some relevant experiences). This however, is where a distinction between (i) how we can come to know that  $p$  and (ii) how  $p$  is justified, needs to be made explicit; a distinction between what might be called 'occurrent (*a priori*) knowledge' and *a priori justification* itself. The point being, it would be fairly straightforward to insist that occurrent knowledge cannot be fully independent of experience, based on the assumption that coming to know that  $p$  (here) involves at least minimal concept-possession and thereby experience, as above. This however, would miss the central point that *a priori* justification can be independent of experience even when the related (occurrent) knowledge claim appears to be experiential. This is because *a priori* justification concerns one's reasons for believing a proposition, rather than the occurrent knowledge of that proposition and inasmuch as the latter is experiential and the former is not, so *a priori* justification is independent of experience. That is to say, if [red is a colour] is *a priori*, this is in virtue of rational reflection revealing 'necessary'<sup>71</sup> connections between the concepts, properties and/or objects involved, rather than in virtue of one's simply having experienced redness to be a colour. This being the case, we can say that limited

---

<sup>70</sup> Peacocke 2000 and Goldman 2007 are key, recent discussions of the issue of apriority and concept possession.

<sup>71</sup> This point is doubly contentious. First, I go into much more detail on the nature of the necessity involved in subsequent chapters. In this chapter the reader is invited to insert tacit scare quotes around all instances of the term 'necessary'. Second, despite my espousal of fallibilism, any claim that *a priori*  $p$  entails  $p$  seems to suggest a strong infallibilism. My initial response to this potential objection is that *prima facie* '*a priori*' justification can concern a false  $p$ , but if further rational (*a priori*) reflection reveals  $\neg p$ , then  $p$  can hardly be seen to be *a priori* in the first instance; hence fallible but corrigible *a priori* justification. I discuss this in much more detail in §§5 and 6 below.

experience is required for *occurrent* (*a priori*) knowledge, but that *a priori justification* is *independent* of experience in the relevant manner.

Having avoided one possible pitfall in accounting for apriority in terms of experience-independent justification, there is however another potential issue concerning alleged defeasibility or revisability by experiential evidence. If *a priori* justification can be defeated by empirical evidence, then the alleged problem is that the *a priori* is not independent of experience in virtue of being so defeasible. Now, I argue that the claim that *a priori* justification is empirically defeasible has things slightly wrong, for the following two reasons. First, it is wrong to claim that the *a priori* is *essentially*, empirically defeasible; instead we should say that it is ultimately defeasible in the light of additional *a priori* reasoning—so it is the *a priori* rather than the experiential that is doing the relevant defeating work.<sup>72</sup> Second, even where such empirical defeat appears to occur, this does not imply that apriority is not experience-independent. What I mean here is that where we have some putative *a priori*  $p$  and some *a posteriori* or experiential  $q$  (such that  $q$  is either equivalent to, or entails,  $\neg p$ ), we should not conclude that  $p$  is defeated by an *essentially*, empirical  $q$ , but rather that, since we have  $\neg p$ ,  $p$  was not genuinely *a priori* justified in the first place. That is, if  $p$  is (genuinely) *a priori*,  $p$  must (in the relevant—to be discussed—sense) be true; so if  $\neg p$ ,  $p$  cannot be or have been (genuinely) *a priori*.<sup>73</sup> In addition, even where an empirical  $q$  does so happen to defeat an allegedly (but not genuinely) *a priori*  $p$ , this does not show that apriority is not experience-independent; further analysis, I claim, shows instead that *what we take to be a priori* ( $p$  in this case) is *essentially* defeasible in the light of additional *a priori* reasoning. This is to say, where some such apparently empirical claim  $q$  does happen to defeat or revise some *putatively a priori*  $p$ , it is not entirely clear that  $q$  is essentially *a posteriori*. Instead, I suggest, if  $q$  is an *a posteriori* truth, then  $\diamond q$  should also have been available *a priori*, and it is this possibility ( $\diamond q$ ) that is what really

---

<sup>72</sup> At least this first point is supported by Warenski 2009, pp. 412-3. That said, I do not share Warenski's general 'naturalism'.

<sup>73</sup> See n. 9 on fallibilism. I am indebted to discussions with Durham's *Eidos* postgraduate group and Donnchadh O'Conaill in particular, as well as to Fraser MacBride and Tim Crane, for pointing out potential issues in this area.

defeats  $p$ , which, after all, in virtue of being *a priori* is necessary (in some sense); since if  $\diamond q$  and  $\lceil q \rightarrow \neg p \rceil$ , then  $\neg \Box p$ ; and so  $p$  cannot be *a priori*.<sup>74</sup>

The foregoing is perhaps both complex and contentious, so let me explain further by way of an example. Imagine that a talented mathematician, Albert, is working through a long and complex proof of some theorem,  $p$ . Ignoring complexities concerning actual workings out, introspection and memory,<sup>75</sup> the conclusion  $p$  is (*prima facie*) justified *a priori* and so (*prima facie*) necessary. It just so happens however, that Albert, being a meticulous mathematician, always checks his sums with a calculator and, on this particular occasion, realises that a certain calculation, essential to the proof of  $p$ , is not only wrong, but in fact implies  $\neg p$  (and so  $\neg \Box p$ ). Thus we have some further proposition  $q$ , such that  $q$  is allegedly justified *a posteriori* (Albert learns both  $q$  and the general reliability of his calculator by experience) and implies  $\neg p$ . So, the general form of this objection is as follows. Where we have some *a priori*  $p$ , it is possible that  $q$  is either a direct 'empirical' contradiction of  $p$  (i.e. equivalent to  $\neg p$ ), or an 'empirical' claim that implies  $\neg p$ ; and since we have an *a posteriori*  $q$  qua  $\neg p$  (or since  $\lceil q \rightarrow \neg p \rceil$ ), we appear to have an *a priori*  $p$  that is defeated by an *a posteriori*  $q$ .

As indicated above however, my response is that this (and *mutatis mutandis* for other examples) is not a case of genuine, *essential*, empirical defeat. This is because although the alleged empirical proposition  $q$  here happens to be known on empirical grounds, this need not be the case. That is, an entirely parallel example could have been given, whereby Albert realised, in working through the 'proof' of  $p$  (i.e. of  $\Box p$ ), not only that  $q$ , but also that  $q$  on a fully *a priori* basis (e.g. he reasoned to  $q$  without a calculator). So, this alleged case of empirical defeat is not essentially so;  $q$  (or  $\diamond q$ ) should have been available to Albert on a fully *a priori* basis. In addition, instead of  $q$  (or  $\diamond q$ ) defeating a  $p$  that is *a priori*, on the contrary, given that it is additional *a priori* reasoning that demonstrates  $\neg p$ ,  $p$  turns out not to be *a priori in the first place*. This is because, where it is the case that  $q$  (or  $\diamond q$ ), and  $\lceil q \leftrightarrow \neg p \rceil$  or  $\lceil q \rightarrow \neg p \rceil$ , we

---

<sup>74</sup> As I suggest several times, this depends on both the relationship between apriority and (the relevant) necessity, and fallible but corrigible *a priori* reasoning (approaching truth); both of which are discussed at length below.

<sup>75</sup> For which, see the following section.

have  $\neg p$  (or  $\diamond\neg p$ ) and, clearly then,  $\neg\Box p$ ; hence, as I say in the general case,  $\neg p$ , as opposed to  $p$ , would then be *a priori*. Assuming Albert is a sound reasoner and realises that his corrected mistake,  $q$ , is both fully justified and further justifies  $\neg p$ , then  $p$  itself cannot be justified *a priori* after all; it is  $\neg p$  that is so justified (and necessary). So, concerning the alleged problem for independence in terms of empirical defeasibility, that it appeared *a priori* that  $p$ , and yet that we discover *a posteriori* that  $q$  (and thereby  $\neg p$ ), does not show that  $\lceil a \text{ priori } p \rceil$  is empirically defeasible. On the contrary, it shows that  $p$  was *not a priori in the first place*. Moreover, this does not show that apriority in general is not independent of experience; it shows that *what we take to be a priori* ( $p$  in this case) is defeasible in the light of further *a priori* reasoning that  $q$  (or  $\diamond q$ ) and that  $\lceil q \leftrightarrow \neg p \rceil$  or  $\lceil q \rightarrow \neg p \rceil$ .

I realise that the above example is contentious, complicated, and that a lot more could and should be said. In particular, there is a potential problem where the defeating proposition ( $q$ ) is equivalent to, or rather *is*,  $\neg p$ . In such a case, given  $p$ 's initial, *apparent* apriority and assuming that apriority entails necessity (in some sense),  $\neg p$  would presumably not be available to the relevant subject *a priori*. That said, I very much discuss 'subjective' apriority in §4, and I provide a further example (Euclid's fifth, or parallel postulate) in §5, where I also present a lot more argument and analysis of this and related points. All I want to suggest here is that in terms of independence, it is in no way clear that the *a priori* is *essentially*, empirically defeasible and therefore not experience-independent. On the contrary I suggest, cases of apparent empirical defeat are cases that should be described as examples of potential *a priori* defeat; and, if an '*a priori*'  $p$  is *a priori* defeasible, it is hard to see how  $p$  can be genuinely *a priori* justified in the first place. So, such cases show that revision of the given proposition is in the light of additional *a priori* reasoning, as opposed to empirical evidence. Thus, *a priori* justification, even in the light of such 'empirical' revision, is still independent of experience—but, importantly (as I go on to explain), this is in virtue of the involvement of some form of necessity in *a priori* justification.

## 2.2 Experience

Whether or not independence is useful in explaining apriority, there is also the related issue of experience; what is the relevant sense of experience that might begin to demarcate the *a priori* and *a posteriori*? As with apriority in general, there is not widespread agreement on the relevant salient features. In addition, a full account of the notion would take us well into the fields of epistemology, philosophy of mind and of perception. This being the case and my thesis being predominantly metaphysical, in what follows I present only a limited account of the potentially relevant features.

Philosophers often begin by characterising the *a posteriori* in terms of pure sensory experience, noting that this would preclude such things as equilibrioception, proprioception and nociception, in addition to memory, introspection and (should such things exist) so-called parapsychological phenomena such as pre-cognition, clairvoyance and telepathy. The first three items in this list are, fairly plausibly, sufficiently close to standard cases of sensory, experiential knowledge to warrant an extension of the notion to include such cases. Experience then, if it is to be able to accurately demarcate the *a posteriori*, needs to be characterised sufficiently broadly so as to include items similar to these. Having said this, experience also needs to be characterised sufficiently narrowly so as not to include potentially *a priori* items that might appear to have some experiential basis; and this is where introspection in particular, and memory, to a lesser extent, appear to be problematic. For example, as already indicated, some philosophers claim that apriority involves ‘rational insight’ and they go on to explain this in terms of something akin to ‘rationally seeing’ the truth-value of the relevant proposition.<sup>76</sup> Now, whether or not this is plausibly coextensive with introspection, it would at least appear to be very closely related to that notion. For example, consider a simple passage of paradigmatic *a priori* reasoning to the conclusion that

$$(m) \quad [2^2 + 3^2 = 13].$$

---

<sup>76</sup> For example, BonJour 1998, pp. 102-6.

To entertain such a proposition, there would appear to be at least a minimum level of introspective experience required. If this kind of thing is included in the account of experience intended to characterise the *a posteriori*, then such an account would appear to be too broad. Of course, the problem might become more apparent when we consider longer passages of *a priori* reasoning, which might involve detailed premises requiring an element of memory. The problem being that memory and especially introspection (or something in that region) seem to be required for many cases of *a priori* reasoning, yet both, and especially memory, might be more easily characterised as *a posteriori*.

The issue of memory can perhaps be side-stepped by insisting that any extended piece of *a priori* reasoning is effectively equivalent to reasoning not involving memory; each particular step is justifiable *a priori*, so—whether or not a particular human being needs to remember each proposition—the extended piece of reasoning is also justifiable *a priori*. For now then, suffice to note that memory can perhaps be safely categorised as a largely *a posteriori* capacity and additionally as inessential for *a priori* justification; hence there is no genuine tension. This still leaves a problem with the notion of introspection.

Of course, one might insist that introspecting, for example, [I am in pain], [I am warm] and similar would be paradigmatic cases of *a posteriori* introspection, whereas introspecting *m* and the like would be *a priori*. It is quite clear however that such an insistence would require a separate notion of the *a priori* in order to demarcate *a priori* and *a posteriori* cases of introspection; strongly suggesting that a proposition's apriority and its being introspected are largely independent. Perhaps in response to this kind of worry (together with the general problem of demarcating the *a posteriori* and *a priori*), some philosophers propose causal, perceptual-causal and contingency criteria to do just such work. McGinn for example claims that *p* is justified *a posteriori* for a subject *s* iff the relevant ground for *s*'s belief that *p*, causes *s*'s coming to believe *p*; *p* is then *a priori* iff the ground (e.g. mathematics, logic) is not so causally related.<sup>77</sup> Similarly, Bonjour suggests that *p* is *a posteriori* iff it is

---

<sup>77</sup> McGinn 1999.

“perceptual in the broad sense of (a) being a causally conditioned response to particular, contingent features of the world and (b) yielding doxastic states that have as their content putative information concerning... particular, contingent features of the actual world...”<sup>78</sup>

On such a causal account (and I focus on Bonjour’s here), most of the initial list of potentially experiential items discussed above (in particular, introspection) turn out to be *a posteriori*. The *a priori* (and “mathematical intuition” for instance) is then demarcated in virtue of its concerning “eternal, abstract, and necessarily existent objects...” offering “...no information about the actual world”, given that “...its deliverances consist solely of (putatively) necessary truths”.<sup>79</sup> So, with respect to the examples I discuss above, such a position seems to suggest that my perception of my being in pain or warm is introspective and *therefore a posteriori*; my ‘rationally seeing’ that  $[2^2 + 3^2 = 13]$  is not essentially introspective and is thus *a priori*, in virtue of being non-causal knowledge, concerning necessary relations holding between abstracta.

Now, there are at least three potential problems besetting such a non-causal and especially a non-contingency account of *a priori* justification; these appear to increase in difficulty for the proponent of such a position. First, let it be noted that we are discussing a derivative account of the *a priori*, and especially independence from experience; if we need to appeal to positive aspects of the analysandum (such as rational seeing or insight), this would appear to obviate the need to discuss the derivative (or negative) aspects. Ultimately, I admit this problem, arguing in the following two chapters that a positive account of apriority as ‘rational necessity’ grounds the derivative understanding of experience-independent justification; so there is essentially no need to discuss the negative or derivative senses. As I indicate above however, I discuss independence and (especially) experience for completeness, and so as to pave the way for the later discussion of the positive account—§3 below and the following two chapters. So, if there is a sufficiently strong,

---

<sup>78</sup> Bonjour 1998, p. 8.

<sup>79</sup> *Ibid.*

positive account of the *a priori*, a discussion of derivate (or negative) aspects is somewhat otiose; but this is not a great problem for my account.

The second and slightly deeper problem is that if *a priori* justification concerns *abstract* objects and properties, then, allegedly, knowledge thereof cannot be causal; if, as is then alleged, knowledge in general *is* essentially causal, then such a non-causal criterion of *a priori* justification must fail. The deeper problem here of course, is that such a non-causal account of *a priori* justification appears to commit its proponents to something along the lines of an epistemological Platonism concerning the *a priori*.<sup>80</sup> Given the foregoing considerations, Bonjour's response to this problem ought to consist in maintaining that *a priori* justification is non-causal, thus denying that all knowledge is causal and so biting the bullet with respect to (something like) Platonism. It is not all clear however that Bonjour takes this line. Instead, he appears to argue that abstracta (such as properties) do not enter into causal chains, whereas the objects instantiating them do so. *A priori* justification then, qua concerning abstracta is non-causal, but qua concerning objects instantiating abstract properties is 'quasi-causal', in virtue of those properties "influencing minds".<sup>81</sup> Clearly, this response is potentially problematic in virtue of being somewhat hand-waving and, more importantly, as potentially contradicting the earlier claim that the *a posteriori* is causal and the *a priori* is non-causal. The point being, either *a priori* justification is causal (and there is a contradiction in Bonjour's position) or it is not (and perhaps the Platonism allegation appears to stand). Now, I am not suggesting that this objection is fatal for Bonjour's account; rather, I am suggesting that he should clearly take either fork of the above dilemma, as opposed to vacillating between the two. Taking the first for example, there are perhaps several potential ways in which *a priori* justification could be causal;<sup>82</sup> were Bonjour to adopt one of these, his

---

<sup>80</sup> This is essentially a Benacerraf-style problem (in the philosophy of mathematics) as applied to the *a priori* more generally. See Benacerraf 1973.

<sup>81</sup> Bonjour 1998, p. 160 (and pp. 159-61 for the general discussion).

<sup>82</sup> One of these might consist in an appeal to tropes; perhaps we have (*a priori*) causal knowledge of necessary relations in virtue of particular instantiations of those relations by tropes. Having said this, in accounting for apriority ultimately in terms of 'rational necessity', I would not make such an appeal. There is perhaps a sense in which the whole notion of *a priori* knowledge of *abstracta* is something of a side issue—presumably much *a posteriori* knowledge is also going to involve abstracta (the knowledge that [this piece of paper is white] for example). Presumably then, some account of the *a posteriori* knowledge of abstracta is also

account of the *a priori* would be stronger. Alternatively, of course (and this might be the preferable route), one could insist that there is *a priori* justification, that it is non-causal and thus not all knowledge is causal.<sup>83</sup> Now, I realise my discussion of this point is very brief, but there are good reasons for this. My thesis concerns modality in general, and the relationship between the *a priori* and necessity (and conceivability and possibility) in particular; I am not interested in the details of critical exegesis. Whilst I do feel there is a potential contradiction in Bonjour's account, this is not interesting *per se*; what is interesting is what Bonjour (and I) ought to say about the *a priori*. Hence my brief response to this problem is to accept the second option above (namely that *a priori* justification is non-causal) and so to reject the claim that all knowledge is causal. That said, I leave this discussion in its present scant state, since it is also related to 'positive' accounts of the *a priori* (which I discuss below) and, more importantly, the third problem, is potentially more serious.

The third and most important problem then, is that such a non-causal, and especially a non-contingency account of *a priori* justification appears to rule out *simpliciter* the possibility of there being contingent *a priori* propositions.<sup>84</sup> In response to this problem, I devote some space to a detailed discussion of the contingent *a priori* in the following chapter, where I argue that, strictly, there are no such propositions. Given that this is a more serious and complex issue however, I set aside a detailed discussion of the problem until the point indicated.

Returning very briefly to the main, present topic of introspection then, what I want to suggest is that introspection is a largely experiential mode of justification; as with experience more widely, some propositions can be justified both introspectively and on an *a priori* basis. What I mean here is that whilst it is possible to grasp mathematical propositions such as  $[2 + 3 = 5]$  and *m* via introspection, their *justification qua a priori* propositions is independent of introspection (and experience) in virtue of those propositions being (relevantly) necessary. Again as before, there is a lot more to be said here, but

---

required (and tropes might offer a reasonable solution here).

<sup>83</sup> As Lowe begins to suggest at 2002, pp. 372-3; cf. Lowe 2006, p. 180.

<sup>84</sup> Similarly a causal, contingency account of the *a posteriori* would (strictly) rule out the necessary *a posteriori*, which I discuss in ch. 5 below.

this is taken up in the discussion of the contingent *a priori*, in the following chapter.

All of this being the case, and making some reasonable assumptions regarding idealised apriority, causality and necessity, let us assume for present purposes that a course can be steered between the sufficiently broad and sufficiently narrow accounts of experience, so as to demarcate (*prima facie*) derivatively the *a priori*; if *p* is *a priori*, *p* is justified independently of experience. Introspection, in particular, is an apparent issue but assuming that there is some interplay between negative and positive accounts of the *a priori*, as outlined in the previous paragraphs (especially the points concerning the first problem above), it is an issue that is not insurmountable.

### 3 A positive account?

So far I have discussed purely negative or derivative characterisations of apriority, suggesting that there is sense in which the issue of derivative (or negative) versus positive accounts is somewhat otiose; derivative characterisations being essentially uninformative in virtue of relying on more positive aspects of the *a priori*. In what follows, I argue that although there are several viable, positive accounts, ultimately these also stand in need of further explanation; for example concerning the indubitability or ‘necessity’ of the relevant *a priori* proposition. Consequently, a positive account of apriority does not offer the deepest level of explanation; something more modal appears to be required. Therefore, this section is only the briefest of introductions to so-called positive accounts; the real work of relating apriority and modality must wait until the following two chapters.

Standard characterisations that begin to suggest a positive account include those of Descartes’s “clear and distinct perception” and the “great light in the intellect”;<sup>85</sup> Kant’s “faculty of a priori knowledge”;<sup>86</sup> together with recent

---

<sup>85</sup> Descartes 1642, *Third* and *Fourth Meditations* respectively.

<sup>86</sup> Kant 1781, B3-4. Kant of course begins with perhaps the classic statement of the negative characterisation; “knowledge altogether independent of experience” (1781, B1).

accounts such as Bonjour's "pure thought" and "rational insight";<sup>87</sup> and Bealer's "rational intuition".<sup>88</sup> The general suggestion seems to be that there is some capacity or ability akin to pure thought, intuition, intellectual grasping or seeing, and which is perhaps captured best (or maybe least contentiously) by Bonjour's notion of 'rational insight'.<sup>89</sup> This however is not the full story, since standard objections to such accounts include accusations of vagueness, obscurantism, mysteriousness and even mysticism, together with claims that the notion of rational insight is epistemically un-illuminating. Perhaps because of this, such accounts almost always appear to involve some additional explanation as to why *a priori* propositions are so available to rational insight. That is, an *a priori* proposition is not only one that is available via pure thought, or one that is grasped by rational insight, it is so justified in virtue of something additional; for example its clarity and distinctness (Descartes); its being 'unthinkably false' (Butchvarov);<sup>90</sup> or its being, or at least seeming to be, necessary (Kant, Butchvarov and Bonjour).<sup>91</sup> This being the case, perhaps we ought to see if there is an acceptable, positive account of the *a priori* that can avoid such accusations, and that can do without the need for such additional explanation.

Following Bonjour to a certain extent, perhaps there is not a lot that can be said, over and above suggestions that a positive conception of the *a priori* rests on notions such as pure thought, rational insight, direct or intuitive grasping or seeing; it is, perhaps,

"...direct and unmediated, incapable of being reduced to or explained by any rational or cognitive process of a more basic sort—since any such explanation would presuppose apprehensions of this very same kind."<sup>92</sup>

---

<sup>87</sup> Bonjour 1998, pp. 11-15 (pure thought), 16, 102, 106-10 and *passim* (rational insight).

<sup>88</sup> Bealer 1999, *passim*; cf. 1987, 1996a, 1996b. When discussing 'conceivability', Van Cleve (1983, pp. 36-7) makes similar remarks (to both Bonjour and Bealer): "First, there is such a thing as just 'seeing'—by a kind of intellectual vision—that a proposition is true...Seeing of this sort is what many philosophers call 'intuition' and what Descartes called 'clear and distinct perception'".

<sup>89</sup> Since this is perhaps less contentious (and open to empiricist criticisms of mysteriousness) than the notions of rational *intuition* and of a rational *faculty*.

<sup>90</sup> Butchvarov 1970, p. 72 and *passim*.

<sup>91</sup> Kant 1781, B3; Butchvarov 1970, §9 and *passim*; Bonjour 1998, pp. 8, 11-16, 106-10; cf. 2005, p. 99.

<sup>92</sup> Bonjour 1998, p. 16.

The problem here is that the main historical proponents of the *a priori* often assume (very arguably correctly) that *a priori* justification qua pure intellectual, rational insight is a fundamental requirement for rationality in general, and that it underlies our ability to argue and reason in particular. Perhaps because such a conception of the *a priori* is deemed to be so essential, the main proponents of the notion have had very little to say by way of a positive characterization. Having said this, perhaps apriority can be positively characterised by way of a couple of examples. The capacity for *a priori* reasoning (qua some kind of rational insight) is standardly thought to be a capacity of ‘intellectually seeing’ the ‘necessary’ truth of the proposition involved. For example, whether I reason to the conclusion  $[2 + 3 = 5]$  or the slightly more complicated  $[2^2 + 3^2 = 13]$ , assuming that I am able to reason mathematically, once I understand the relevant propositions, I just ‘see’ them to be necessarily true. Another example, provided by Bonjour (whose explanation I also follow to a certain extent), is as follows. What it is to reason *a priori* that  $[$ nothing can be red and green all over at the same time $]$ , is first to understand the relevant concepts, properties and (where relevant) objects involved (e.g. redness, greenness, colour in general perhaps, and also the concepts of something’s being an extended surface—or similar—and of exclusion/incompatibility); second it is seeing that the concepts, properties and objects are necessarily related in or by the relevant proposition; and third, *a priori* justification involves my being “able to see or grasp or apprehend in a seemingly direct and unmediated way that the claim in question cannot fail to be true”.<sup>93</sup> So according to Bonjour, it is this direct apprehension or grasping that best characterises *a priori* justification positively, and in terms of rational insight into or intellectual seeing that the relevant proposition is ‘necessarily’ true.

Now, I would argue that some of the problems indicated above (at least of mysteriousness and mysticism) can hardly be seen to apply to such a simple and constrained notion of apriority. This account does not imply a mysterious or mystical *faculty* of *a priori* insight, nor even does it appeal to a potentially

---

<sup>93</sup> *Op. cit.*, p. 100-1. Again, I finesse the “cannot fail to be” (i.e. the nature of the necessity involved) in the relevant sections and chapters below.

confusing notion of rational *intuition*. Instead it is merely committed to the claim that *a priori* reasoning that *p* entails an intellectual grasping of the relevant concepts, properties and objects involved in *p*, together with a grasping that those concepts, properties and objects are somehow necessarily related. There are however, at least two potential problems still outstanding, first that of a potential re-surfacing of the epistemic (and perhaps metaphysical) Platonism alluded to above with respect to non-causal analyses of apriority; and second, the allegations of vagueness and obscurantism—we have claimed that apriority consists in something like rational insight, but what is this? Although both problems, I claim, concern ultimately the issue of modality (and are therefore properly subjects of the following chapters), I discuss them briefly here, in turn.

First then, is the potential objection that this account appears to be committed to something like the epistemic (and now metaphysical) Platonism mentioned with respect to the causal/non-causal demarcation of *a posteriori* and *a priori* introspection, discussed in the previous section. That is, in virtue of invoking necessary relations between abstract concepts, properties and objects, the account is committed to a strange, or at least non-causal, account of knowledge and justification—perhaps in addition to a strong metaphysical realism concerning such entities. Against this objection, I would say first that strong, epistemic Platonism is not entirely, clearly applicable to the account until the relevant details are filled in; and second, if the details are so filled in, such that some metaphysical realism (not necessarily Platonism) about abstracta, concepts, properties and objects is required, then so much the better for this account; that is, some realistic metaphysics is to be preferred over alternatives. I realise however, that these remarks are contentious and stand in need of separate justification. For present purposes then, I note that the ‘relevant details’, and justification thereof, must be left for further sections and chapters; apriority and modality in the following two chapters; Platonism/realism concerning propositions, properties (etc.) and its problems, very briefly in §6 of this chapter, and to some extent in Chapters 5 to 7. In brief then, I do not see these issues as deeply problematic, but a more complete defence of this claim must wait until the relevant sections.

The second issue is that of vagueness (and obscurantism); i.e. the charge that pure thought, rational insight and so on, qua explanans of apriority, are epistemically un-illuminating (and perhaps deliberately so). Unfortunately for some of the above-mentioned proponents of positive accounts, on this issue a strong response is less forthcoming. The point being, I am in some agreement with those who claim that an unqualified notion of a faculty of *a priori* or rational intuition is arguably vague, obscure or un-illuminating; hence something more along the lines of Bonjour's 'rational insight' is the best available, putative analysans. Having said this, inasmuch as the notion of rational insight is not mystical or even particularly mysterious, first, in the absence of a more complete explanation, it is still somewhat obscure. The desideratum is a full explanation of *a priori* justification in terms of its nature or essence; and, I claim, the notion of rational insight does not do this work. Second, I think it is fairly clear from the passages above that Bonjour makes an essential further appeal to necessity; rational insight itself is tacitly admitted as not being the ultimate explanans. That is, the 'more complete explanation' renders rational insight itself as the explanandum; with necessity being the explanans. This being the case (and here I agree with Bonjour—tacitly and explicitly), there is a need to discuss the notion of necessity in conjunction with that of apriority, in the hope of providing a more complete analysis. I turn to this issue in the following two chapters, but before we get there, there are several other preliminary concerns that must be discussed. These are 'objectivity', 'subjectivity' and justifiability (the following section); defeasibility—empirical or otherwise (§5 below); and fallibility (§6).

#### 4 Justifiability, objectivity and subjectivity

Until now I have largely been talking about *a priori* justification using phrases and terms such as '*p* is *a priori*' and a proposition's 'apriority', as if to suggest that this is a straightforward matter, whereby a proposition is '*a priori*' or not *simpliciter*. I have hinted on several occasions that such talk is loose, suggesting that (i) by '*a priori p*', an '*a priori* proposition' and similar, what I mean is that *p*

is justified on an *a priori* basis; (ii) despite this, it might be better to talk about *a priori justifiable*, rather than justified, propositions; and now, more importantly, (iii) things are not so straightforwardly ‘objective’; it might be even better to talk about *a priori* justifiability-for-a-subject.<sup>94</sup> In this section I outline why this is the case, focusing on (ii) and (iii), and explaining the implications for our account of apriority and its relation to modality.

Let me begin by way of a well-known example, Goldbach’s conjecture (GC), that every even number greater than two is the sum of two primes. As already mentioned the truth of (GC) is currently (presumably) unknown and it is therefore not currently justified *a priori*. On the assumption however that (GC) is provable to non-omniscient creatures such as human beings, there is a strong sense in which it is *justifiable a priori*. Having said this, there is at least a possibility that (GC) is not so justifiable; it might be a true proposition that is unprovable in any consistent, formal system of arithmetic, or even more widely unprovable.<sup>95</sup> Making the assumption either that (GC) is so unprovable, or that there is another such unprovable proposition, I now extend the label (GC) to cover both the original proposition and such in-principle, unprovable, mathematical propositions.

This example then has several, very interesting implications for the *a priori*. First and as already indicated, on the assumption that (GC) *is* provable, it helps to disambiguate the notion of an *a priori justifiable*, rather than justified, proposition (i.e. point (ii) above). Second, it raises the question of ‘subjective apriority’ and, as I discuss below, demonstrates that what is *a priori* justifiable for one subject (e.g. an omniscient being), might not be more widely *a priori* justifiable for any other subject (i.e. point (iii) from above). Third however, on the assumption that it is *unprovable*, (GC) has implications for the negative account of apriority mentioned above (and relatedly for what I call the ‘coincidence thesis’ (CT) in the following chapter; namely that “necessity...coincide[s] with apriority and contingency with aposteriority”<sup>96</sup>). The point being that since an unprovable (GC) is justifiable neither *a posteriori*

---

<sup>94</sup> See n. 2 (and surrounding text); cf. the discussion of McGinn’s causal account in §2.2.

<sup>95</sup> See Gödel 1931. Clearly there are some large debates specific to the philosophy of mathematics that I wish to avoid here.

<sup>96</sup> BonJour 1998, p. 12.

nor *a priori*, it shows that the *a priori* cannot be defined simply in terms of non-aposteriority.

Now, I go into greater detail on (GC) and (CT) in the following chapter. This being the case, let us return to the second point above; ‘subjective apriority’ and human (or non-omniscient), as opposed to ‘omniscient *a priori* justification’, together with the further question as to how ‘subjective’ the former kind of justification is. In short, it might be felt that there is no fact of the matter; one can just make a decision, or stipulate that ‘*a priori*’ only applies to human (or more advanced, but still non-omniscient beings’) cognitive abilities. Against this however, the topic of the *a priori* (if anything is) is surely a paradigmatic issue amenable to *a priori* reflection; if our conclusions concerning the *a priori* are necessary in any sense, then it is least *prima facie* difficult to see how any such necessary conclusions could be generated by merely *a posteriori* or empirical means.<sup>97</sup> Thus, any speculation as to whether ‘*a priori*’ *does* pertain to gods, humans or ‘Martians’, in virtue of being broadly psychological, sociological or linguistic (that is, broadly scientific or empirical—and regarding use as opposed to *normative* meaning), is going to generate probabilities and generalisations at worst and stipulations at best. This being the case, let me offer some more philosophical (that is broadly *a priori*) reasons for making any such decision. On the reasonable assumptions that (i) there are no entirely compelling arguments for the existence of an omniscient being, and therefore that (ii) it is at least extremely unlikely that finite, and spatio-temporally located beings such as humans are going to be such entities, it is broadly *a priori* that there are limitations in human knowledge and justification. Thus, I claim, human or at least finite beings’ cognitive capacities are what is and *should be* at issue here; the relevant, interesting and normative ability of *a priori* reasoning pertains to contingent, finite and non-omniscient creatures. This being the case, (GC) qua current unknown mathematical theorem is at least unjustified *a priori* (to humans) and possibly more widely; (GC) qua mathematical unknowable is unjustifiable *a priori simpliciter*.

There is one final issue to discuss, which (as indicated above) follows from the previous point; is such non-omniscient *a priori* justification, in virtue of

---

<sup>97</sup> Of course, this is a little contentious, pending the discussion of the necessary *a posteriori* in ch. 5.

pertaining to finite and contingent creatures, relativised to particular subjects? That is, how 'subjective' (or not) is *a priori* justification? A complete answer to this question depends on such issues as defeasibility, corrigibility, revisability and fallibility, which I cover in the following two sections, so a more detailed response must wait until after those discussions. That said, my initial response is as follows. Whilst I began by discussing *a priori* justification as independent of experience, there is a strong sense in which an account along the lines of 's's belief that *p* is justified *a priori* iff s's belief that *p* is independent of experience' would be a better start than a more clearly 'objective' account. Having provided some further discussion of the objective/subjective divide, I now claim that an analysis in terms of 's's belief that *p*' is going to be the most realistic starting point, but not necessarily the final word; although there is a sense in which *a priori* justification is a somewhat subjective matter, there is perhaps a stronger sense in which it is a corrective, normative and more objective notion. As a very brief example, if s's belief that [parallel lines never intersect] (*p*) is '*a priori*-for-s' there is a strong possibility that it might not be so justified for other, non-omniscient thinkers. For example, if *s* were a very talented geometer, with an (apparent) proof of *p*, and if that proof were lost in antiquity, then it might be the case that *p* would not be *a priori* for any other thinker at all. If however, another thinker had a *clear* disproof of *p*, it would then be the case that *p* was *a priori*-for-s (or *prima facie a priori*) but not *secunda facie* or more widely, and certainly not *genuinely a priori*. What I am hinting at here is an account of the *a priori* whereby '*prima facie* apriority' is a largely subjective affair, whereas '*secunda facie* apriority' (which approaches 'genuine' apriority) is less so.

I realise however that the foregoing remarks are contentious and appeal to the example of Euclidean geometry. Thus without further ado, let us turn to that example, in order to understand in more depth objectivity, subjectivity, and more importantly, defeasibility, revisability and fallibilism.<sup>98</sup>

---

<sup>98</sup> I return to the issue of objectivity, subjectivity and intersubjectivity in ch. 4.

## 5 Euclid and defeasibility

Earlier in the chapter, I claim that *a priori* reasoning is not *essentially* defeasible by empirical evidence, given that it is potential, *additional a priori* reasoning that is what is really at force in correcting the original, *prima facie a priori* proposition. I now return to that argument via a detailed consideration of the case of Euclidean geometry (and the so-called ‘parallel postulate’) in order to achieve three aims.<sup>99</sup> First, I hope to strengthen my claim that the *a priori* is only essentially defeasible on *a priori* grounds (this section). Second, I aim to advance a further but related argument concerning fallibilism, which is that given what I say about defeasibility, there is essentially only one general source of fallibility concerning *a priori* reasoning; mistaken thinking—which awaits further *a priori* reasoning by way of correction, somewhat akin to ‘reflective equilibrium’—as opposed to errors deriving from empirical sources (the next section). And third, I want to begin to assess the issue of the modal status of *p* when *p* is *a priori*; an issue that I conclude in the following two chapters.

In order to understand what Euclidean geometry tells us about the *a priori*, let us begin with some of the relevant history of thought, before moving on to the geometric details of the case. Until the advent of alternative geometries in the nineteenth century, it was thought that Euclidean (or classical) geometry was an *a priori*, certain and therefore necessarily true body of mathematics; apriority entailed infallibility, which in turn meant certainty and therefore, necessity.<sup>100</sup> In addition, assuming the alignment of apriority and necessity, it seemed clear that Euclidean geometry was simply the correct description of actual space; if it is *a priori*, certain and necessary, then it is surely true of actual

---

<sup>99</sup> I am aware of BonJour’s discussion (1998, pp. 217-24). Whilst I am very sympathetic to several of BonJour’s claims concerning Euclid and the *a priori*, I am not entirely happy with his detailed treatment of the Euclidean case. I am also indebted to Torretti 2008 and Sklar 1974 in this section.

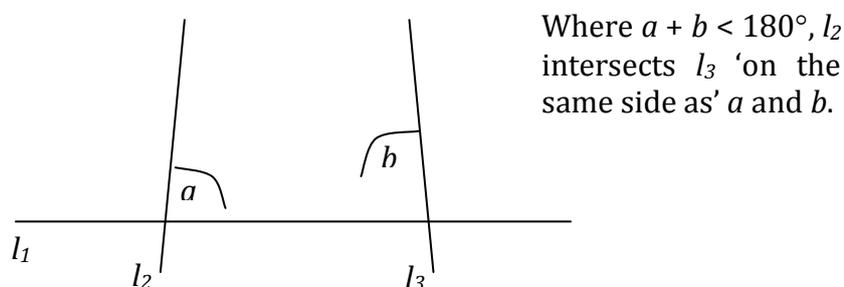
<sup>100</sup> I hint, of course, at the classical alignment of apriority and necessity here, and assume that both this and its application in the case of Euclidean geometry would be broadly accepted (assuming a liberal understanding of the relevant terms) by a diverse range of thinkers. Kant, in particular, highlighted Euclidean geometry as one of the paradigm exemplars of the synthetic *a priori*. There are, of course, several potential reasons to doubt this alignment, both post-non-Euclidean geometries and potentially post-Kripke 1980. I consider the first set of doubts here and the Kripkean issues in following chapters.

space.<sup>101</sup> If it were to turn out that there were other possible systems of geometry, Euclidean might not be necessarily true; that is, it might not be the single system describing all possible spaces. More to the point however, if it were to turn out that space is non-Euclidean, there would be something wrong with both the move from apriority to certainty and especially with the move from apriority to necessity. That Euclidean geometry describes actual space would not only be uncertain, it would be false, and so it would most certainly not be a body of necessary truths.

Euclid's *Elements*<sup>102</sup> begins with a series of definitions (of points, lines, surfaces and so on), common notions (e.g. mathematical relations and functions such as equality and addition), and five 'postulates':

"Let the following be postulated:

- (*e*<sub>1</sub>) To draw a straight line from any point to any point.
- (*e*<sub>2</sub>) To produce a finite straight line continuously in a straight line.
- (*e*<sub>3</sub>) To describe a circle with any centre and distance.
- (*e*<sub>4</sub>) That all right angles are equal to one another.
- (*e*<sub>5</sub>) That, if a straight line falling on two straight lines make the interior angles on the same side less than two right angles, the two straight lines, if produced indefinitely, meet on that side on which are the angles less than the two right angles."<sup>103</sup> (See Fig. 1.)



**Fig. 1**

<sup>101</sup> As I explain in the main body below, I make the assumption that Euclidean geometry concerns actual space.

<sup>102</sup> For which I use Heath 1956.

<sup>103</sup> *Op. cit.*, pp. 154-5, my numbering.

Most commentators agree that postulates  $e_1$ - $e_4$  are relatively straightforward and so the propositions asserted by  $e_1$ - $e_4$  are clearly *a priori*, necessarily true and therefore (actually) true. There were however, historic doubts about Euclid's fifth postulate,  $e_5$ , which appeared to some to be neither self-evidently true, certain, nor derivable from the previous four postulates. Of course, if  $e_5$  is not a genuine postulate, then Euclidean geometry as a system is incomplete; propositions after 28 are not derivable from  $e_1$ - $e_4$  alone and cannot therefore be considered to be sound in the absence of a proof of  $e_5$ . Kant of course, took Euclidean geometry to be an *a priori* and necessarily true body of mathematics—indeed he offered it as one of the paradigm exemplars of the synthetic *a priori*.<sup>104</sup> With the arrival of Lobachevskian (or hyperbolic) and Riemannian (or elliptical) geometries<sup>105</sup> shortly after *The Critique* however, it was clear that something might indeed be wrong with the claim that apriority entailed certainty and necessity. Most commentators took (and continue to take) the existence of rival systems of geometry to show that *a priori* reasoning is fallible, and on this point I am in partial agreement (subject to caveats to be outlined below). In addition however, when in the early twentieth century, Eddington's experiments (corroborating Einstein's theory of General Relativity) seemed to confirm the claim that actual space-time exhibits a Riemannian curvature,<sup>106</sup> most commentators took (and continue to take) this to show that empirical evidence can and does defeat *a priori* reasoning, and in an essential and interesting manner. The conclusion being that Euclidean geometry (and in particular, the fifth postulate) is *a priori* but neither necessary nor, indeed, actually true; hence, empirical defeat of *a priori* reasoning by *a posteriori* evidence.

In this section, I want to examine in more detail the specific claim that empirical evidence can defeat *a priori* propositions, before moving on to the related issue of fallibility in the following section. In order to do this, we will

---

<sup>104</sup> Kant 1781, B15.

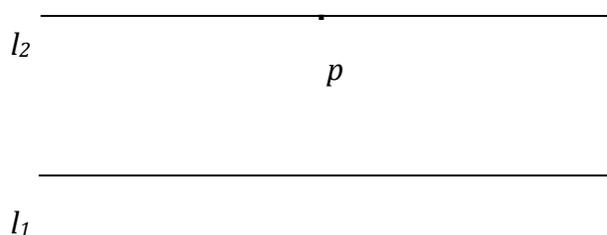
<sup>105</sup> Lobachevsky 1840; Riemann 1854.

<sup>106</sup> I refer of course to Einstein's (1916) predictions concerning Mercury's anomalous orbital precession and the later corroboration by Eddington (1919) regarding curved light observed during a solar eclipse. I say 'seemed to confirm', as this issue is slightly contentious. By 'Riemannian' here I mean a 'mixed' geometry that can change from elliptical to hyperbolic, from point to point. In what follows, I use the term to refer specifically to the elliptical geometry introduced by Riemann, unless I make it clear that the hybrid sense is intended, where I write Riemannian<sub>mixed</sub>.

need to look at the details of Euclid's fifth and the related 'parallel' postulates, together with the relevant alleged, empirical, and *a priori*, defeating claims.

As before, let  $e_5$  be Euclid's fifth postulate (illustrated by Fig. 1). At this point I could provide the two key counterpart postulates from Lobachevskian and Riemannian geometries respectively, but the latter of these is not so obviously in tension with  $e_5$  as it is with what I shall call  $p_5$  (the 'parallel postulate'):

- ( $p_5$ ) Exactly one line ( $l_2$ ) can be drawn through any point ( $p$ ), not on a given line ( $l_1$ ), such that  $l_2$  is parallel to (i.e. does not intersect)<sup>107</sup>  $l_1$ .  
(See Fig. 2.)



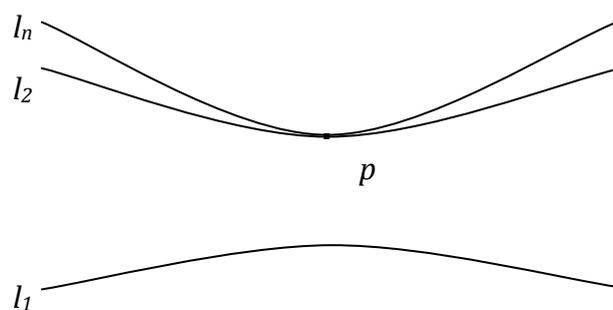
**Fig. 2**

The parallel postulate,  $p_5$ , is not equivalent to  $e_5$ , but it follows from the additional assumption that two straight lines meet only at one point, together with the conjunction of  $e_5$  and its converse.<sup>108</sup> Now  $p_5$  is more informative for my purposes, as it is in direct contradiction with both its Lobachevskian and Riemannian counterparts; which I shall call  $l_5$  and  $r_5$ , respectively:

- ( $l_5$ ) More than one line ( $l_2-l_n$ ) can be drawn through any  $p$ , not on  $l_1$ , such that  $l_2-l_n$  do not intersect  $l_1$ . (See Fig. 3.)

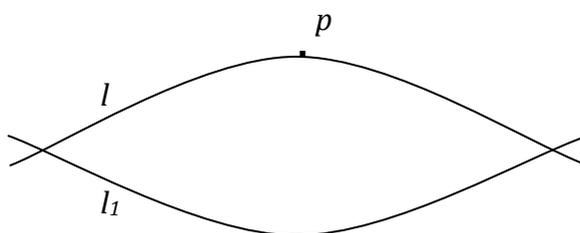
<sup>107</sup> This clarification is both supported by Euclid (Definition 23, in Heath 1956, p. 154) and necessary in order to draw out the contradictions with  $l_5$  and  $r_5$  below.

<sup>108</sup> I do not go into the details of this proof here, as it is one of the propositions of *The Elements*, and beyond the scope of this chapter. See Torretti 2008, §1 for details.



**Fig. 3**<sup>109</sup>

- ( $r_5$ ) Any line ( $l$ ) drawn through any  $p$  (not on  $l_1$ ), will intersect  $l_1$ . (See Fig. 4.)



**Fig. 4**

Just for clarity, let me make it clear that  $l_5$  is in direct contradiction with  $p_5$  and  $e_5$ , whereas  $r_5$  only clearly contradicts  $p_5$ . Looking back at  $e_5$  (and Fig. 1), this is because the Lobachevskian version of  $e_5$  would say something like,  $l_2$  to  $l_n$  do not ‘meet on the same side as’  $a$  and  $b$ ; whereas the Riemannian version of  $e_5$  would say that the lines ‘meet on the same side’, but that the relevant angles will be more than  $180^\circ$  (i.e. a denial of the antecedent of  $e_5$ , as opposed to a clear contradiction). The Lobachevskian *and* Riemannian  $l_5$  and  $r_5$  however, are

<sup>109</sup> Figs. 3 and 4 are stylized to illustrate the point.

clearly direct contradictions of  $p_5$ —hence my focus on the latter in what follows.<sup>110</sup>

As the foregoing is somewhat complex, let me recap what the alleged objection, and my response, is meant to be. I am trying to show that the *a priori* is not essentially empirically defeasible. Thus the relevant objection is not the general claim of *a priori* fallibilism that would follow from the argument that  $e_5$  and  $p_5$  were *a priori* but not necessarily true propositions (of or about all possible spaces). Instead, the relevant objection is that Euclidean geometry and  $p_5$  in particular are empirically defeasible and, indeed, were so defeated by Eddington's experiments corroborating General Relativity. Again because of the complexity of the issue at hand, let me recap the general form of the empirical defeasibility objection, and my response, from §2.1. There I claimed that if we have some *a priori*  $p$  and an alleged direct 'empirical' contradiction  $q$ , then instead of  $q$  defeating  $\lceil a \text{ priori } p \rceil$ ,  $q$  merely shows that  $p$  was not *a priori* in the first place. This is because, if we have a  $q$  that entails (or is equivalent to)  $\neg p$ , then (at least)  $\diamond q$  would be available *a priori*;<sup>111</sup> and it is this possibility ( $\diamond \neg p$ ) that is what really defeats  $p$  qua *a priori* proposition. The point being, if we appear to be able to have  $p$  *a priori* and yet we also have  $\diamond \neg p$ , then  $p$  cannot be truly said to be *a priori* (knowable or justifiable) after all.<sup>112</sup> Now this is where the Euclid example is enlightening since, I claim, it is an even clearer case where the relevant, alleged, empirical  $q$  is not fully *a posteriori*. To see this, let  $p$  be  $p_5$  (as above) and now let  $q$  be the true empirical claim (if it is true) that  $\lceil$  (actual) space-time exhibits a Riemannian<sub>mixed</sub> curvature  $\rceil$ <sup>113</sup> and note that the assumption that  $p_5$  was intended to describe actual space is essential for those who claim that it is potentially problematic in terms of being *a priori* and not necessarily true (since if  $p_5$  is necessarily true of some abstract, Euclidean space, then the original objection—that it is actually false and so not necessary—does not apply).

<sup>110</sup> As Bonjour (1998, p. 219, n. 4) points out, the situation is not even as simple as the one I describe. In elliptic or Riemannian geometry, some of the other definitions, common notions and/or postulates must be slightly altered—most notably straight lines are closed great circles on the surface of a sphere. I ignore such subtleties for present purposes.

<sup>111</sup> With the possible exception of 'unknowables' such as (for potential example) Goldbach's conjecture, which is discussed in the following chapters.

<sup>112</sup> As I have said before, this very much turns on the nature of the relevant necessity—to be discussed at length in the following chapters.

<sup>113</sup> See n. 44 for the 'mixed' subscript.

Apparently then we have  $\lceil a \text{ priori } p \rceil$ ,  $q$  and  $\lceil q \rightarrow \neg p \rceil$ , so  $\neg \Box p$  and therefore (I claim) a disproof of  $p$ 's status as *a priori*. That is, we have an alleged case of empirical defeat of an *a priori* claim. Now, as before, I claim that this has things the wrong way round for the two following reasons. First,  $q$  here (and *mutatis mutandis* elsewhere), is not fully *a posteriori*; this is quite clear from the foregoing discussion of Riemannian geometry, which establishes (at least) the *possibility* of  $q$  on a fully *a priori* basis. Second therefore, as I argued in §2.1, the defeat of  $\lceil a \text{ priori } p \rceil$  by  $q$ , does not show that the *a priori* is essentially empirically defeasible, it shows merely that  $p$  is revisable in the light of additional *a priori* reasoning. That is to say,  $p$  is *revisable on a priori grounds* and was therefore *not genuinely a priori in the first place*, despite appearing to be *a priori* to thinkers such as Euclid and his followers. In the following paragraphs, I intend to support these two claims and extend them beyond the Euclidean case, such that in general  $\lceil a \text{ priori } p \rceil$  cannot be essentially defeated by an empirical  $q$ .

My argument is that in the apparent case of empirical defeat of  $p_5$  by a  $q$  such as  $\lceil \text{actual space-time exhibits a Riemannian}_{\text{mixed}} \text{ curvature} \rceil$ , whilst we might *happen* to discover *a posteriori* that space-time is so curved, this possibility (i.e.  $\diamond q$ ) is also fully entertainable *a priori*. This much is demonstrated by the very existence of the entirely *a priori* rival systems of Lobachevsky and Riemann;  $l_5$  and  $r_5$  being fully *a priori* possible alternatives to  $p_5$ . So, I claim, in the Euclid example (and *mutatis mutandis* for other examples), it could (and perhaps should) have been open to Euclid to imagine a flat space-time and therefore, that  $\lceil a \text{ priori } \diamond p_5 \rceil$  (as opposed to  $\lceil a \text{ priori } p_5 \rceil$ ); or an elliptical space-time and therefore  $\diamond r_5$ ; or indeed, a hyperbolic space-time and therefore  $\diamond l_5$ . If these genuine possibilities were entertainable by Riemann and Lobachevsky, then had he done more *a priori* reasoning, the same possibilities would have been open to Euclid. That is, although short on empirical evidence, it could (and should) have been open to a thinker in Euclid's position to entertain, fully *a priori*, that  $\diamond p_5$ ,  $\diamond r_5$  and  $\diamond l_5$ , and that all of these, as opposed to  $p_5$ ,  $r_5$  and  $l_5$  themselves, are *a priori*.<sup>114</sup> This being the case, with hindsight, we

---

<sup>114</sup> Pending, of course, more *a priori* reasoning about the nature of space and the kind of modality involved in apriority. I.e. *could* space be flat, hyperbolic or elliptical? And in what

can say that (pending further *a priori* reflection) it is  $\diamond p_5$ ,  $\diamond r_5$  and  $\diamond l_5$  that are *a priori*, and therefore, arguably, that  $\Box[\diamond p_5 \wedge \diamond r_5 \wedge \diamond l_5]$ . In addition, given that we can only conclude that  $\Box[a\text{ priori } \diamond p_5]$ , as opposed to  $\Box[a\text{ priori } p_5]$ , we should also conclude that further empirical work is required to see which of  $p_5$ ,  $r_5$  or  $l_5$  applies to the actual world. This, I think, is both a fair result and the correct interpretation of the Euclidean case.

Now the foregoing is perhaps not the standard response to the alleged problem of Euclidean geometry. This being the case, there are several potential counter-responses and clarifications. Not all of the options I shall present are direct objections to my response, in that some would also undermine assumptions that I share with the standard interpretation of the Euclidean case (such as  $e_5/p_5$ 's application to actual space being disproved by Eddington's observations). I turn to these objections first, followed by a consideration of objections targeted specifically at my response.

First then, there is the case of 'absolute' or 'neutral' geometry. This system was put forward by Janos Bolyai,<sup>115</sup> and employs all standard definitions, common notions and postulates of standard, Euclidean geometry, with the notable exception of  $e_5$ . Within absolute geometry it is then possible to prove the first 28 propositions of *The Elements*. The point here is that whilst we might be right to conclude that  $e_5/p_5$  is false and therefore neither necessary nor, strictly, *a priori*, a limited system, excluding  $e_5$ , would be both *a priori* and necessary. Now, in terms of the detailed modal issues, I return to these in the following chapters, so here, I want only to discuss the basic potential of this objection, which, as I see it, is limited. The problem being that whilst absolute geometry might be entirely *a priori* and 'necessary', qua formally or logically necessary, systems including  $e_5$ ,  $r_5$  and  $l_5$  are still open and rival *metaphysical* possibilities, demonstrating that absolute geometry cannot be the whole, (metaphysically) necessary truth. Moreover, as above, it would still be an empirical question as to which geometry most accurately describes actual space. So, whilst keeping the *a priori* elements of Euclidean geometry *a priori*, this response imputes the wrong kind of necessity (formal or logical) and so is

---

sense of *could*?

<sup>115</sup> See Torretti 2008, §1.

largely irrelevant to arguments that Euclidean geometry might be *a priori* but not actually true and so not (metaphysically) necessary.<sup>116</sup>

Second, and very much related to the first, is the objection that instead of saying that Kant, for example, was just wrong about the *a priori* and alethic status of  $e_5/p_5$ , we should parse  $p_5$  into two separate claims along something like the following lines;  $p_5-1$ , an *a priori* and (formally, logically) necessary claim about parallels and straight lines concerning an abstract Euclidean space, where lines are *straight* and so parallels *never do intersect*; and  $p_5-2$ , an *a posteriori* and false claim that  $p_5-1$  also applies to actual space.<sup>117</sup> Now, there are similar logical/metaphysical modal issues with this objection as with the former, so I shall not repeat those points. That said, the main problem with this objection is that it misrepresents the intellectual history in a way that undermines the point of the objection. Euclid's  $e_5/p_5$  were (and are) standardly taken to be *a priori* and putatively *metaphysically* necessary;  $e_5/p_5$  appear to be neither necessary nor actually true; so at least regarding  $e_5/p_5$ , apriority and necessity appear to come apart. My response, that  $e_5/p_5$  is neither *a priori* nor necessary, seems the clearest and simplest response to the case; moreover it is in no way troubled by this line of objection. This is because even if we do assume that Euclid was not offering a potential *a priori* account of actual space, and that Kant was wrong in his analysis of the situation, the objection that there are really two propositions in  $p_5$  is not actually a problem for my thesis. The point being, I am merely using the Euclidean case to support the claim that the *a priori* is immune to empirical defeat. The alleged bifurcation of  $e_5/p_5$  into an unassailable *a priori* and necessary element and a defeated and false *a posteriori* element would not trouble this claim.

Third however, there is a potential objection that  $e_5/p_5$  might be true of actual space in a related way to that indicated above. As Bonjour notes, either actual space might consist in a flat Minkowski space-time (and so Einstein did not discover a Riemannian<sub>mixed</sub> curvature, but rather that “the effects of gravitation are far more complicated and pervasive than Newtonian physicists

---

<sup>116</sup> I realise it is difficult to separate out the specific geometric and modal issues throughout this brief consideration of objections. My strategy is to try to keep modal points to a minimum, but, where necessary, to hint at the conclusions I draw in following chapters.

<sup>117</sup> I have discussed this point with members of Durham's *Eidos* postgraduate group—Michael Turp and Tuomas Tahko in particular.

had realised”),<sup>118</sup> or space-time might also be flat and the apparent curvature of light rays around heavy objects in no way necessitates the identification of ‘straight’ lines with such light rays.<sup>119</sup> This latter point is extremely close to the main line hinted at in the previous objections. The point being that “our intuitive notion of straightness” might be such that it precludes curved light rays as being *straight*. As with the previous objection then, my response here is to agree that this is all well and possible, but that it misrepresents the Euclidean case and history of thought on the matter, and that it is not a problem for my initial response in an exactly parallel manner to the second objection. That is, I very much *assume for the sake of argument*, that Einstein and Eddington corroborate the application of a Riemannian<sub>mixed</sub> geometry to actual space-time, but then conclude that this is not a problem either (i) in terms of empirical defeasibility of *a priori* reasoning (since  $\diamond r_5$  and  $\diamond l_5$  are also available *a priori*); or (ii) as regards *a priori* reasoning leading to *false* conclusions (since, I claim,  $e_5/p_5$  is not genuinely *a priori* in the first place).

Having considered three potential problems that do not directly contradict my analysis of the Euclidean case, I now turn to two further objections that are apparently more problematic.

Fourth then, is the general claim that a proposition’s truth-value and its justification (and *a fortiori* its *a priori* justification) are independent. In particular, so the point is alleged to go,  $e_5/p_5$  might be justified *a priori*, even though false. This being the case, the problem is meant to be that *a priori* justification can be, and is, undermined or defeated by empirical evidence and in a way that suggests that *a priori* justification is thoroughly unreliable, and so does not guarantee (necessary) truth.<sup>120</sup> My response to this objection is to rehearse my arguments from above, to the effect that  $e_5/p_5$  in this situation would be *neither* true *nor*, strictly, justified *a priori*. The point being, whilst I endorse fallibilism, if further *a priori* reasoning shows that  $e_5/p_5$  is false, then strictly  $e_5/p_5$  should not be viewed as *genuinely justified a priori* in the first place. This being the case, as I claim above, it is not  $e_5/p_5$  that is *a priori* in the

---

<sup>118</sup> BonJour 1998, p. 221.

<sup>119</sup> *Op. cit.*, pp. 223-4.

<sup>120</sup> As noted in §2.1, I am indebted to conversations with Donnchadh O’Conaill, Fraser MacBride and Tim Crane here (and throughout §6).

first place, but rather (something like)  $\lceil \diamond e_5/p_5 \wedge \diamond r_5 \wedge \diamond l_5 \rceil$ . This is to say, if the objection is that *a priori* justification can lead to false propositions, and in a systematically unreliable way, my response is that whilst, historically, this might appear to be the case, with additional *a priori* reasoning (either individual or collective) it is possible to correct the original '*a priori*' intuitions to the effect that they were not genuinely *a priori* in the first place. As I hint above, the essence of this objection is to assent to the thesis of *a priori* fallibilism. As that topic occupies the following section and as I do tentatively endorse it there, I leave more detailed remarks until then. In very brief detail for now, what I would say is that *a priori* reasoning is fallible but corrigible—whilst *prima facie a priori* reasoning is highly fallible, if a particular '*a priori*' proposition is corrected with further *a priori* reasoning (as per  $e_5/p_5$ ), then we must conclude that, whilst that proposition might have appeared *a priori*-for-some-thinker-s, it is not, more widely or *secunda facie a priori*.

Fifth and finally, I turn to the claim that whilst I might successfully have argued that the two cases used in this chapter (mathematical error and  $e_5/p_5$ ) are ones where there is no genuine empirical defeat of *a priori* knowledge, I cannot generalise this to all cases of *a priori* knowledge. That is, I have not and cannot show that the *a priori* is immune to empirical defeat. Why might this be urged? Well, in the relevant sections, I put forward the general argument that where some alleged empirical defeater  $q$  is meant to show  $\neg p$  despite  $\lceil a \text{ priori } p \rceil$ , given that this  $q$  is an item of *a posteriori* knowledge concerning contingent objects and properties,  $\diamond q$  should thereby be a potential item of *a priori* knowledge; so it is not  $\lceil a \text{ posteriori } q \rceil$  that defeats  $\lceil a \text{ priori } p \rceil$ , but rather  $\lceil a \text{ priori } \diamond q \rceil$ ,  $\lceil q \rightarrow \neg p \rceil$  and similar arguments as above, to the effect that a false  $p$  cannot be necessarily true and therefore, ultimately, cannot be justified *a priori*. Now, the objection to this is as follows. Imagine some  $q$  such that  $q$  is *a posteriori* but unknown (and perhaps an 'unknowable' item of *a posteriori* knowledge), such that currently whilst we might take  $p$  to be *a priori* justified, true and thereby an item of *a priori* knowledge, there is, nonetheless, this unknown  $q$  such that were it to be discovered that  $q$ , then  $\lceil q \rightarrow \neg p \rceil$  and so on, as before.

My response to this objection is as follows. If  $q$  is a potential item of *a posteriori* knowledge, then no matter how ‘unknowable’ this knowledge might be, if it *is* potential knowledge, then  $\diamond q$  is a potential item of *a priori* knowledge.<sup>121</sup> I would then run the arguments of the previous paragraph (and relevant sections) again. The only situation where this argument might be problematic is that whereby  $q$  is literally ‘unknowable’, but here, if  $q$  is literally unknowable, then  $p$ ’s status as *a priori* is unlikely ever to be interestingly challenged anyway. Of course, this is a very difficult case to imagine, never mind to assess. What is being suggested here is something akin to a contingent but unknowable  $q$ , analogous to a necessary but unknowable proposition such as Goldbach’s conjecture. The obvious problem being, just what would be an example of such an *a posteriori* ‘unknowable’ proposition? Even if we could label such a proposition  $q$  (for the sake of argument), if  $q$  is a possible, contingent fact, then  $\diamond q$  is surely a possible item of *a priori* knowledge, even if  $q$  is ‘unknowable’. This being the case, I would run the relevant arguments again, but with the added caveat that we were now dealing with *a posteriori* and *a priori* ‘unknowable’ propositions.

## 6 Fallibility

Given what I have said so far, it is possible to allege a suggestion of what might be called ‘good, old-fashioned infallibilism’ against my position; if the *a priori* is immune to empirical defeat and if additional *a priori* reasoning is systematically and successfully corrective, then it might appear that the deliverances of such ‘corrected’ *a priori* insight are certain; the *a priori*, in the ‘genuine’ sense I seem to intend, is infallible. In this section, I intend to address this possibility and agree (albeit in a qualified manner) with those moderate rationalists<sup>122</sup> who hold that (despite its power and indispensability for rational activity) *a priori* reasoning is fallible in some sense. Given what I say in

---

<sup>121</sup> I realise that this paragraph is contentious and leaves a lot to be discussed. I discuss the issue of ‘knowability’ in more detail in §4, above, and with respect to Goldbach’s conjecture again (in still more detail) in the following chapter.

<sup>122</sup> Bealer (1999, 2002) and Bonjour 1998 for example.

previous sections however, my stance on fallibilism is going to be somewhat different from the standard position. In short, the standard position is that there are two main sources of *a priori* defeasibility and therefore two main, general sources that demonstrate *a priori* fallibility; (i) cases of *a priori* justification that are defeated by empirical evidence; and (ii) cases of general errors in *a priori* reasoning (which, I suggest, can be corrected upon further *a priori* reasoning). Given what I say concerning empirical defeasibility, as regards *a priori* fallibility I more or less accept (ii) here, but deny the essentially empirical (i); if there is no genuine source of empirical defeat and correction of *a priori* justification (i.e. no source of defeat that is essentially independent of additional *a priori* reasoning), then the only genuine source of error is mistaken reasoning (and importantly then, correction is via further such *a priori* reasoning). If however (as I might appear to suggest in the relevant sections), a ‘corrected’ *a priori* *p* is then taken to be *a priori* (i.e. ‘*secunda facie*’ *a priori*), then the objection would then go that this latter proposition is *a priori* and (necessarily) true qua *infallible*. In this brief section I need to clarify and defend my position that whilst such ‘*secunda facie*’ *a priori* reasoning might be more reliable than *prima facie* *a priori* insight, the former is, ultimately, fallible in the same sense, if not to the same degree as the latter.

Now, the main and obvious problem with any position that seems to imply infallibility of *a priori* reasoning is the sheer amount of compelling examples of ‘*a priori*’ propositions that subsequently turn out to be mistaken—or simply false.<sup>123</sup> If for example, philosophy is a largely *a priori* discipline, one only need cite the history of wide disagreements on central matters of metaphysics, epistemology and ethics, to show that (assuming that at least some of the disputants are wrong), some allegedly *a priori* claims are in fact false. Further examples are also evident from mathematics and logic, where theorems taken to be self-evident are sometimes overturned, occasionally even centuries after their initial postulation or even ‘proof’. An obvious example from this domain is the very case of Euclidean geometry I have been discussing in detail above. A final set of examples comes from the standard errors in reasoning, calculation and proof that should be apparent to anyone who has ever attempted such

---

<sup>123</sup> I am indebted to Bonjour (1998, pp. 110-5) here, at least for some of the initial examples and problems. My response to those problems differs from Bonjour’s.

processes. All of which being the case, despite denying genuine cases of essentially empirical defeasibility and corrigibility, I would like to avoid the conclusion that general *a priori* reasoning is infallible.

My response to this problem is to admit *a priori* fallibility; we can and do have *a priori* disagreements in philosophy; we can and do make mistakes in reasoning, proof and even simple calculation, and on many occasions. So, does my suggestion that there is a distinction between *prima facie* and ‘*secunda facie*’ *a priori* reasoning (i.e. where an initial *a priori*  $p$  has been corrected by further *a priori* reasoning that  $\neg p$ ) imply that whilst the former is fallible, the latter is infallible? Well, here I would reply that whilst the former is fallible, so too is the latter (if only to a lesser degree), for the two following reasons. First, it is fallible in the sense that ‘further *a priori* reasoning’ is an ongoing and essentially incomplete process.<sup>124</sup> So for example, returning to the Euclidean case, where I claim that  $p_5$  is, on further *a priori* reasoning, not genuinely *a priori* in the first place, this is not to say that the modified conclusions— $\lceil a \text{ priori } \diamond p_5 \rceil$  or  $\lceil a \text{ priori } (\diamond p_5 \wedge \diamond r_5 \wedge \diamond l_5) \rceil$ —are genuinely *a priori* and thereby somehow necessary or certain; rather, it is to say that they are less *prima facie a priori*, and therefore less fallible, but still, essentially fallible. Hence my describing this as ‘*secunda facie*’ *a priori* justification, as opposed to ‘genuine’ apriority.

Second, relatedly and perhaps more clearly, there is simply no obvious criterion that would demarcate *in advance* and in any useful way, cases of *prima facie* and genuine *a priori* justification.<sup>125</sup> So, whilst I do claim that cases of apparent *a priori* justification, such as  $e_5/p_5$ , turn out not to be cases of genuine *a priori* justification given further *a priori* reflection, this in no way guarantees that the modified, ‘*secunda facie*’ *a priori* conclusions,  $\lceil \diamond p_5 \rceil$  or  $\lceil (\diamond p_5 \wedge \diamond r_5 \wedge \diamond l_5) \rceil$ , are genuine in the sense of being infallible, certain and *certainly* necessary. What this also seems to show, I think, is that we must make the distinction between *prima* and *secunda facie a priori* justification on an ongoing, case by case and, essentially, incomplete basis. Thus, there is a strong sense in which even very clearly and rigorously reasoned *a priori* propositions are,

---

<sup>124</sup> Although something would have to be seriously amiss for propositions such as  $\lceil 2 + 2 = 4 \rceil$  to be *a priori* and false. Some *a priori* propositions clearly approach certainty?

<sup>125</sup> But see the previous footnote.

ultimately, '*prima facie*', at least in the sense of being fallible in the same way (if not to the same degree) as clearly *prima facie a priori* propositions.

In essence then, what I am saying is that *a priori* justification is generally fallible. *Prima facie 'a priori'* propositions such as  $p_5$  are very fallible and so only very fallibly do they 'guarantee' (necessary) truth. On further rational reflection, such propositions are corrigible; i.e. qua *secunda facie a priori* propositions. That said, even such *secunda facie* propositions are fallible—even if 'collective apriority' approaches (necessary) truth; *a priori* reasoning then, is a fallible guide to necessary truth; only if  $p$  is 'genuinely' *a priori* can  $p$  be said to be certainly (necessarily) true. In a sense then, my position is perhaps close to that of falsificationism with respect to empirical knowledge;  $\lceil x \text{ knows } (a \text{ priori}) \text{ that } p \rceil$  does not guarantee that (necessarily)  $p$  but if further evidence (or *a priori* reasoning) shows that  $\neg p$ , then, quite clearly, the original (*a priori*) knowledge claim ought to be revised. That is, inasmuch as knowledge entails truth, apriority entails necessity; if  $p$  is a genuine item of (*a priori*) knowledge, then  $p$  must be (necessarily) true.

In this chapter, I have suggested that the *a priori* is independent of experience, possibly in virtue of involving a constrained kind of necessity, underlying both 'positive' and 'negative' accounts. Additionally, in virtue of being independent of experience, *a priori* justification is not essentially defeasible by empirical evidence; rather, it is revisable in the light of further, *secunda facie a priori* reasoning. Having tentatively admitted *a priori* fallibility, whilst endorsing such a strong link between apriority and necessity, I now note that what is really of interest in *a priori* claims (indeed, what I claim underpins the positive accounts discussed above), is the kind of modality involved therein; although *a priori* reasoning is fallible, *genuine* apriority entails necessity—but in what sense of 'necessity'? I.e. what is the nature of the modality involved in such *a priori* reasoning? In particular, does  $\lceil a \text{ priori } p \rceil$  entail that  $p$  is a *metaphysically* necessary truth? Clearly then, the time has come to consider the relationship between the *a priori* and modality in more detail.

## Chapter 3

# Coincidence, Goldbach and the Contingent *A Priori*

### 1 Introduction

The previous chapter suggests that the *a priori* is deeply tied to some (however constrained) form of necessity. Accordingly, in this and the next chapter, I begin the detailed discussion of this relationship. In §2 I introduce and discuss the ‘coincidence thesis’ (CT)—that apriority and necessity are coextensive (and *mutatis mutandis* aposteriority and contingency)—using Goldbach’s conjecture (GC) both to disambiguate the thesis and to begin to suggest that (in its strongest variants at least) it is false. In particular, I suggest that (CT) is better represented as a set of four sub-theses, (CT1) to (CT4), and, since Goldbach’s conjecture only refutes one of these, (CT3), it is insufficient to demonstrate the falsity of (CT) in general. In §3 I discuss the contingent *a priori*, denying all of the Kripkean examples but giving greater consideration to a range of additional, putative ‘indexical’ cases, such as ‘I exist’. If any of these provide genuine examples of the contingent *a priori*, then (CT1) and (CT4)—in addition to (CT3)—would be refuted. That said, I conclude that such cases are not genuine and, indeed, that there is no substantive class of such propositions. Having said this, I also claim that a correct understanding of the contingent *a priori* requires

two significant contributions to our understanding of epistemology and metaphysics. First, it strongly suggests that there is a clear bifurcation between the metaphysical and epistemic domains. Second, in terms of metaphysics, I argue that the contingent *a priori* requires a clear understanding of the relationship between sentences, propositions and circumstances (or arrangements of objects and attributes<sup>126</sup>), as well as the related issue of *de re* and *de dicto* modality. That is, we need to understand what proposition a particular sentence asserts and (where possible) the natures of the relevant objects and attributes.

## 2 The coincidence thesis and Goldbach's conjecture

As Kripke's work in general suggests, although the *a priori-a posteriori* and necessary-contingent distinctions are closely related, this does not show that apriority and necessity, and aposteriority and contingency are coextensive. Indeed, as Kripke so often points out (*pace* much of the history of epistemology and metaphysics), it would be surprising if they were coextensive, since they are not of the same kind. The *a priori-a posteriori* distinction is, as standardly understood, an epistemic one concerning a proposition's justification or knowability; the necessary-contingent distinction is a metaphysical one concerning either a proposition's modal truth (*de dicto* modality) or concerning the relevant objects' and attributes' modal status (*de re* modality).

BonJour makes similar claims to some of those I make in the previous chapter. Specifically he claims that *a priori* justification is independent of experience, by way of the latter's being essentially perceptual in character and so being causally related to particular, contingent features of the world, thereby yielding contingent propositions; whereas apriority (as evinced by mathematical insight, for example), is "concerned with eternal, abstract and necessarily existent objects" and its "deliverances consist solely of (putatively) necessary truths".<sup>127</sup> Since I claim that *a priori* justification is independent of

---

<sup>126</sup> I.e. properties and relations.

<sup>127</sup> BonJour 1998, p. 8; cf. pp. 11-2, 100-10 and p. 224, BonJour 2005, pp. 99-100.

experience in virtue of concerning ‘necessary’ propositions, it would appear that both Bonjour and I might be committed to something that Bonjour calls the ‘coincidence thesis’ (CT),<sup>128</sup> namely that

(LB-CT1) “necessity...coincide[s] with apriority” and

(LB-CT2) “contingency [coincides] with aposteriority”.<sup>129</sup>

In fact, in what follows I claim that Bonjour’s presentation of (CT) is somewhat equivocal; some clarification is therefore required. It is at least fairly clear that (LB-CT1) and (LB-CT2) represent something like two biconditionals. Hence for purposes of disambiguation let us re-present (CT) as the following sub-theses:

(CT1) apriority entails necessity;<sup>130</sup>

(CT2) aposteriority entails contingency;

(CT3) necessity entails apriority; and

(CT4) contingency entails aposteriority.

There is a significant problem confronting anyone who endorses (CT) qua the conjunction of all four sub-theses; its probable falsehood in the light of compelling, potential counter-examples, such as the contingent *a priori*, the necessary *a posteriori* and ‘unknowable’ but necessary (or contingent) propositions. If ‘genuine’ (or perhaps *secunda facie*) *a priori* justification is of (or aimed at) metaphysically necessary truths and if *a posteriori* justification only concerns contingent features of the actual world, this would certainly seem to imply (CT), at least qua both (CT1) and (CT2), but arguably it would appear to suggest (CT3) and (CT4) as well. The problem with this implication is as follows. As regards (CT3), some mathematical propositions are very plausibly necessarily true (or false) but not justified *a priori*, in virtue of being

---

<sup>128</sup> Bonjour 1998, p. 12.

<sup>129</sup> *Ibid.*, my numbering.

<sup>130</sup> The (CT) theses should be understood as schematic and idealised. That is, I appear to ignore some of the qualifications the previous chapter, such as subjectivity and fallibilism. What I am getting at is that apriority should be understood as success-driven, truth-oriented and normative; as we happen to do *a priori* reasoning it is a fallible but corrigible process (approaching—necessary?—truth) but what we are aiming for is (necessary?) truth. Each thesis should then be understood (in the relevant idealised way) as shorthand for (*mutatis mutandis*) (CTn) If *p* is justifiable (e.g.) *a priori* then *p* must be (e.g.) necessarily true.

unknown or even unknowable—e.g. (GC), as introduced in the previous chapter.

In the remainder of this section, I use (GC) (and a potential, generic ‘contingent equivalent’, which I label (CGC) for ease of reference)<sup>131</sup> for two main purposes. First, (GC) shows that (CT) must be disambiguated into the four sub-theses mentioned above. The point being, the *a priori* and *a posteriori* are not interdefinable and so do not exhaust the possibilities with respect to our epistemic access to propositions; some propositions are neither *a priori* nor *a posteriori*, so apriority cannot be the same as non-aposteriority (and *vice versa*). Metaphysical necessity and contingency, on the other hand, are so interdefinable and exhaustive, strongly suggesting that the rational and modal domains are not fully coextensive. So (CT) cannot be the biconditional suggested by Bonjour’s two theses above; it is (at best) some combination of the four sub-theses.

Second, I use (GC) and its ‘contingent equivalent’ (CGC)—i.e. a potentially unknowable, (generic) contingent proposition—to provide counter-examples to (CT3) and (CT4) *simpliciter*. In doing this, (GC) and (CGC) show that (CT) (qua conjunctive thesis) is untenable as stated; (CT) is, at best, either the conjunction or disjunction of (CT1) and (CT2), or it is some combination of suitably attenuated versions of all four theses.

In the remainder of this chapter, I focus on (CT1) and the contingent *a priori*, eventually endorsing a suitably modified version of the thesis. I discuss (CT2) and the necessary *a posteriori* in ch. 5, where I endorse a similarly modified thesis, suggesting that it is also possible to hold very much attenuated versions of (CT3) and (CT4). Ultimately then, although I deny (CT) as it stands, I suggest that on suitably modified versions of the four sub-theses, some reasonably strong alignment of rationality and modality is tenable. In so discussing the modal issues of apriority, I also begin to suggest a final, positive account (towards the end of this chapter and throughout the following); apriority should be understood in terms of a more constrained ‘epistemic’ modality, which I call ‘rational necessity’.

---

<sup>131</sup> I do not state (CGC) as a separate conjecture as I am using the label generically, to indicate a putative, contingent thesis that is unknown or unknowable in a manner isomorphic to that of (GC) qua necessary but unknowable thesis.

At this point, it would be wise to recall the working understanding of modality, outlined in Chapter 1, §1. Together with the foregoing paragraphs, such an account suggests that the domains of epistemic justification and metaphysical modality are distinct. As I claim above, Goldbach's conjecture strongly supports this suggestion. This being the case, let us look at (GC) with respect to the *a priori-a posteriori* distinction. As with the coextensiveness of the *a priori-a posteriori* and necessary-contingent distinctions, there is a historical tendency to assume that the *a priori* and *a posteriori* are interdefinable; apriority is non-aposteriority and aposteriority is non-apriority. The problem with this alleged, two-way equivalence is that unknowable mathematical propositions present clear counter-examples. The point being, (GC) is currently an unproved (and potentially unprovable) mathematical theorem, in virtue of which it is a proposition whose truth-value is currently unknown (and is possibly unknowable *simpliciter*). Assuming (GC) to be an unprovable theorem, it is not justified, and not justifiable, either *a priori* or *a posteriori*. Thus (GC) appears strongly to suggest that the *a priori* and *a posteriori* do not exhaust the possibilities with respect to our epistemic access to propositions; some are *a priori*, some are *a posteriori* and some (for example, the unknowable mathematical propositions) are neither *a priori* nor *a posteriori*. Therefore, (GC) is a strong counter-example to the thesis that the *a priori* and *a posteriori* are interdefinable and especially to the claim that aposteriority is non-apriority.

In demonstrating that the *a priori* and *a posteriori* are not exhaustive with respect to our epistemic access to propositions, (GC) thereby helps to show that Bonjour's,

(LB-CT1) necessity coincides with apriority

and

(LB-CT2) contingency coincides with aposteriority,

are not the complete story with respect to (CT). The problem with this statement of (CT) is that if ‘coincides with’ is read along the lines of a biconditional, and if contingency is the same property as non-necessity and aposteriority is the same as non-apriority, then the two would appear to be equivalent. That Bonjour accepts the latter equivalence (aposteriority and non-apriority) seems to be suggested by his discussion of Goldbach’s conjecture as a counter-example to the following, third thesis:

(LB-CT3) “necessity entails apriority (or, *equivalently*, that aposteriority entails contingency)”.<sup>132</sup>

Here, Bonjour is appealing to contraposition, and so assuming that contingency is non-necessity—with which I agree—and that aposteriority is non-apriority, which is what I dispute. The problem with this alleged equivalence of aposteriority and non-apriority is, as already suggested, that unknowable necessary propositions—Goldbach’s conjecture being a prime, putative example—present clear counter-examples; they are neither *a priori* nor, clearly, *a posteriori*. Qua counter-example to the alleged equivalence of aposteriority and non-apriority then, (GC) shows that (LB-CT1) and (LB-CT2) are not, after all, equivalent, and that the two sections of (LB-CT3) do not constitute an example of contraposition. The point being, Goldbach’s conjecture is only a counter-example to (LB-CT1) and the *non-parenthesised* section of (LB-CT3); not (LB-CT2) and the *parenthesised* section of (LB-CT3). All of which suggests (i) a confusion in Bonjour’s presentation of (CT), which would be best remedied by (ii) a strict conditional, as opposed to a biconditional, reading and so (iii) the interpretation I present here, together with the additional clauses (CT3) and (CT4).

As well as saying that (CT) is best parsed into four separate conditionals, I also claim that (GC) and its (generic) ‘contingent equivalent’ (CGC) provide clear counter-examples to two of those conditionals, (CT3) and (CT4) respectively. I have already discussed (GC) in some depth, so let me now focus on potential examples of (CGC) and its impact. Of course, an immediate,

---

<sup>132</sup> Bonjour 1998, p. 13, my italics.

potential objection to such a proposition would be to doubt its existence; that (CGC) seems possible however is, I think, undeniable. Perhaps the best way to demonstrate this is via some examples. One such example might consist in some statement of theoretical physics that is constitutionally or physically unknowable. For example,  $\lceil$ the initial conditions of the universe are  $X$  at  $t_0$  $\rceil$  ( $p$ ), where  $X$  is described by some complex mathematico-physical statement, unknowable in virtue of the fact that  $t_0$  is an unknowable 'limit'; because, perhaps, of the properties of the speed of light and our ensuing inability to observe such starting conditions. Presumably such a proposition would be a contingent truth; thus it would be an apparent counter-example to (CT4) and (in tandem with (GC)) to (CT) qua strong, conjunctive thesis. Having said this, one potential objection here concerns the contingencies involved; one might object that our inability to observe conditions at  $t_0$  is a mere, nomic or physical contingency; given this contingency, there is nothing stopping us, in principle, from knowing  $p$  here. Perhaps then (CGC) is less clear than its necessary counterpart, (GC). Either way, I think it is fairly clear that there are certainly strong, *potential* counter-examples to (CT4); and that, given the existence of (GC), (CT) is untenable as the conjunction of the sub-theses (CT1) to (CT4). This being the case, I now consider (CT1) and the contingent *a priori*, since this, if genuine, would be a clear counter-example to (CT1) *and* (CT4), leaving (CT2) as the only potentially tenable sub-thesis.

### 3 The contingent *a priori*<sup>133</sup>

So far I have suggested that the contingent *a priori* is deeply related to the issue of the kind of modality involved in the *a priori*. I also claim that a correct understanding of the contingent *a priori* requires a clear understanding of what proposition(s) a putative contingent *a priori* sentence expresses and of what circumstances (i.e. objects and attributes) such propositions are about or involve. Third and finally, in claiming that *a priori* deliverances are somehow

---

<sup>133</sup> See Kripke 1980, pp 14-5, 54-7, 75-9 and *passim*; and Plantinga 1974, pp. 7-9. For discussion see Fitch 2004, pp. 116-7.

‘necessary’, I am apparently more obviously committed to (CT1)—that apriority entails necessity—than I am to any of the other sub-theses.<sup>134</sup> This being the case, we need to understand whether and how (CT1) might be true; we need to consider the contingent *a priori* qua putative counter-example to that thesis. In what follows, I begin with this final issue, but in discussing the contingent *a priori* qua putative counter-example, I also begin the discussion of the kind of modality involved in apriority and the relationship between sentences, propositions and circumstances—i.e. the first and second issues, above.

I discuss Kripke’s putative ‘metre stick’ example (S) briefly in the introductory chapter (and with respect to two-dimensionalist analyses of apriority). Clearly a re-presentation of this material would be somewhat otiose, nevertheless the force of the objections to Kripke’s examples of the contingent *a priori* very much relies on understanding his distinction between ‘providing a synonymous meaning’ and ‘fixing a reference’. Accordingly, in the following I set aside the discussion of two-dimensionalism, provide a more detailed analysis of the synonymy/reference-fixing distinction and discuss further the problems besetting the standard metre stick example (in §3.1); I then go into much greater depth with respect to some potentially clearer, indexical examples of the contingent *a priori* (§§3.2 and 3.3); before discussing the relationship between apriority, introspection and causation<sup>135</sup> (§3.4).

BonJour also considers Kripke’s metre stick example:<sup>136</sup>

(S) ‘stick *s* is one metre long at *t*<sub>0</sub>’.

BonJour’s analysis is initially that (S) is putatively *a priori*, since the speaker uses the length of *s* at *t*<sub>0</sub> to *fix the reference* of the metre, yet contingent, given that the length of *s* at *t*<sub>0</sub> does not *provide the meaning* of the relevant property—*s* could have been a different length at *t*<sub>0</sub>. He goes on to claim however that the

---

<sup>134</sup> As before, I remind the reader of my position on fallibilism. That is, I would seem more unequivocally committed to (CT1), in that *a priori* reasoning appears to result in necessary propositions (at least on an ‘as yet undefeated’ basis).

<sup>135</sup> Cf. ch. 2, §2.2.

<sup>136</sup> BonJour 1998, pp. 12-3. BonJour’s example sentence is not quite the same as the one I use. I use the Kripkean ‘stick *s* is one meter long’ together with the temporal addendum (that Kripke goes on to suggest), so as to avoid problems of immediate changes in length.

example is not, ultimately, convincing, arguing briefly that there is a difference between how we fix the reference of a term and how the relevant reference-fixing “general concept[s]” apply to the relevant objects.<sup>137</sup> Thus, (S) analyses out into two separate propositions; one (*a priori* and necessary) relating a property and its reference-fixing, initial dubbing, and another (*a posteriori* and contingent) applying that property to *s*. Now, Bonjour’s discussion of the case is a little brief (it only occupies one paragraph of the *Defense*), so in what follows I supplement this line of argument with further discussion of the synonymy/reference-fixing distinction and with additional considerations concerning the (im)possibility of *a priori* knowledge of *de re* contingencies. Taken together, all of this suggests that the Kripkean examples of the contingent *a priori* are mistaken—and that the category as a whole is empty.

### 3.1 Problems with the metre stick

In *The Nature of Necessity*, Alvin Plantinga doubts that the metre stick example is a genuine case of the contingent *a priori*, arguing that it would be entirely possible, for example, never to have seen stick *s* and not to know its actual length yet still to use “‘one meter’ [*sic*] as a rigid designator of the length, whatever it is, [of *s* at *t<sub>0</sub>]*”.<sup>138</sup> According to this kind of objection, the utterer of a sentence expressing the proposition [stick *s* is one metre long at *t<sub>0</sub>*] (*p*) would then know *a priori* that the sentence expressed some true proposition *p* (having introduced the relevant reference-fixing term), but he would not know *a priori* the nature of the proposition he was expressing; i.e. that the metre stick (the object) had the property of being one metre long. According to this line of objection *p* is indeed contingent but it is *not known a priori*. What the utterer does know *a priori* in the metre stick example is that “if I use ‘one meter’ as a rigid designator of the length of *s*...then [*p*] expresses a truth in my language.

---

<sup>137</sup> Bonjour 1998, p. 13.

<sup>138</sup> Plantinga 1974, pp. 8-9, n. 1. Cf. Donnellan 1977. For further discussion see Casullo 1977, 2003, pp. 205-9; Evans 1979; Kitcher 1980a, 1980b; Salmon 1987; Fitch 2004, pp. 118-21; and Hughes 2004, pp. 95-107.

This conditional, however, is necessary rather than contingent”.<sup>139</sup> Together with Donnellan’s (1977) similar line of argument, this forms the basis of the remainder of my discussion of the Kripkean cases. My version of the objection is slightly more complex (in order to deal with some replies), but the basic point is that alleged contingent *a priori* sentences analyse out into (at least) two propositions; one ‘wide’ (arguably *de re*), contingent but *a posteriori*; and another ‘narrow’ (and less clearly *de dicto*<sup>140</sup>) *a priori* but necessary. In short, I claim that you cannot have ‘wide’ (*de re*) *a priori* knowledge of contingent arrangements of objects and attributes.

By way of fleshing out such claims, imagine that I introduce the name ‘Bob’ to fix the reference of the uppermost pebble on Mount Everest at  $t_0$  (via satisfaction of the relevant description). The supporter of the contingent *a priori* would then claim that having so introduced the ‘descriptive name’, ‘Bob’, I know the contingent,

(1) Bob is the uppermost pebble on Mount Everest at  $t_0$

on an *a priori* basis; i.e. (1) expresses a contingent *a priori* proposition. Against this however, I think it is not at all clear what proposition (1) is (or expresses); indeed, it is not clear whether (1) expresses a single proposition and whether any such proposition is contingent and *a priori*. In order to see this, let us turn to the alleged apriority of (1) first. Considered in isolation, it is not at all clear that (1) is straightforwardly *a priori*, since, first, apriority is (at least *prima facie*) an epistemic notion involving a subject, believer or knower; so there is a strong sense in which *something* asserted by (1) must be *a priori* for the introducer of ‘Bob’ (i.e. me in this case). Second however, it is still not clear that (1) is *a priori* (to me), at least not considered in isolation from the foregoing phrase ‘having introduced the name ‘Bob’”; so, what we must consider as being the correct candidate, putative contingent *a priori* claim is not (1) but something more like:

---

<sup>139</sup> Plantinga 1974, p. 9, n. 1.

<sup>140</sup> Since the *de re/de dicto* distinction is complicated, as I explain below. I explain the ‘wide’ and ‘narrow’ terminology throughout the following.

(1.1) if  $x$  introduces the name 'Bob' via the description 'the uppermost pebble (...)', then Bob is the uppermost pebble on Everest at  $t_0$ .

So is (1.1) a contingent *a priori* (for- $x$ ) sentence or proposition? Well even here, it is not clear that there is a single candidate proposition. First, there is what might be called a 'wide' proposition (which removes some of the subjective elements I have just mentioned); and second there is a 'narrow' proposition, which retains those elements. First then, considered widely, if we strip out as much of the 'subjective', 'epistemic' requirements of (1.1) as is possible, I think it then asserts something like the following proposition:

(1.2) [if 'Bob' is introduced as 'the uppermost pebble (...)', then, if there is such an object, **Bob** (the object) is **the uppermost pebble (...)** (the attribute)].<sup>141</sup>

The problem with (1.2) however, is that it exposes a tacit move (in the original (1) proposition) from names and predicates to objects and attributes; that is, from semantics to metaphysics. The point being, in order to *know* the contingent, *de re* circumstance that **Bob** is **the uppermost pebble**, it is necessary to have the relevant kind of direct and unavoidable, *de re*, causal and so empirical (i.e. *a posteriori*) interaction with the relevant, contingent circumstance(s). Now I say 'the relevant kind' here in order to deal with liberalist/chauvinist allegations. For example, one might urge that I am suggesting that direct and fully causal (e.g. quintessential) interaction is required, thereby ruling out much testimonial knowledge and justification. In response to this, I would say that knowledge by testimony is fine but the kind of 'knowledge-by-stipulation' that is occurring in the Bob case is not tantamount to testimony. I fail to see how I can genuinely know an alleged circumstance by semantic trickery.

Against this, it might be urged that the phrase 'if there is such an object' (i.e. the conditional aspect of (1.2)), allows for just such a move; no genuine *de re*

---

<sup>141</sup> I embolden to stress the distinction between names and **objects**, on the one hand, and predicates (or descriptions) and **attributes**, on the other.

knowledge is required by the consequent, since its truth is conditional on the (*de dicto?*) antecedent. In response to this, however, the consequent certainly seems to involve a substantive, *de re* claim, so either it is such or some serious explanation to the contrary is required.<sup>142</sup> In addition, such an appeal to conditionality (and to the claim that (1.2) is effectively, fully *de dicto*) still does not secure the move from premises about names and predicates to conclusions about objects and attributes; the point being one cannot generate substantive, *a priori* knowledge (conditional or otherwise) ‘at the stroke of a pen’ so to speak. That is, simply insisting that ‘Bob’ is a name does not succeed in generating **Bob** (and *mutatis mutandis* for ‘the uppermost pebble’); so, insisting that ‘Bob’ is ‘the uppermost pebble’ does not entail that **Bob** is **the uppermost pebble**, conditionally or otherwise. All of this being the case, I claim that the wide (or *de re*) (1.2) is indeed contingent but also that it is substantively object-involving and, more importantly, it is existential and contingent property-ascribing, and as such requires direct and unavoidable, *de re* and so ultimately, *a posteriori* knowledge. So, if (1.2) is knowable, it is contingent but knowable only on an *a posteriori* basis.

As indicated above however, there is a further, narrow proposition that (1.1) might be taken to express:

(1.3) [‘if ‘Bob’ is introduced as ‘the uppermost pebble (...)’, then ‘Bob’ is ‘the uppermost pebble (...)’].

Now, whilst this proposition might be *a priori*, I urge that it is also fairly clearly necessarily true, in that it is a narrow (perhaps *de dicto*)<sup>143</sup> claim, making a general and conditional necessity claim about concerning names and predicates. As before however, any move to try to shore up the contingency or apriority of the proposition will either involve an unavoidable causal connection with the relevant objects and attributes (**Bob’s** being **the**

---

<sup>142</sup> Moreover, if (1.2) is viewed as ‘fully *de dicto*’ I would argue that it collapses into (1.3); i.e. it would then be a necessary *a priori* proposition.

<sup>143</sup> As per some of the foregoing notes and main text, I am less confident that this is a fully *de dicto* proposition, hence the couching, ‘perhaps’. The point being (1.3) might still involve objects and attributes, albeit tendentially.

**uppermost pebble**), so requiring *de re a posteriori* knowledge, or it will further involve viewing the antecedent a general, necessary but *a priori* conditional.

What I am suggesting here is that (*à la* Salmon 1981) the move from semantics to metaphysics has the order of explanation the wrong way round. Alleged contingent *a priori* sentences either assert contingent but *a posteriori*, wide (or *de re*) propositions, or they assert narrow (or mixed *de dicto/de re*), *a priori* but necessary propositions. The key point being, one cannot generate substantive metaphysical conclusions from (trivial) logico-semantic premises; one cannot demonstrate the existence of the contingent *a priori* from the insistence that there can be descriptively introduced names whose references are fixed by descriptive predicates.

Now Robin Jeshion objects to arguments such as those above, arguing that it is possible to have ‘acquaintanceless *de re* belief’.<sup>144</sup> The basic idea being that where the speaker introduces a ‘Fregean’ or descriptive name (arguably like my ‘Bob’ above),<sup>145</sup> it is possible to have substantive, *de re* and *a priori* knowledge *whether or not* the relevant object exists. That is, it is possible to have such *de re* knowledge of fictional,<sup>146</sup> and non-existent,<sup>147</sup> objects. In brief detail, my reply to this argument is as follows. Whilst it is possible to assert a *de re* proposition via an apparently contingent *a priori* sentence, if that proposition is contingent, I would urge that given the existential and contingent property-ascribing nature of such a proposition, knowledge thereof must involve the relevant kind of unavoidable causal interaction with the relevant objects and attributes; that is, it must be *a posteriori*. If on the other hand, the sentence expresses an *a priori* proposition, then (as I further argue below) the relevant circumstance must be necessary. Thus, the issue is not the possibility of *de re, a priori* knowledge (which I accept—for necessary propositions and circumstances), but the possibility of *de re, a priori* knowledge of *contingent* circumstances (which I reject). In short, the very point of the contingent *a priori* is to challenge the traditional alignment of apriority with necessity by suggesting genuine *a priori* knowledge of contingent circumstances. If it is necessary to *assume* the

---

<sup>144</sup> As urged by Jeshion 2001 and 2002.

<sup>145</sup> And as we shall see below, like Evans’s ‘Julius’.

<sup>146</sup> Jeshion 2002, p. 57.

<sup>147</sup> *Op. cit.*, p. 58.

possibility of *de re, a priori* knowledge of contingent circumstances, in order to generate the contingent *a priori*, this would be a short and circuitous piece of reasoning.

As should be evident, much of the foregoing turns on a distinction similar to the one suggested by Plantinga's objection to Kripke's contingent *a priori*. As I rely on this in what follows, let me now say a little more. My distinction is slightly more complex than Plantinga's; it is that of a sentence expressing a proposition that is about, or asserts, a circumstance (i.e. an arrangement of objects and attributes). The point being, where a subject  $x$  'knows *a priori*' that a sentence expresses a proposition  $p$ , given that apriority is a broadly epistemic notion, I argue that it operates at the (circumstantial and) propositional level(s) first and only derivatively at the sentential. Similarly, in terms of modality, I argue that this operates at the circumstantial and propositional levels, and then only derivatively at the sentential. In addition, as I argue above, if  $p$  asserts a contingent circumstance, some unavoidably causal, and so *a posteriori* justification is required in order to know the relevant circumstance—and so the nature of the proposition. What I mean here, is that for an individual to know precisely which proposition he is expressing (via some natural language sentence), he must know the nature of the relevant circumstance; he must know what arrangement of objects and attributes the proposition asserts. Thus, whilst a given  $p$  might assert a contingent circumstance such as a (possibly non-existent) stick's being a certain length, or a (possibly non-existent) pebble's being so high, in failing to *grasp* the relevant circumstance (and in failing to rule out the possibility of empty—or multiple—reference, for example), the subject fails to have *de re, a priori* knowledge of  $p$ ; he fails to assert a contingent *a priori* proposition. More to the point, as I have argued already (and shall reinforce, below) and going beyond Plantinga, where such a contingent proposition is expressed, the subject's failure to have *de re, a priori* knowledge is due to the fact that genuine *a priori* knowledge and justification must concern necessary propositions and circumstances; there cannot be contingent *a priori* propositions.<sup>148</sup>

---

<sup>148</sup> Yablo 2007 provides an additional putative example: 'Hot things feel different from cold things'. As in the main body, I would argue that this effectively boils down to (at least) two propositions, one quite clearly existentially committing and so contingent but *a posteriori*,

Despite so arguing against the main lines of the Kripkean contingent *a priori*, I note that there is perhaps a disanalogy between the metre stick and the ‘Bob’ case I introduce above.<sup>149</sup> Kripke provides several other putative examples of the contingent *a priori* in *Naming and Necessity*, most of which are closer to the ‘Bob’ than the metre stick case. If the disanalogy is sufficiently strong, perhaps a defender of Kripke’s contingent *a priori* could use this to respond to the foregoing; if on the other hand the disanalogy is illusory (or if there is a deeper objection to Kripke’s examples, as I suggest), it would appear that all of Kripke’s putative examples of the contingent *a priori* fail. Some of Kripke’s other examples are, briefly, as follows (in each example, the name should be understood to be introduced by the reference-fixing description—page references in this section are to Kripke 1980):

- (2) “Aristotle is the greatest man who studied with Plato” (p. 57);
- (3) ‘Jack the Ripper’ is “the man, whoever he is, who committed all these murders” (p. 79);<sup>150</sup>
- (4) Neptune is the planet causing certain disturbances in the orbit of Uranus (p. 79, n. 33).

Kripke continues to provide several additional, putative cases of the contingent *a priori*, all of which appear to involve a rigidly designating name ‘baptismally’ introduced via a non-rigid, reference-fixing description.<sup>151</sup> The idea being that the reference-fixing description picks out a property that determines the referent of the name in virtue of the named object’s contingently having the relevant property; where *a* rigidly designates “the unique object that actually has property *F*”, then a speaker who “did introduce a designator in that way...would be in a position to say ‘I know [*a priori*] that *Fa*’,

---

[ $\exists x \exists y (Hx \wedge Cy \wedge x \text{ feels different from } y)$ ], and another *a priori* but necessary, [ $\forall x (Hx \rightarrow \neg Cx)$ ] (where ‘*C*’ means ‘ $\neg H$ ’). The ‘feels different from’ relation is dropped in the latter proposition, since, ‘widely’ considered, this is what Yablo’s target sentence asserts.

<sup>149</sup> Geirsson 1991 also notes that there are two types of example, but his conclusion (that the metre stick case works) differs from mine (that it does not). I am not convinced that Geirsson’s example, [the length stick *s* appears to have at *t* is one metre], is contingent and *a priori*, since the given proposition requires the introspective notion of an appearance; and, I claim, this kind of introspective claim is fully empirical.

<sup>150</sup> Cf. Evans’s (1979) ‘Julius’ example, which I discuss below.

<sup>151</sup> Kripke 1980, pp. 80-91.

but nevertheless ‘*Fa*’ would express a contingent truth” (p. 14);  $\lceil Fa \rceil$  would be a contingent *a priori* proposition. One problem with all of this however is that, as is so often the case in *Naming and Necessity* (perhaps due to its nature as a verbally delivered set of lectures), the presentation is a little loose. Thus, in order to see if there is a significant disanalogy between the metre stick and ‘Bob’-type cases, this will have to be tightened up a little. So, charitably understood, what is Kripke saying here with respect to synonymy, reference-fixing and the contingent *a priori*?

On the Kripkean account, *a* here is a rigidly designating name that serves to denote a unique object in all world-states in which that object exists.<sup>152</sup> In the discussion noted above (1980, p. 14) Kripke mentions the ‘property’ *F* and suggests that a baptiser *b*, introducing *a* via the property *F* knows  $\lceil Fa \rceil$  *a priori*. One problem with this is that Kripke does not make a clear distinction between the linguistic or logical *F* (the predicate) and its ontological relatum (the property—which I shall indicate via an emboldened ***F***). So, to re-state the Kripkean position, where *a* designates the unique ***a***, and where *a* is introduced baptismally via a reference-fixing, descriptive predicate *F*, this is achieved in virtue of *F*’s non-rigidly designating the property ***F*** and ***Fa*** being a contingent circumstance. In this way, *b* allegedly knows *a priori*  $\lceil Fa \rceil$ , but  $\lceil Fa \rceil$  asserts the contingent circumstance ***Fa***. This, I think, is the essence of Kripke’s position; *F* fixes the reference of *a* in virtue of ***a***’s being the object that is or has ***F***; thus *F* is a reference-fixing description, not a synonymous meaning of *a*, and  $\lceil Fa \rceil$  is therefore (allegedly) a contingent *a priori* proposition.

So, is the metre stick example analogous to the other cases—does it fit the reconstructed Kripkean pattern more or less than the ‘Bob’-type examples? Well, assuming the names in (2) to (4) are introduced baptismally (which is perhaps most likely with (3) and (4)), it is fairly clear that they fit the pattern in terms of reference-fixing. For example (with respect to (4)), let *F* be ‘the planet causing certain disturbances in the orbit of Uranus’ and let *a* be ‘Neptune’. It is at least plausible that Leverrier might have so introduced the name using such a description to refer to the relevant property ***F*** and, ultimately, the having of

---

<sup>152</sup> Skating over difficulties of contingent existence addressed elsewhere.

that property by ***a*** (i.e. **Neptune**<sup>153</sup>). As described however, the metre stick case is fairly clearly disanalogous. The problem being that *a* (or, to follow Kripke's usage, *s* here) appears to be a rigid designator for the metre stick *s*, whereas the relevant *F* appears initially to be parsed best as something like 'one metre long at *t*<sub>0</sub>'; and, instead of *F* being used to fix the reference of *s*, Kripke (as initially reconstructed) appears to insist throughout the relevant section (pp. 54-7) that *F* is being used to fix the reference of something else, which he refers to as "the 'meter'" (*sic*), "the length of *s* at *t*<sub>0</sub>" (p. 55) and "one meter" (p. 56). So, unlike the 'Bob'-type cases, the metre stick example does not appear to be one where a non-rigid predicate *F* is being used to introduce something that is clearly, concretely objectual. The point being, all that *F* seems to introduce in this case is the property ***F*** (i.e. **being one metre long** or **being a certain length**), which then picks out, at most, an abstract object **the metre** or **a certain length**, as opposed to the concrete object *s*. Is this disanalogy enough to give the supporter of Kripke a distinction between the oft-cited metre stick case and the other name/object-based examples?

There are two possible interpretations here; neither attractive to the supporter of the Kripkean contingent *a priori*. First, one could be charitable to Kripke (in terms of textual consistency) and argue that the examples are parallel; i.e. the descriptive predicate *F* is used to fix the reference of *s* in virtue of non-rigidly designating the property ***F***, which is uniquely and actually, but contingently, satisfied by *s* (**the metre stick**). The problem with this interpretation however is that given my remarks on 'Bob' and (2) to (4) above, there would appear to be (at least) two propositions expressed by the metre stick sentence, one contingent but only *a posteriori*,  $\lceil Fs \rceil$ , and another *a priori*, but necessary,  $\lceil \text{If 's' is introduced via the predicate 'one metre long at } t_0', \text{ then 's' is 'one metre long at } t_0' \rceil$ .<sup>154</sup> Quite clearly the second is necessary and *a priori* but with respect to the first,  $\lceil Fs \rceil$ , a little explanation is in order. In line with the 'Bob' case, whilst it is reasonably clear that the relevant circumstance, ***Fs*** would be contingent, it is not at all clear that  $\lceil Fs \rceil$  could be justified *a priori*. The

<sup>153</sup> I embolden 'Neptune' here for emphasis, realising that the English distinction between 'Neptune' and Neptune might do the same work (cf. n. 18). This is, of course, very much related to Quine's 'use/mention' distinction; Quine 1962, pp. 23-6.

<sup>154</sup> I realise that there are complications in this case. I discuss these with respect to the 'Bob' example above.

problem is that even where the baptiser  $b$  so fixes the reference of  $s$  via  $F$ , importantly and crucially,  $b$  would not know *a priori* that  $\lceil Fs \rceil$  asserts the circumstance  $Fs$ , since he would not know (at all) what  $\lceil Fs \rceil$  says about the world. That is, he would not *grasp*  $\lceil Fs \rceil$ , in virtue of the fact that in order to know that the very object  $s$  had the very property  $F$  contingently,  $b$  would require unavoidably causal, *a posteriori* and *de re* knowledge of  $F$  and  $s$ . So for example (and as above), having never climbed Everest, I have no idea what object the predicate ‘the uppermost pebble on Mount Everest’ picks out and similarly,  $b$  would not know who or what ‘Aristotle’, ‘Jack the Ripper’ or ‘Neptune’ designate. So, I would not know what  $\lceil \text{Bob is the uppermost pebble on Everest} \rceil$  expresses and  $b$  would not know what  $\lceil \text{Aristotle is the greatest man who studied with Plato} \rceil$  or  $\lceil s \text{ is one metre long at } t_0 \rceil$  express. In short, no Kripkean baptiser would *know a priori* any of the putative examples of the contingent *a priori*, provided in *Naming and Necessity*. The relevant propositions all assert contingent circumstances, but the nature of those arrangements of objects and attributes would not be *a priori* knowable.

The second interpretation is perhaps even less attractive to the Kripkean, in that (it suggests a textual inconsistency and) it further highlights *why* the foregoing objection applies; thus further ruling out *any* putative, Kripkean examples of the contingent *a priori*. This deeper problem is as follows. There is a disanalogy between the metre stick and ‘Bob’ cases, as long as we insist on two things, (i) that the metre stick case does consist in the (legitimate) introduction of an abstract object, **the metre** (or  $m$ , rigidly designated by  $m$ ); and (ii) that the relevant reference fixing  $F$  is something akin to ‘the length of  $m$  at  $t_0$ ’. Unlike with the ‘Bob’ cases above, if we make this insistence, the proposition  $\lceil Fm \rceil$  would be known *a priori* by the relevant baptiser,  $b$ , in that  $b$  would know what  $\lceil Fm \rceil$  asserted; namely that  $Fm$ , or **the metre ( $m$ )** has **the length of  $m$  at  $t_0$**  (whatever that length is). In the Plantingean line of objection to the original version of the example, something like the latter, parenthesised clause is used to suggest a lack of knowledge of the circumstances, such that  $b$  does not know (*a priori* or not) what  $\lceil Fs \rceil$  actually asserts. In the revised example, it is perhaps more plausible that  $b$  knows what  $\lceil Fm \rceil$  asserts, since in including a reference to  $m$  itself in the descriptive  $F$ , it is highly arguable that

[*Fm*] is justifiable *a priori*, in that it asserts the arrangement of objects and attributes that is *m*'s **having the length of *m* at *t*<sub>0</sub>**. The problem with this response however, is also reasonably clear; the circumstance ***Fm*** is necessary, rather than contingent. This, I claim, is clear due to (a) the deeply self-referential nature of the relevant, asserted proposition and, more importantly, (b) the fact that *m* is an abstract object, which, presumably, in virtue of being such (a length), has the property of being a certain length essentially. So, whilst the relevant English sentence and [*Fm*] would indeed be *a priori*, the circumstance asserted, ***Fm***, would also be metaphysically necessary. The point being, unlike as with contingent circumstances, I would argue that it is possible to have non-causal, *a priori de re* knowledge of necessary circumstances involving abstracta. This being the case, I would conclude that the clear, name/object-involving, Kripkean cases of the contingent *a priori* fail and that even if a disanalogy can be worked into the metre stick example, this too fails due to its concerning an essential property of an abstractum; it is an *a priori* proposition asserting a metaphysically necessary circumstance.

### 3.2 'I exist': a better example?

So far I have suggested that there are good reasons to doubt that Kripke's main examples of the contingent *a priori* are genuine. In the remainder of this chapter, I discuss one more set of putative examples; those involving indexicals—specifically, I discuss putative cases such as 'I exist'<sup>155</sup> and, relatedly, those involving 'actually'. I argue that such cases fail to provide genuine examples and, ultimately, that the class of contingent *a priori* propositions is empty. Clearly, a case by case dismissal of the contingent *a priori* would be of little philosophical value; my argument against this class of examples then, is designed to extend to other potential cases, demonstrating *why* the phenomenon is illusory. In short, although apriority (qua rational

---

<sup>155</sup> Despite my discussion of Plantinga as a critic of Kripke, he also presents several similar examples (1974, p. 8; specifically discussing the 'I exist' case), reaching a tentative, positive conclusion that the contingent *a priori* is at least a possible phenomenon. Kaplan (1989, p. 538) discusses a similar example; 'I am here now'.

necessity) is not simply coextensive with metaphysical necessity (because of the failure of (CT3) in the light of Goldbach's conjecture), the former is 'grounded in' the latter—it is necessity in virtue of rationality.<sup>156</sup> That is, a proposition is knowable on an *a priori* basis, strictly, only if it asserts a metaphysically necessary circumstance; and if *p* is (knowable) and metaphysically contingent, it must be possible to doubt the negation of that proposition—hence the proposition must be *a posteriori* as well. This being the case, there can be no contingent *a priori* propositions; genuine apriority entails necessity.

First then, let us see why

(*e*) 'I exist'

is not a genuine example of the contingent *a priori*. As with the 'Bob' and 'metre stick' cases, my claim is that the apparent contingent *a priori* status of the sentence turns on the nature of the proposition(s) or circumstance(s) it asserts. Let us look at the metaphysical, modal aspects first. In terms of contingency, *e* certainly appears to be a saying something contingent about the world. Assuming that the sentence (or thought) has not been uttered by a necessary being, it certainly seems to express a contingent proposition. The problem with *e* however is that if it is read as (expressing a tenseless proposition) asserting a metaphysically contingent circumstance, it is also fairly clearly *a posteriori*. The point being, the negation (⌈I do not exist⌋) is clearly (and rightly) conceivable, since I might not have existed, so *e* cannot be said to be *a priori*. In addition, without tying the proposition to the time of its utterance or grasping, its asserting a contingent circumstance means that more detailed, empirical information is required to ascertain when it is true and when it is false; its being tenseless, I need to know particular pieces of information at particular times in order to know whether or not it is true. So, simply read as the tenseless *e*, 'I exist' cannot be an example of the contingent *a priori*.

There are however two further relevant, candidate, contingent *a priori* propositions that the English 'I exist' can be taken to express:

---

<sup>156</sup> I explain this claim both below and in the following chapter.

( $e'$ )  $\lceil$ I exist at the time of uttering 'I exist' $\rceil$ ;

( $e''$ )  $\lceil$ I exist at  $t_0$  $\rceil$ .<sup>157</sup>

Fairly clearly, the first is so deeply self-referential as to suffer the same objections as I raised against the *Fm* case in the previous section; logically  $e'$  could be parsed as the following conditional:

( $e^*$ )  $Uae_{t_0} \rightarrow \exists x (Uxe_{t_0} \wedge x = a)$ ,<sup>158</sup>

which, given the impossibility of a true antecedent and a false consequent is, presumably, conceptually and metaphysically necessary, as well as being *a priori*. This leaves  $e''$  as the only relevant, potential, contingent *a priori* proposition. Thus, we need to understand whether  $e''$  can steer a course between the contingent and *a posteriori*  $e$ , and the *a priori* but necessary  $e'$ .<sup>159</sup>

In terms of contingency, initially,  $e''$  appears to be much closer to  $e$  than to  $e'$ . That it is (at least) initially unclear how best to parse  $e''$  would seem to suggest that it is not a mere conceptual necessity or trivial, logical truth; assuming that the ' $t_0$ ' does not tie the truth of  $e''$  to the time of utterance of the proposition (which is the essential point), that  $\lceil$ I exist at  $t_0$  $\rceil$  can be seen possibly not to have obtained appears to suggest that it is not (or does not assert) a metaphysical necessity. In addition, and perhaps more to the point, my not being a contingent object certainly seems to suggest that  $e''$  is contingent; surely I might not have existed at  $t_0$ . If however the negation of  $e''$  is metaphysically possible (and  $e''$  is contingent), I would argue as before, that since it is rightly possible to doubt  $\neg e''$ , it cannot be an *a priori* proposition.

<sup>157</sup> As before the temporal qualifier is added so as to suggest that the English 'I exist' expresses a proposition asserting the current (at the time of utterance) existence of the utterer.

<sup>158</sup> Not a lot is meant to hang on the precise details of this formalisation—it is merely intended to illustrate the rational and *conceptual* necessity of the implication;  $p$  and  $\neg q$  looks impossible here. I realise however that there are deep issues in the region, such as time, tense and indexicality. I return to the last of these below.

<sup>159</sup> Fitch (2004, p. 118-9), seems to avoid categorising propositions such as  $\lceil$ I exist at  $t_0$  $\rceil$  as *a priori*, appearing to claim that Kripke's account of the *a priori* implies that knowledge of contingent circumstances cannot be *a priori* (despite then going on to claim that there can be trivial examples involving indexicals)—Hughes (2004, p. 97), at least raises a similar question. I would not want to attribute this claim to Kripke (even though I agree that contingent, existential claims require *a posteriori* justification), since it would appear to rule out substantive examples of the contingent *a priori tout court*, which would be a peculiar thing for Kripke to do in a book one of whose central contentions is the existence of the same.

Having said this, there are (at least two) deeper questions, concerning indexicality and introspection, that follow from this suggestion. First, perhaps some essential indexicality might render  $e''$  as *a priori* whilst retaining its contingency. Second, even if  $e''$  is contingent, perhaps its availability to introspection renders it knowable on an *a priori* basis. I now discuss these two issues in turn; indexicality and contingency in §3.3; introspection and apriority in §3.4. In what follows, very much as before I claim that  $e''$  is either so deeply self-referential that it is metaphysically necessary but *a priori*, or  $e''$  is closer to the original  $e$  and so it is indeed contingent but *a posteriori*. In addition to arguing this, during the discussion of the latter issue I begin to suggest a further set of claims; that apriority essentially involves a kind of necessity, ‘rational necessity’, and that this further depends on, or is grounded in metaphysical necessity, such that there can be *no* contingent *a priori* propositions.

### 3.3 Apriority, indexicality and Evansian, ‘superficial’ contingency

In ‘Reference and Contingency’ Gareth Evans attempts to defuse the puzzle of the contingent *a priori* by arguing that whilst the alleged cases do involve *a priori* knowledge, the relevant propositions are only ‘superficially’ contingent.<sup>160</sup> That is, there are many cases of the contingent *a priori* but they are fairly trivial; they are neither “interesting” nor “scary”.<sup>161</sup> Evans’s initial example (which I discuss as (7) below) involves the ‘Fregean name’, ‘Julius’, but he also argues that the contingent *a priori* need not involve such names, since cases can be constructed using an indexical ‘actually’ operator—together with a broadly two-dimensional semantics. Perhaps the defender of the contingent *a priori* can use such an argument to support the claim that  $e''$  is similarly *a priori* but contingent, even if only superficially so.

In my discussion of Evans, I begin with the ‘Fregean name’ variants but suggest these are either akin to the Bob-style cases already discussed (and so not contingent and *a priori*) or they are effectively equivalent to Evans’s

---

<sup>160</sup> Evans 1979; cf. Kaplan 1989.

<sup>161</sup> The “interesting” and “scary” are from Donnellan 1977, p. 23; cf. Fitch 2004, p. 120-1.

‘actually’-involving cases (again not contingent *a priori*) in that the latter only really involve ‘actually’ as a rhetorical device. I then go on to discuss the ‘actually’ cases qua potential examples of the ‘superficially’ contingent *a priori*, concluding that these are entirely artificial and ultimately (since they do not involve contingent *circumstances*) insubstantive examples of ‘contingent *a priori*’ propositions. Thus Evans’s arguments cannot be used to support either the claim that *e*” is an indexical example or the wider conclusion that there are genuine, contingent *a priori* propositions.

Consider the following examples from Kripke, Donnellan and Evans:

- (3\*) ‘Jack the Ripper’ is the man, whoever he is, who *actually* committed all these murders”;<sup>162</sup>
- (5) “Provided the murderer exists, let ‘Vladimir is the murderer’ express a contingent truth”;<sup>163</sup>
- (6) “Let us use ‘Julius’ to refer to whoever invented the zip”; and
- (7) “If anyone uniquely invented the zip, Julius invented the zip”.<sup>164</sup>

In the discussion of the failure of the Kripkean examples (2) to (4) above, I hint that Donnellan’s (and so Evans’s) examples are very similar to Kripke’s original (3), thereby suggesting that all suffer a similar fate; either they express contingent but *a posteriori* propositions (in virtue of the contingent or existential-introducing claims requiring unavoidably causal, *de re*, and so *a posteriori* justification) or they express propositions knowable on an *a priori* basis but which assert necessary, general conditionals. This is perhaps a little unfair, since (5) and (7) might be a lot closer to (3\*) than to the original (3); the point turning on the possibility of ‘Fregean names’ and, perhaps more importantly, on the indexicality of ‘actually’—if an utterer *u* stipulates that *a* is the *actual F*, Evans’s thought is that *u* thereby knows (*a priori*) that *Fa*, but *Fa* is also thereby ‘superficially’ contingent, even if ‘deeply’ necessary.<sup>165</sup> For what it is worth, I think (3\*) is ultimately more or less equivalent to (3) (and both are

---

<sup>162</sup> Amended slightly from the Kripkean (3) above.

<sup>163</sup> Donnellan 1977, p. 20 (my numbering).

<sup>164</sup> Evans 1979, pp. 163 and 171 (my numbering).

<sup>165</sup> See also the discussion in Davies and Humberstone 1980.

similar to (5) and (7)), since the ‘actually’ is tacitly assumed in the original and, importantly, functions purely as a rhetorical device; it is not a genuine, modal predicate, in virtue of not designating a genuine, modal property.<sup>166</sup> Thus I claim the Evansian examples are not genuine cases of the contingent *a priori*, since they either reduce to the former examples (of *a posteriori*, *de re* contingencies) or they consist of purely trivial, semantic examples of *a priori* knowledge based on an artificial ‘actually’ operator, which are thereby very ‘superficially’ contingent; going beyond Evans, this is because no genuine circumstance has been asserted, given the illegitimacy of the ‘actually’ operator. Interestingly concerning (5) (and so by extension, (7)), Donnellan claims that a detective, stipulating ‘Vladimir’ as the name of the murderer, does not thereby come to “*know [a priori or not] the existence of any state of affairs*”.<sup>167</sup> Hence my use of the Kripkean (3)/(3\*); after ‘naming’ ‘Jack the Ripper’, I do not think Scotland Yard’s work was complete.

Evans’s discussion of (7) in ‘Reference and Contingency’ very much turns on the distinction (discussed above and expressed again in my terms here) between knowing that a sentence expresses some proposition and knowing what circumstance that proposition asserts. His main point *contra* Donnellan is that the latter assumes that for an utterer *u* to understand what circumstance the relevant sentence asserts (via the relevant proposition—(7) in this case), *u* must have causal or *a posteriori* knowledge of the referent of the relevant name used therein. That is according to Evans, Donnellan rules out any possibility of knowledge of the meaning of (7) and the like, in the absence of *a posteriori* knowledge of (6) and the like. In short, according to Evans, Donnellan rules out the possibility of *de re* knowledge of contingent circumstances based purely on ‘Fregean’ or descriptive names. Now, Evans makes three points in response to this kind of line, “one *ad hominem*, one substantive, and one promissory”.<sup>168</sup> I now deal with only the second and third of these, since I view the first as a much weaker point. I deal with the second in slightly less detail, since it consists of an appeal to the kind of two-dimensionalism (and to the general

---

<sup>166</sup> The point being, if ‘actually’ is a genuine predicate, this requires a substantive metaphysics of possible worlds. I argue against this below (‘actually’ as a genuine predicate) and (both issues) in more detail, in the final chapter.

<sup>167</sup> Donnellan 1977, p. 20 (my emphasis).

<sup>168</sup> Evans 1979, p. 172.

semantics to metaphysics form of argument) dismissed in Chapter 1 (and generally, throughout). I cover the third in more detail as this is where the issue of indexicality and the ‘actually’ operator is most relevant.

Beginning with the second point, Evans spends some time arguing<sup>169</sup> that the kind of line Donnellan offers relies on the claim that knowledge of (6) is insufficient for knowing precisely what (7) asserts; i.e. that substantive, knowledge of *de re* contingencies cannot be generated by mere linguistic stipulation. As I suggest above, since Evans’s argument is effectively an appeal to (a more or less) two-dimensional semantics (and is thus an attempt to derive epistemic and metaphysical conclusions from such semantics), and since I have already spent some time on the positive argument, on two-dimensionalism and especially on the move from semantics to (epistemology and) metaphysics, I only provide a brief discussion of all of this presently.

In very brief detail, Evans’s argument is as follows. Sentences are associated with functions from possible worlds to truth values, which Evans calls *propositions* (being closer but by no means identical to what I call ‘wide’ propositions), but such functions are not the same as a sentence’s “*content*, or *what it says*”<sup>170</sup> (which is closer to what I call a ‘narrow’ proposition above, qua thing most obviously, ‘narrowly’ believed when a sentence is uttered or thought). Accordingly, when two sentences with the same content are believed, “what is believed by one who understands...the one sentence...is the same as what is believed by one who understands...the other sentence”.<sup>171</sup> Now, assuming that ‘Julius’ in (7) has been introduced by an utterer *u*’s use of (6), Evans alleges that ‘Julius is F’ and ‘The inventor of the zip is F’ are “associated with different propositions...” but “are epistemically equivalent [for *u*]”;<sup>172</sup> i.e. (7) is *a priori* (for *u*).

Against all of this (but briefly, for reasons already indicated) and beginning with the metaphysics, contingency is surely, primarily a property of circumstances (that is arrangements of objects and/or attributes) and only derivatively of sentences. Moving to the semantics (with more metaphysics and

---

<sup>169</sup> *Op. cit.*, pp. 174-82.

<sup>170</sup> *Op. cit.*, p. 176.

<sup>171</sup> *Ibid.*

<sup>172</sup> *Op. cit.*, p. 178.

some epistemology), if I stipulate that 'Flob' is  $x$  (if it exists) and 'glumph' is the contingent property,  $F$  (ditto), then I certainly know *a priori* that 'Flob is glumph' asserts a contingent proposition *if it does assert a proposition*, given that the sentence involves Fregean names; however, I do not know the nature of this proposition nor even that I have asserted the genuine circumstance of **Flob's glumphing**.<sup>173</sup> Returning to the metaphysics (and drawing the correct epistemic and semantic conclusions), since  $x$  and  $F$  might very well not exist, I cannot be said to have *de re a priori* knowledge of the relevant, contingent proposition or 'circumstance', since to know such a circumstance, I would require unavoidably direct, causal and so *a posteriori* knowledge that  $x$  (exists and)  $F$ s; so I have not asserted a contingent *a priori* proposition. Finally with respect to the second point and doing the meta-metaphysics, moving from (two-dimensional) semantics to (epistemology and) metaphysics is the wrong order of explanation; one cannot generate apriority and contingency from mere linguistic stipulation. In summary then, inasmuch as (7) involves a simple (i.e. independent of 'actually'-based considerations), Fregean name, it is of precisely the same kind as the previous Kripkean, putative cases; not examples of the contingent *a priori*.<sup>174</sup>

Turning to the third, 'promissory' point, Evans claims that even if such arguments against the Fregean name variants are successful, there are cases of the contingent *a priori* that do not involve such names; those involving an indexical, 'actually' operator. Drawing on his points concerning propositions and content, Evans claims that there can be wholly uninformative but contingent sentences:

---

<sup>173</sup> The difference with genuine names would be based on the latter being causally or baptismally introduced with relevant causal-historical chains preserving reference and so, *de re* knowledge. Where a chain shifts or breaks, *à la* Evans 1973, reference would shift or break, preserving (or not) *de re* knowledge. Descriptive names, of course, are never so causal, never so preserving (or rather generating) of knowledge of contingencies.

<sup>174</sup> There is a potential objection here that such an account of Fregean names makes knowledge (involving names) very hard to come by. In the case of standard names I deny this claim, as per the previous note. That said, there are many examples of ordinary mistaken identity that are witness to a lack of knowledge in such cases. For example, in a scenario where the object allegedly designated by the name Gödel does not exist, someone uttering 'Gödel proved the incompleteness of logic' ( $g$ ) might know that  $g$  expressed something like,  $\lceil \exists!x (x = g \wedge Px) \rceil$  ( $g$ ), but he would not know what (*de re* proposition or what circumstance)  $g$  asserts. In this kind of scenario, I think we would well say that many claims about Gödel, which we previously took to be known to be true, were in fact false and not so known.

“A sentence with this character could express *a priori* knowledge without engendering paradox, since, in knowing it to be true, *one thereby knows nothing about the world.*”<sup>175</sup>

Evans’s initial, formal, putative example is as follows:

$$(8) \quad \forall x (Fx \rightarrow \mathcal{A}(Fx)),$$

where  $\mathcal{A}$  is an ‘actually’ operator; for example, “If anything is red it is actually red”.<sup>176</sup> According to Evans, such sentences are clearly contingent since “there are worlds with respect to which it is not true, *viz* any world in which there are things which are not red in the actual world which are red”.<sup>177</sup> In addition, sentences like (8) are allegedly knowable on an *a priori* basis and so are “perfectly innocent, if rather uninteresting, examples of the contingent *a priori*”.<sup>178</sup> Going beyond Evans somewhat, with respect to *e*’ the allegation would be that this is a similarly indexical but clearly an *interesting* case of the contingent *a priori*—if I exist, then know *a priori* that I actually exist, even though my existence is contingent. In response to all of this I have three points to make, which, taken together, suggest that alleged examples of the contingent *a priori* based on  $\mathcal{A}$  cannot provide the suggested rescue for *e*’’s similar status.

My first point is that, as with previous, putative examples of the contingent *a priori*, in order to decide the issue, we need to understand precisely what are the relevant candidates for such a status. With Evans, clearly the status of (8) as contingent *a priori* crucially turns on the nature of  $\mathcal{A}$ ; if for example  $\mathcal{A}$  is a mere rhetorical device (and does not appeal to possible-worlds semantics and the existence of the actual world as opposed to a realm of additional merely possible worlds), (8) is effectively the same (wide) proposition as

$$(8') \quad \forall x (Fx \rightarrow Fx),$$

---

<sup>175</sup> *Ibid.*, my italics. The last clause is telling, as we shall see.

<sup>176</sup> *Op. cit.*, p. 184.

<sup>177</sup> *Ibid.*

<sup>178</sup> *Op. cit.*, p. 186.

i.e. an *a priori* but trivially, necessary proposition. If, on the other hand, (8) (itself) is to be considered as genuinely *a priori*, then (as before) although it might be *a priori* that (8) asserts some contingent  $\mathcal{A}$ -involving proposition or circumstance (if it asserts any circumstance at all), for (8) itself to be genuinely contingent, the relevant circumstance (i.e. arrangement of objects and attributes) must ‘actually’ exist. That is to say, there must be some  $x$  that  $Fx$  and a set of possible worlds, such that  $\mathcal{A}$  functions as a substantive indexical, so as to distinguish the actual world from such possible worlds. The point being, as much as it might be the case that  $\mathcal{A}(Fx)$ , in order for this to generate a distinct and substantive modal property, one would need to move from the semantics of  $\mathcal{A}$  to the existence of the substantive circumstance,  $\mathcal{A}(Fx)$ . This, of course, would require something like the existence of real (in some sense) possible worlds and, in particular, the existence of the actual world as a property-generating particular. On all of these points I am highly suspicious but, as I indicate, I take this up in the final chapter of the thesis. My point then (to be taken up later), is that this appeal is illegitimate; there are no such possible worlds (as distinct from the ‘actual’ world). So  $\mathcal{A}$  is not a world-involving, genuine, modal predicate; it should be understood as a mere, rhetorical device, suggesting strong belief in the relevant proposition or circumstance on behalf of the utterer.<sup>179</sup>

Turning to the second point, even if my first point is rejected, to conclude that there are genuine contingent *a priori* propositions on the basis of a logico-semantic device is to argue from logic and semantics to epistemology and metaphysics; the wrong order of explanation. Perhaps one might argue that some epistemic conclusions (concerning a limited species of the *a priori*) are viable from such semantic premises; for example, given the semantics of (8) and (8’), the latter, at least, is trivially necessary and so *a priori*—and perhaps one could urge the same for (8) itself (as above). That said, to generate substantive (epistemic *and*) metaphysical conclusions from purely logico-semantic premises is surely the wrong way of doing things. To drum up a

---

<sup>179</sup> Similarly, Davies’s (2004, p. 103; cf. Kaplan, 1989, p. 539, n. 65) two-dimensional example of  $[\mathcal{A}s \leftrightarrow s]$  is a trivial, insubstantive and, ultimately, entirely semantic case of the contingent *a priori*.

substantive, *metaphysical* contingency from an indexical  $\mathcal{A}$  operator is an illegitimate manoeuvre. As indicated above, surely contingency (and necessity) apply to circumstances (arrangements of objects and attributes) in the first instance and only derivatively to sentences. So to generate ‘contingent *a priori*’ (and for that matter ‘necessary *a posteriori*’) propositions from  $\mathcal{A}$ -involving sentences is just the wrong way of doing things. So (8) does not provide an example of interesting, substantive knowledge; to echo Evans’s own introduction of this class of cases, it does not say anything about the world—it does not assert a circumstance. This being the case, (8) cannot be viewed as a genuinely contingent *a priori* proposition, since the argument for applying this status is entirely grounded in logico-semantic premises.

Of course, one might object here that (8), in being a universal generalisation, would generate interesting instances of the contingent *a priori* upon particular instantiation, *à la*

$$(8'') \quad Fa \rightarrow \mathcal{A}(Fa).$$

Against this, I would suggest two considerations. First, very much as before, even whilst the proposition appears to be contingent and *a priori*, any substantive, contingent, existential claim such as  $Fa$  itself, either involves a ‘Fregean name’ (with the same foregoing considerations concerning the lack of substantive *de re*, *a priori* knowledge of contingencies) or it requires unavoidably contingent and so empirical justification, since it asserts the contingent existence of a named object. Thus if any such conditional is contingent-existential committing, in relying on an *a posteriori* antecedent, it would be, as a whole, *a posteriori*. Second (and again as before), to generate contingent circumstances via a proposition involving an  $\mathcal{A}$  operator is to semanticise substantive, metaphysical (and epistemic) conclusions; i.e. not to provide genuine and interesting cases of the contingent *a priori*.

Finally with respect to Evans’s  $\mathcal{A}$ -involving putative cases, I turn to my third point; that, given what I say about  $\mathcal{A}$ , it cannot be made to rescue or support  $e$ ’s status as contingent and *a priori*. The putative case here would be

something akin to  $\lceil I \text{ actually exist at } t_0 \rceil (\mathcal{A}e)$ ; given that I know that I exist, I allegedly know *a priori* that I actually exist—but, of course, that I exist is contingent. Concerning  $\mathcal{A}e$  however, the central point is that either the ‘actually’ functions as a genuine  $\mathcal{A}$  operator (requiring a separate discussion of the actual and possible worlds) or it is a mere, rhetorical device, adding nothing to the original sentence,  $e$  qua  $e$ . In the first case, without the discussion of possible worlds (which I provide in the concluding chapter),  $\mathcal{A}e$  can only be viewed as a purely semantic, trivial and insubstantive ‘contingent *a priori*’ proposition, since the claim that if I know that I exist then that I know *a priori* that I ‘actually’ exist, depends crucially on the relevant possible-worlds semantics. In the latter case, since  $e$  qua  $e$  was judged either to be contingent but *a posteriori* or *a priori* but necessary (in the previous section), the same applies *mutatis mutandis* for  $\mathcal{A}e$ . In slightly more detail, if  $\mathcal{A}e$  is asserting a contingent circumstance such as  $Ei$  (my timeless existence), then given that it is conceivable that  $\neg Ei$ ,  $\mathcal{A}e$  turns out to be the *a posteriori* proposition  $e$ ; i.e. contingent but *a posteriori*. If on the other hand  $\mathcal{A}e$  is *a priori*, this is in virtue of the fact that the  $\mathcal{A}$  is so constitutionally tied to the utterance of  $\mathcal{A}e$  that it expresses a proposition to the effect that  $\lceil \text{If I am uttering } e \text{ at } t_0 \text{ then I exist} \rceil$ , i.e. it is the proposition  $e'$ , or,

$$(e^*) \quad Uae_{t_0} \rightarrow \exists x (Uxe_{t_0} \wedge x = a),$$

which is *a priori* but metaphysically necessary as well. The key point being, if I am uttering  $e$  at  $t_0$ , then (of metaphysical necessity) I must exist at  $t_0$ . Thus  $\mathcal{A}e$  (qua  $e'/e^*$ ) is an *a priori* proposition asserting a metaphysically necessary circumstance.<sup>180</sup>

---

<sup>180</sup> I am indebted here to Tim Williamson (and others), who raised the question of indexicality in my paper at the SIFA graduate conference in Padova, September 2007. Williamson (1986) argues that “There is at least one believer” ( $p$ ) is contingent and *a priori* on the basis of substitution into the *a priori* and “absolutely reliable method for forming true beliefs,...(M) Given a valid deduction from the premise that someone believes that  $p$  to the conclusion that  $p$ , believe that  $p$ ” (pp. 114-5). According to Williamson,  $p$  does not rely on any indexicals whatsoever, since, allegedly, (M) simply requires a valid deduction from  $Bxp$  to  $p$ . The problem with this is that if  $p$  is so embedded in (M), we would seem to have ‘if  $\lceil x \text{ believes that } p \rceil$  is valid then  $p$ ’, which is surely *a priori* and necessary (as per my analysis of ‘I exist’ above).

### 3.4 Apriority, introspection and causation

Having discussed  $e''$  with respect to indexicality and  $\mathcal{A}$ , I now turn to a potential argument that  $e''$  is contingent but *a priori* on the basis that it is known via introspection. Plantinga considers ‘I exist’ to be an example of the contingent *a priori*, arguing briefly that “I know *a priori* that I believe that I exist; I also know *a priori* that if I believe that I exist, then indeed I do exist”.<sup>181</sup> The main problem with such a line however is usually taken to concern the nature of introspection.<sup>182</sup> The point being, introspection is taken by those objecting to such an argument, to be an experiential or *a posteriori* mode of knowing; and  $e''$  is allegedly, essentially justified via introspection, so it is allegedly *a posteriori* rather than *a priori*. Now, I discuss the notion of introspection in the previous chapter (§2.2), where I suggest that it is a largely experiential (but somewhat heterogeneous) capacity, appearing to cover experiential awareness of such things as one’s own bodily feelings, sensations or tastes and less clearly experiential (in fact, as I claim, *a priori*) insights into necessary propositions. Whereas the former are fairly clearly *a posteriori* instances of introspection—‘I am warm’ and ‘I like biscuits’ for example being cases of sensational and memory-sensational introspection respectively—the latter are plausibly *a priori*;

$$(m) \quad \lceil 2^2 + 3^2 = 13 \rceil,$$

---

Alternatively, if someone needs to believe  $p$ , ‘I am a believer (in virtue of believing this belief)’ (or similar), in order to believe  $p$ , then the latter must be *a priori* and necessary in virtue of the deep self-referentiality of  $p$ . If, on the other hand, someone needs to believe  $p$ , ‘I am a believer (tenseless)’ (or similar), then  $p$  would have to be contingent and *a posteriori* in virtue of the conceivability of  $\neg p$ . Hawthorne (2002, pp. 250-1), expresses related doubts.

Williamson (1986) also introduces the notion of ‘hyper-reliability’ as a sufficient condition of apriority, such that if “it is impossible [for subject  $s$ ] to believe falsely that  $p$ ” (p. 117), then  $s$  knows that  $p$  *a priori*. Against this, I urge that this is a confusion of something akin to epistemic necessity for apriority. If  $s$  knows ‘I exist’ ( $e$ ), there is a strong sense in which this is hyper-reliable (or epistemically necessary?), but  $\neg e$  is surely conceivable, hence  $e$  cannot be *a priori*. Pryor (2006) expresses similar thoughts as to the hyper-reliability, but non-apriority, of ‘I exist’ and similar (see several of the following notes).

<sup>181</sup> Plantinga 1974, p. 8.

<sup>182</sup> Pryor (2006), for example, argues that (his version of)  $e''$  is straightforwardly *a posteriori*, since it relies on occurrent experience.

for example, being rationally necessary (i.e. necessary in virtue of the nature of the proposition as understood by relevant thinkers or speakers) and so *a priori*. What I mean to say here is that if a proposition is essentially, and only, justified via introspection, that proposition is *a posteriori*, whereas propositions such as *m*, although *knowable* via introspection, are not essentially so; and in virtue of being rationally necessary, they are *a priori*. That is, although one *can* come to know (occurently) *m* on the basis of *a posteriori* introspection, propositions such as *m* (qua mathematical propositions) are *essentially justified a priori* in virtue of being rationally necessary.

Of course, *m*, in virtue of being a mathematical truth, is necessarily true as well as being *a priori*. So what about the contingent *a priori*? Well, here one might argue that *e''* is just such a proposition; in virtue of ascribing the contingent property of existence to its utterer *u*, and in virtue of *u*'s uttering and thereby grasping *e''*, it is contingent but rationally necessary, or *a priori*. As stated towards the end of §3.2 however, the second line of objection to *e''*'s status as contingent and *a priori* is that introspection is *not* an example of *a priori* justification; *e''* is contingent but not *a priori*. Bonjour for example, makes this kind of objection, claiming that introspection is *a posteriori* since it consists in a causal-perceptual "awareness of temporally located contingent facts".<sup>183</sup> So whilst "I exist as a thinking thing" is "automatically justified for anyone who understands"<sup>184</sup> it, since it is based on introspection qua unavoidably causal-perceptual awareness of a contingent fact, it is justified *a posteriori* rather than *a priori*. As I suggest in the previous chapter, there are some problems with the causal-contingency criterion of *a posteriori* justification on which Bonjour relies; not least of all that a non-contingent criterion of *a priori* justification would appear to rule out the contingent *a priori* by definition. This being the case, we need to understand whether *e''* is essentially introspected, whether this requires causal-perceptual and therefore *a posteriori* justification (and potentially contingency), and how 'automatic justification' (which Williamson

---

<sup>183</sup> Bonjour 2005, p. 99. Cf. Pryor 2006 (especially pp. 333f.). Briefly, Pryor argues that "[I am uttering a sentence] (*u*), whilst being 'hyper-reliable' (or true in virtue of being thought), is not thereby justified *a priori*. On both my and Pryor's understanding of 'utter', *u* is very closely akin to *e''*. Pryor claims that *u* (and so *e''*) requires occurrent, introspective (i.e. *a posteriori*) justification, whereas the embedded claim that "[anyone thinking *u* (or *e''*) thereby thinks a true thought] is *a priori* and necessary.

<sup>184</sup> Bonjour 1998, p. 10.

and Pryor might describe as ‘hyper-reliability’)<sup>185</sup> is related to rational necessity. As before, I argue that a lot of these issues are settled by understanding just which proposition  $e''$  is taken to be. The previous sections are to some extent a discussion of a version of  $e''$  whereby it is equivalent to the indexical and necessary  $e'$ . In this section I begin by arguing that if  $e''$  is taken to assert a contingent circumstance (my existence at some time—not indexically linked to the time of utterance of  $e''$ ), then it is effectively equivalent to the original  $e$  discussed at the beginning of §3.2; that is, a contingent but *a posteriori* proposition.

My argument for this claim is as follows. Ultimately, if rational necessity is to be an interesting, useful and genuine modality, then it must be ‘grounded in’ the metaphysical; it must be something akin to metaphysical necessity (or possibility) in virtue of rationality—what it is necessary (or possible) for rational agents to think.<sup>186</sup> In particular, it must be (as I go on to argue in more detail both below and in the following chapter) distinct from ‘epistemic necessity’. This being the case, if a proposition ( $e$  or  $e''$  for example) expresses a metaphysically contingent circumstance (my tenseless, or temporal but non-indexicalised, existence),  $Ei$ , the very possibility of  $\neg Ei$  requires that  $\neg e$  or  $\neg e''$  be rationally possible (or *conceivable*). Clearly then, if all of  $e$ ,  $e''$ ,  $\neg e$  and  $\neg e''$  are rationally possible, then  $e$  and  $e''$  must be rationally contingent; they must be *a posteriori*. So, if  $e''$  is metaphysically contingent, I claim, (if it is at all knowable) then it is rationally contingent, or *a posteriori*, as well. Against the possibility of the contingent *a priori* then, this argument combined with that of the foregoing two sections amounts to the following. Proposition  $e''$  is either effectively equivalent to  $e'$ , such that it is deeply self-referential and so *a priori* but metaphysically necessary; or,  $e''$  is equivalent to the metaphysically contingent but *a posteriori* proposition expressed by the original  $e$ . In addition, given such an understanding of contingency and aposteriority, any deeply, substantively contingent circumstance is only going to be knowable (if knowable) on an *a posteriori* basis. Thus, all such (allegedly) non-indexical, putative examples of the contingent *a priori* will, I claim, turn out to be *a posteriori*.

---

<sup>185</sup> See several previous notes.

<sup>186</sup> Possibly relativised to individual—or groups of—thinkers. I discuss this in the previous and the following chapters.

Having said this, there are deep and complex matters at issue here; introspection; experience, causation, and (rational and metaphysical) modality, to pick out the main topics. We need therefore to understand whether ‘I exist’,  $e$  qua  $e$  (and similar), *are* essentially justified introspectively and experientially; whether this makes such propositions causally justified (and *vice versa*); whether this rules out their apriority; and if this then comes apart from rational necessity. This being the case, by way of supplementing and clarifying the foregoing argument, I now focus on several test cases:  $e$ ,  $m$ <sup>187</sup> and the additional example;

(*pain*) [I am in pain].

The point of the *pain* example is that it is a fairly evident case of an introspective, causal and *a posteriori* proposition, which asserts a clearly contingent circumstance. I use it therefore to highlight similarities with  $e$ , and to show the relevant differences between epistemic and rational modalities. The point being, some philosophers would argue that  $e$ , in virtue of being ‘automatically justified’, ‘hyper-reliable’ or, perhaps, ‘rationally necessary’, is in fact an *a priori* proposition; whereas *pain* is merely epistemically necessary. In what follows, I argue that automatic justification, hyper-reliability and *epistemic* necessity hang together, whereas *rational* necessity is a separate, more objective modality, grounded in the metaphysical. Moreover, importantly, *pain* and  $e$  fall in the former as opposed to the latter category; they are epistemically necessary but rationally (and metaphysically) contingent.

Let me begin then, with reference to the following table (displayed overleaf):

---

<sup>187</sup> Where  $m$  is any true mathematical proposition.

Proposition	Justification			Modality	
	Essentially introspective?	Causal?	<i>A priori</i> or <i>a posteriori</i>	Rational	Metaphysical
<i>m</i> [ $2^2 + 3^2 = 13$ ]	No	No	<i>A priori</i>	Necessary	Necessary
<i>E</i> [I exist]	<b>Issue 1</b>	<b>Issue 2</b>	<i>A posteriori</i> ?	Contingent?	Contingent
<i>pain</i> [I am in pain]	Yes	Yes	<i>A posteriori</i>	Contingent	Contingent

**Table 1.**

The table begins with proposition *m*, since this is perhaps the easiest to complete with respect to the five justificatory and modal-justificatory categories. Concerning *e* and *pain*, my initial thoughts are that (a) the two hang together—they are both rationally contingent, *a posteriori* and so causally justified; and (b) the claim that either proposition is rationally necessary rests on a confusion between the more subjective, epistemic necessity and rational necessity proper. Some of these claims are most clear with *pain*,<sup>188</sup> hence the numbered issues with respect to *e* at this stage. By way of providing the detailed argument lacking so far, the following is my defence of (a) and (b) with respect to *e*.

Moving from left to right along the row for *e* then, the first issue is that of introspection. Here the salient questions are; ‘is an introspectively justified proposition experientially justified?’ and ‘if so, is *e* introspectively and experientially justified?’ Beginning with the former question, in general (and as discussed in ch. 2, §2.2), clearly *a priori* justified propositions such as *m* are standardly not justified essentially by introspection; this can be a route to the occurrent knowledge that *m*, or a way of grasping *m*, but introspection alone does not justify *m* (and similar). Conversely, I would argue that if a proposition (*pain* for example) is clearly, essentially introspectively justified, then this is an experientially justified proposition. Turning briefly to the latter question then,

---

<sup>188</sup> On this point, I am in agreement with John Hawthorne (2002, p. 248), when he claims that defining such propositions as [I am in pain] and [I have a headache] as *a priori* would be a “cheap shot” in terms of defending the contingent *a priori*.

is *e* introspectively, and therefore experientially justified? Here I would argue that *e* (qua assertion of my tenseless—or tensed but non-indexicalised—existence) is much closer to *pain* than it is to *m*. This is because *e*, by asserting a metaphysically contingent circumstance, must be a proposition whose negation is conceivable (rationally possible), and both *e* and  $\neg e$  being rationally possible entails that *e* is rationally contingent, or *a posteriori*. Importantly, the claim that *e* (itself) is rationally necessary and so *a priori*, rests, I think, on one of three mistakes; either (i) the confusion of *e* for the deeply self-referential (and necessary) *e'*, (ii) the confusion of *e* (itself) with the inference from *a*'s thinking *e* to the necessity of *e*, or (iii) the confusion of epistemic for rational necessity.

In slightly more detail on (ii), the confusion here is between the contingent and *a posteriori* *e* with the *a priori* but necessary conditional along the lines of 'if I am thinking, I exist' or, more obviously (and trivially) 'if I exist, I exist'. The point being, if we take the proposition,

$$(e^*) \quad Uae_{t_0} \rightarrow \exists x (Uxe_{t_0} \wedge x = a),$$

we have a rationally and metaphysically necessary conditional, with an antecedent, which, if considered in isolation must be contingent and *a posteriori* (assuming the '*t<sub>0</sub>*' is not a strong indexical). Now, recalling Gassendi's objection to the *cogito*, *pain* is instructive here, since if we were to replace the  $Uae_{t_0}$  antecedent in *e*\* with *Pa* (for  $\lceil a \text{ is in } pain \rceil$  or  $\lceil I \text{ am in } pain \rceil$ ), we would get the same result; a rationally and metaphysically necessary proposition:

$$(p^*) \quad Pa \rightarrow \exists x (Px \wedge x = a),$$

with an antecedent, which, when considered on its own, must be contingent and *a posteriori*, qua essentially introspective and experiential.

Going into slightly more detail on (iii), what I claim is the most likely mistake is that of confusing the epistemic necessity of *e* (and *pain*) for the rational necessity of the same. This mistake rests on the confusion of the impossibility of doubting that one is in pain or that one exists, when one experiences the thoughts asserting such circumstances, for the wider (but

false) impossibility of ever being wrong about such matters. If I am aware that I am in pain (or that I exist) it is impossible for me to doubt the relevant circumstance (the thoughts are ‘automatically justified’ or ‘hyper-reliable’). That I might not have been in pain (or in existence) at this time is, however, rationally possible or conceivable; hence *pain* and *e* cannot be rationally necessary or *a priori*.

Having said this, a complete defence of such claims requires a full discussion of the distinction between rational and epistemic necessities. I provide this in the following chapter, so the foregoing is merely a preface to that section. The general idea of the distinction I want to make is that epistemic necessity is fully subjective and non-modal; rational necessity is more objective (perhaps ‘intersubjective’) and more clearly *modal*. Now, I claim, *e* and *pain* are epistemically but not rationally necessary. The point being, if I know that  $\lceil$  I am in pain at  $t_0 \rceil$ , then this is, quite simply, epistemically necessary-for-me; it is impossible to doubt *pain* given that I know *pain*. In virtue of its extreme subjectivity however, the proposition is less widely necessary; it is entirely conceivable that  $\neg$ *pain* or  $\neg$ *e*. That is, *e* and *pain* are just not the same kind of proposition as *m*; they are not justifiable *a priori*.

The second issue is that of experiential justification and causation. Similarly as before, the salient questions are, ‘Is all experiential justification causal (and *vice versa*)?’ and therefore ‘Is *e* causally or non-causally justified?’ I have already discussed Bonjour’s and (more relevantly now) McGinn’s positing of a causal account of *a posteriori* justification—in the previous chapter (§2.2). There I suggest that a non-causal criterion of *a priori* justification is perhaps preferable to a fully causal account (or a rejection) of apriority. I would now add that this claim certainly seems supported by the two more easily categorisable propositions, *m* and *pain*; the former being clearly non-experientially and non-causally, and the latter experientially and causally, justified. Setting aside the doubt that rationally necessary, *a priori* propositions such as *m* might somehow be causally justified then, I think it is a fairly safe assumption that aposteriority goes with causal and apriority with non-causal justification. Again, as before, and having already strongly suggested that *e* is rationally contingent and so *a posteriori*, I would also argue that *e* is much more

closely analogous to *pain* than to *m* here. By way of supporting this intuition, I would argue that since *e* is contingent-existential committing, it must be rationally contingent, *a posteriori* and so causally mediated.

Having said all of this, there is now a sense in which I appear to be endorsing Bonjour's and, perhaps to a greater extent, McGinn's causal/non-causal account of *a posteriori/a priori* justification. If this is the case, if causation demarcates the *a posteriori* and *a priori*, there is a worry that the notion of rational necessity becomes otiose; if causation does all the explanatory work, what is the need for this additional explanans? Well, in short, as much as I accept the basic tenor of such causal accounts, I would argue that it is rational necessity that is doing the deeper explanatory work; all *a priori* justification is non-causal but this is so in virtue of rational necessity; an *a priori* proposition is non-causally justified in virtue of being rationally necessary.

#### 4 Conclusion

I began by discussing the coincidence thesis (CT), suggesting that certain mathematical unknowables, such as Goldbach's conjecture (GC), show that apriority and aposteriority are not exhaustive with respect to epistemic justification (unlike metaphysical necessity/contingency, which are exhaustive), thereby disambiguating (CT) into the following four, putative sub-theses:

- (CT1) apriority entails necessity;
- (CT2) aposteriority entails contingency;
- (CT3) necessity entails apriority;
- (CT4) contingency entails aposteriority.

In addition to the non-exhaustiveness point, cases such as (GC) and its 'contingent equivalent' (CGC), provide counter-examples to (CT3) and (CT4) respectively; showing that (i) apriority and metaphysical necessity are not

coextensive, and suggesting that (ii) the best conjunctive thesis a proponent of (CT) could hope for would consist in  $\lceil (CT1) \wedge (CT2) \rceil$ .

This being the case, in §3 I discuss (CT1) and the contingent *a priori*,<sup>189</sup> where I dismiss the Kripkean examples, such as  $\lceil \text{stick } s \text{ is one metre long at } t_0 \rceil$ , claiming that there is an unresolved tension between knowing *a priori* that a certain sentence expresses such a proposition and knowing *the nature* of this proposition. I go on to allege that the resolution consists in understanding that contingent *a priori* sentences generally express (at least) two propositions; one ‘widely’ contingent but requiring *a posteriori* justification to generate substantive (*de re*) knowledge of contingent circumstances; and another ‘narrowly’ knowable *a priori* but asserting a necessary and usually conditional (*de dicto* or *de re*) circumstance. The difference in justification being that *a priori* knowledge of (*de re*) contingent circumstances is impossible; *a priori* knowledge of necessity is possible and, indeed, standard.

In §§3.2 to 3.4 I discuss other potential examples such as  $\lceil \text{I exist} \rceil$  ( $e, e'$ , and  $e''$ ) and  $\lceil \forall x (Fx \rightarrow \mathcal{A}(Fx)) \rceil$ , arguing that such cases either express existentially committing and so metaphysically contingent propositions, which are therefore rationally contingent or *a posteriori*, or they are so deeply indexical-involving that they express *a priori* but metaphysically necessary propositions (or are extremely superficial examples of *a priori* sentences that assert contingent propositions or circumstances—if they assert any circumstances at all). The key corollary to all of this being that rational modality is grounded in the metaphysical; if  $p$  is genuinely justifiable on an *a priori* basis,  $p$  entails a metaphysically necessary circumstance. There can therefore, be no contingent *a priori* propositions.

All of this said, the contingent *a priori* is no philosophical dead-end, since a genuine understanding begins to suggest several important theses (which I argue for and rely on throughout this and the following chapters); (i) that there is a three-way, sentence-proposition-circumstance relationship; (ii) that sentences are only derivatively *a priori* or *a posteriori*, since propositions are the bearers of rational modality (which is, in turn, dependent on the metaphysical); whereas (iii) circumstances (or arrangements of objects and

---

<sup>189</sup> I discuss (CT2) and the necessary *a posteriori* in ch. 5.

attributes) and then propositions are what is metaphysically necessary and contingent in the first instance; sentences are only very derivatively so.

As should be apparent then, I view the contingent *a priori* as very ‘interesting’, in virtue of, at least, its contribution to understanding the distinction between apriority and necessity; it is perhaps not so ‘scary’, since, as I argue throughout, there are no genuine contingent *a priori* propositions. So, whilst I dispute the existence of substantive examples of the phenomenon, I do think that a correct understanding of the relevant modalities strongly supports (a) a clear bifurcation of rational and metaphysical necessity, and (b) the need for a clear distinction between sentences, propositions and circumstances. Indeed, the failure of Kripke’s examples, is very much due to the latter distinction; the baptiser knowing *a priori* that a sentence expresses a certain proposition, on the one hand, but failing to know what circumstance that proposition asserts, on the other—the circumstance itself (and so the proposition), however, being clearly, metaphysically contingent.

Given the failure of the Kripkean and indexical-involving cases then, it would seem that there is some case to be made for accepting (CT1), at least in an attenuated form:

(CT1\*) if *p* is a genuinely *a priori* justifiable proposition, then *p* must be metaphysically necessary.

Having said this, I stress my commitment to fallibilism throughout the previous chapter (especially §6). Consequently, there is a significant worry over the utility of a notion of ‘genuine’ apriority. If it took approximately two millennia for humanity at large to realise that Euclid’s fifth postulate, *e<sub>5</sub>* (for example), was not, ultimately, justifiable *a priori*, there is a possible sense in which ‘genuine’ *a priori* justification is something of a chimaera; we can know what is not genuinely *a priori* (*e<sub>5</sub>* for example) but never, in advance, what *is* genuinely *a priori*—in this way, apriority has a parallel problem to that of induction in the philosophy of science—the jury will always be out.

So perhaps the best we can do is *prima facie* apriority and

(CT1p) if  $p$  is a *prima facie a priori* justifiable proposition, then  $p$  is a very weak guide to metaphysical necessity.

Well, as I insist in the previous chapter (and as I hint again here), although I am committed to fallibilism, it seems to be the case that if we can prove *a priori* that  $\neg p$  then  $p$  should not be viewed as more widely *a priori* in the first instance; whilst  $p$  might have been *prima facie a priori-for-s*, given a proof of  $\neg p$ , we ought to be able to revise  $p$ 's rational status. So, perhaps my final position on (CT1) is to hold the following attenuation:

(CT1s) if  $p$  is a *secunda facie a priori* justifiable proposition, then  $p$  is a strong (but still fallible) guide to metaphysical necessity.

All of this being the case, we need to understand whether (CT2) also holds; we need to discuss the necessary *a posteriori*, conceivability, and rational and metaphysical modality (to which I turn in Chapters 5 to 7). Before doing this however, I first need to set the scene for such a discussion. Thus, in the following chapter, I complete my discussion of apriority and modality via a further consideration of rational necessity, rational insight, and 'epistemic' and logical modalities.

# Chapter 4

## Rational, Epistemic, Logical and Metaphysical Modalities

### 1 Introduction

The previous chapter can be viewed as a criticism of the details but an endorsement of the spirit of Kripke's general epistemic-metaphysical distinction; whilst I dispute the existence of the contingent *a priori*, I endorse the claim that the rational, epistemic and metaphysical domains are distinct, at least qua non-coextensive. That said, I suggest that the *a priori* is, or involves, a kind of mixed 'epistemic' or 'rational' necessity. This being the case, the main aim of this chapter is now clear; we need to understand what kind of necessity is involved in *a priori* justification—and, more widely, what kind of modality is involved in general, rational claims.

In what follows, I begin the main task of setting out the positive details of the relationship between apriority and modality; discussing 'rational necessity', rational insight, whether and how this entails metaphysical necessity (§2), the 'regress problem' (§2.1), fallibility (again), certainty and objectivity (§2.2). In particular, I begin to draw out some of the implications and requirements of the previous chapter as regards apriority and metaphysical modality; apriority is not coextensive with metaphysical necessity and instead is better understood

in terms of a kind of ‘epistemic’, or rather, ‘rational’, necessity. In the following section (§3), I continue this discussion, covering the relationship between apriority and rational, epistemic and logical necessities. I argue that apriority cannot be a fully epistemic necessity and, following Bonjour to a certain extent, I claim that apriority is not coextensive with either ‘strict’ logical necessity or ‘narrow’ logical necessity. Finally (§4), I suggest that apriority should best be understood as coextensive with ‘rational necessity’ and that this is not coextensive with epistemic, logical or metaphysical necessities (even if it is, ultimately, grounded in the latter). I then outline the positive implications of this theory, in terms of its endorsing and explaining the rational/metaphysical-modal distinction; disambiguating the coincidence thesis; disarming the contingent *a priori*; setting the scene for an understanding of the *a posteriori* as ‘rational contingency’ and of conceivability as ‘rational possibility’ (as I go on to explain in Part II of the thesis).

Before beginning these tasks however, noting that I make such claims as that apriority ‘involves’, ‘is grounded in’ or, even, ‘is coextensive with’, some species of modality, let me first say a little about this. In response to such a set of claims, a first thought might be that apriority is merely a qualification or mode of knowing, whose main force is to endow the objects of knowledge with some kind of truth or necessity (ignoring for the moment the details of defeasibility and fallibility). Thus, since such claims appear to imply that apriority is (or is at least grounded in, or involves) some separate kind of modality, they are suspect or illegitimate. The general line of thought being that we should avoid coextensivity or grounding claims and focus instead on the alethic or modal status of a given *p* when *p* is *a priori*. Now I am in broad agreement that apriority is not a distinct modal realm qua some ‘species of modality’ perhaps best analysed in terms of a separate domain of (e.g. ‘epistemically’) possible worlds,<sup>190</sup> and I broadly agree that it should be understood as being some kind or mode of knowing. As I insist in the early stages of Chapter 2 however, the kind of knowledge that we are considering with respect to the *a priori* is propositional, so in qualifying propositional knowledge, apriority qualifies propositions; it is *in this sense* that I mean that

---

<sup>190</sup> But, as I say in ch. 7, I do not view *metaphysical* modality in terms of such a realm of possible worlds either.

the *a priori* is, or involves, or is grounded in, a species of modality. That is, if  $\lceil a \text{ priori } p \rightarrow \Box p \rceil$ , then, in endowing  $p$  with some kind of necessity, apriority 'is' (qua grounded in or involving) some kind of 'modifying' modality, in that the modifying modality is a necessary condition of apriority. The point being, if apriority somehow entails some species of necessity, I think it is fair to say that apriority 'is grounded in' or at least 'involves' the relevant kind of necessity.

Now, I discuss involvement, grounding, coextensivity and the relevant modalities in the remainder of this chapter, but since these topics are central to the thesis as a whole, a more complete outline can only be presented towards the end of Part II. This being the case, this chapter should be seen as an attempt to work through the beginnings of an understanding of apriority as somehow involving or being grounded in some kind of necessity. That is, I seek to answer the question of the kind of necessity involved in  $p$  when  $p$  is *a priori*; i.e. questions such as, 'what kind of necessity 'is' apriority?'; 'what kind of necessity is involved in *a priori* claims?'; 'what grounds apriority?'; 'what is the nature of apriority?'

## 2 Rational necessity, insight and metaphysical modality

As mentioned in the previous chapter, Bonjour is somewhat equivocal on the issue of (CT1). He appears to endorse Kripke's general distinction between metaphysical and epistemic modalities, whilst denying Kripke's main example of the contingent *a priori* and appearing to doubt the phenomenon in general, making repeated claims that *a priori* justification results in direct insight into the necessary truth of the relevant proposition or, even, circumstance:

"Turning to the positive aspect of the concept of an *a priori* reason, the traditional view, which I believe to be essentially correct, is that in the most basic cases, such reasons result from direct or immediate insight into the truth, indeed the necessary truth of the relevant claim."

"...[*a priori* insights are] insights into the essential nature of things or

situations of the relevant kind, into the way that reality in the respect in question *must* be.”<sup>191</sup>

And,

“[f]rom an intuitive standpoint, such rational insight purports to be nothing less than a direct insight into the necessary character of reality...What, after all, could be a better reason for thinking that a particular proposition is true than that one sees clearly and after careful consideration that it reflects a necessary feature that reality could not fail to possess?”<sup>192</sup>

Thus, despite endorsing the epistemic-metaphysical distinction, Bonjour at least appears to tie apriority, in an immediate and essential manner, to necessity (and it is reasonably clear from what he says that this necessity is metaphysical). In a similar vein to much of this, if my arguments from the previous chapter are applied, if *a priori* insight consists in endowing the relevant claim with metaphysical necessity, then there would appear to be a case for the claim that apriority is grounded in (or at least involves) a ‘modifying’, metaphysical modality.

There are however several, potential problems (some already noted) with the idea that apriority consists in rational insight into *metaphysically* necessary features of reality *simpliciter*. These are;

- (P1) the possibility of contingent *a priori* propositions and the potential falsity of (CT1)—as already discussed;
- (P2) a potential obscurity involved in the very notion of grasping or seeing such *de re* necessary features;
- (P3) a regress problem that might be implied by the notion of necessarily true, propositional *a priori* knowledge.

As I have already discussed issue (P1) at some length, rejecting the contingent *a priori* and expressing commitment to versions of (CT1), I now focus on (P2) and

---

<sup>191</sup> Both from Bonjour 2005, p. 99.

<sup>192</sup> Bonjour 1998, p. 107; cf. the surrounding discussion, p. 8, pp. 11-2 and p. 224.

(P3), respectively, only returning to the general issue of apriority and necessity after responding to these problems. Bonjour's insistence on a strong link between apriority and metaphysical modality makes responding to (P2) very difficult; hence in the remainder of this section, I offer a solution faithful to his general approach but substituting 'rational' for metaphysical necessity. Issue (P3) is perhaps more problematic, so in §2.1 I offer a distinct solution, whilst at the same time, admitting the viability of Bonjour's response. The proposed solution is that apriority consists in rational necessity but that it ultimately involves a propositional grasping of metaphysical necessities. Now, as I suggest in the previous chapter, (P1) is even more awkward for someone committed to a strong relationship between apriority and metaphysical necessity. This being the case, in §2.2 I return to my response to the contingent *a priori* and to my general position on the *a priori*; the endorsement of rational defeasibility, fallibility and of (CT1), via the claim that apriority consists in rational necessity but is, ultimately, grounded in the metaphysical.

Turning to issue (P2) then, if apriority consists in rational insight into the necessary features of reality, this potentially raises two additional questions; (a) 'what is rational insight?', and (b) 'how could contingent beings have such insight into such necessary features?' In terms of the 'what is', I claim (as in Chapter 2, §2.2) that Bonjour's account is initially, slightly obscure, in that it appears to equivocate between a non-causal and causal account of the *a priori* but, ultimately, seems committed to a kind of epistemic Platonism. In the same section, I discuss and respond favourably to the latter issue, arguing (to some extent with Bonjour) that rational insight is not akin to some Platonic *faculty* of rational intuition. Bonjour's (and to some extent, my) initial, positive response to (a) (i.e. that rational insight is akin to intellectual seeing, which is independent of experience and so, ultimately, concerns necessary propositions) still appears obscure to some philosophers.<sup>193</sup> The residual obscurity here is twofold and, ultimately, related to, or the same problem as (b). First, the account appears to endorse the claim that apriority strongly involves metaphysical necessity; at least in terms of endorsing (CT1). I respond to this problem throughout the remainder of this chapter via the sentence-

---

<sup>193</sup> Notably for example, Devitt 2005.

proposition-world relationship, together with the concomitant claim that apriority involves rational, rather than metaphysical necessity, at least in the first instance. Second and more problematic however, is the implicit question (b) itself; if apriority qua rational insight is an intellectual grasping of necessary features of reality, how is this possible for contingent beings? That is, how can such finite, contingent entities as human beings have direct and immediate access into necessary arrangements of objects and attributes?

My solution to this problem is also an initial response to the entailment problem. Apriority, in general,<sup>194</sup> is not rational insight into metaphysically necessary features of reality *simpliciter*, rather, it is coextensive with what I call 'rational necessity' in the first instance—even if it is ultimately grounded in the metaphysical. Now, before providing any positive argument for this set of claims, let me first respond to a quick potential objection that such a view is both limiting with respect to our access to modal truths and potentially self-refuting (given that I might appear to be claiming that *a priori* access to metaphysical modality is metaphysically impossible). Taking the second half of this objection first, let me state quite simply that I am not making an impossibility claim; what I am saying is that, in general, *a priori* access to metaphysical modality is not immediate; where that access is via an utterance of a sentence (or a thought), which expresses a proposition that says something about the world, the access is, quite clearly, mediate. In order to grasp the necessity obtaining in a relationship between certain objects and attributes, if that relationship is asserted by a proposition expressed by a sentence, then the grasping is, at least once, mediate. In response to the first half of this objection then, I do claim that we can have *a priori* access to metaphysical modality; only, this is mediated or limited by our grasp of propositions and the sentences that express them. That is, in order to know what (metaphysically necessary) circumstance is asserted by a proposition, it is necessary both to understand what proposition is being expressed by the relevant sentence, and the nature of that proposition, which, ultimately, is a matter of understanding relations between objects and attributes.

I now illustrate the foregoing claims (i.e. that (i) *a priori*, rational insight

---

<sup>194</sup> The reason for this qualification will become clear in the following section.

involves rational necessity in the first instance—even if it is ultimately grounded in the metaphysical—and (ii) *a priori* access to metaphysical modality is possible, but, in general, mediate) and provide more positive argument for the non-obscurity of apriority qua rational insight, by re-visiting an example I have already used; my version of Euclid’s fifth postulate,

( $p_5$ ) [exactly one line ( $l_2$ ) can be drawn through any point ( $p$ ), not on a given line ( $l_1$ ), such that  $l_2$  is parallel to (i.e. does not intersect)  $l_1$ ].

With respect to the first two of the foregoing claims, if *a priori* access concerns propositions that are justifiable independently of experience (and so that are necessary in some sense), in virtue of apriority being a broadly epistemic notion, we ought strongly to expect the relevant necessity to be broadly epistemic as well. So how does  $p_5$  provide support for the claim that the relevant modality is rational (and ultimately metaphysical) rather than specifically epistemic? Well, the argument of Chapter 2 was that the various versions of Euclid’s fifth postulate were *prima facie a priori* but, in virtue of not being (metaphysically) necessarily true on further (*a priori*) reflection, not genuinely *a priori*. This being the case, there is a very weak, very *prima facie* sense in which  $p_5$  is *a priori* (that is, necessary in some sense) and yet not metaphysically necessary; this is that  $p_5$  appeared on occasion to a thinker to be *a priori* but, on further, clear, rational reflection,  $p_5$  turned out not to be *a priori*— $p_5$  was *prima facie a priori* but not genuinely *a priori*. Now, what I think this shows is that given certain systemic background assumptions,  $p_5$  can be said to be epistemically necessary or logically necessary (i.e. given certain assumptions about the relevant geometry,  $p_5$  is a logically necessary truth concerning that geometry) but that it is not more widely, rationally (or metaphysically) necessary. That is, in order to understand apriority, we require a modality that is stronger than (the logical or) the epistemic, even if it is weaker than the metaphysical *per se*; and it is this modality that I am labelling ‘rational’.

In further support of both the first and second parenthesised claims, I now discuss the  $p_5$  example in slightly more detail. This example supports both the

claim that apriority consists in ‘rational’, rather than epistemic necessity, and that although we do have *a priori* access to metaphysical necessity, that access is mediate, as I now hope to explain. The  $p_5$  proposition is, however, slightly more complicated, in that whilst it provides initial support for, and clarification of (ii), since I claim throughout that it is not, ultimately, an *a priori* proposition, a further more clear-cut example would be helpful at this point. This being the case, let us briefly return to my discussion of Euclidean geometry from Chapter 2. As I have discussed the details of such examples in that chapter, I only present the relevant, bare bones here. So, to recap, assuming that  $p_5$  is *prima facie* justifiable *a priori*, it is thereby (according to those who claim that apriority entails metaphysical necessity) *prima facie* (but ultimately of course, *not*) metaphysically necessary. The *a priori* possibility (or conceivability) however, of  $l_5$  and  $r_5$  respectively, and both  $l_5$  and  $r_5$  contradicting  $p_5$ , demonstrates that  $p_5$  cannot be metaphysically necessarily true, and indeed, therefore, not strictly justifiable *a priori*. Thus, in the final sections of Chapter 2, I conclude that  $p_5$  is not genuinely or *secunda facie a priori* after all; it is only something like

$$(p_5^*) \quad \diamond p_5 \wedge \diamond r_5 \wedge \diamond l_5$$

that is *secunda facie a priori*. Now however, a further question arises; is such a revised *a priori* proposition a metaphysical necessity? Well, as I state above, even ignoring the mediation of the *sentential* access to the proposition, in order to know that the proposition asserts a metaphysically necessary circumstance, it is necessary to know the nature of that circumstance; it is necessary to understand what relation is being asserted to hold between which objects and attributes. Turning back to the details of  $p_5^*$ , what do the constituent propositions  $\diamond p_5$ ,  $\diamond r_5$  and  $\diamond l_5$  assert? In the simplest terms, each of these propositions concerns possibility, together with items such as lines and points (i.e. presumably abstract, necessarily existing objects), and relations between those objects, which, given the discussion of the geometry in the previous chapter, must be dependent upon the nature of the spaces assumed by the relevant geometries. Having said this however, putting the three propositions

together as  $p_5^*$  it is fairly clear that  $\diamond p_5$ ,  $\diamond r_5$  and  $\diamond l_5$  are mutually compossible, and so  $p_5^*$  is true and knowably so, *a priori*—at least, *secunda facie*. In addition however, I think it is also clear that  $p_5^*$  is *metaphysically necessarily* true,<sup>195</sup> and *a priori* knowably so, in virtue of the rational necessity of  $p_5^*$  and the *mediate* metaphysical necessity of the same; i.e. the metaphysical necessity that  $\diamond p_5$ ,  $\diamond r_5$  and  $\diamond l_5$  are compossible. So in slightly more detail, what is the mediated necessity here and how is it knowable or justifiable *a priori*? Well, what is mediated is *that*  $p_5^*$  is metaphysically necessarily true; i.e. that  $p_5^*$  asserts a necessary set of circumstances; a necessary arrangement of objects and attributes. Moreover, this is justifiable *a priori* in virtue of the *a priori* rational insight into the natures of the relations between (and the natures of) the objects and attributes mentioned in the constituent propositions. So, where we have a circumstance asserted (and mediated) by an *a priori* proposition, if we have *a priori* access to metaphysically necessary relations between the relevant (metaphysically necessary) objects and properties, then we have mediate, propositional *a priori* access to metaphysically necessary circumstances.

In summary, what I am suggesting here is that there is a difference in (at least) strength, but also in kind, between the species of modality involved in propositions such as the original  $p_5$  and the modified  $p_5^*$ . The former, since it turned out not to be metaphysically necessary, cannot be said to be *a priori* (or rationally necessary); it is only 'necessary' in the weaker, epistemic sense, given certain background assumptions, beliefs and knowledge about the system of which it is an axiom. That is,  $p_5$  is 'necessary-for-Euclid'; it is necessary given the assumption of Euclidean space. The latter however ( $p_5^*$ ) is more widely, *rationally* necessary, since it is (at the very least, very arguably) metaphysically necessary. That is, upon further rational reflection,  $p_5^*$  is rationally necessary on a (very much) as yet undefeated basis, to a much wider set of thinkers than the original  $p_5$  proposition.

All of this being the case, against those philosophers who claim that apriority is obscure, I suggest that, on the contrary, it is best understood as being rationally necessary insight into metaphysical necessity, which is mediated in virtue of being propositional in character. So, apriority is as

---

<sup>195</sup> Noting of course defeasibility and fallibility constraints mentioned in previous chapters.

obscure as the notions required to explain it; propositions and rational necessity. Having said this, I realise the topic of rational necessity is not cleared up by the foregoing paragraphs. However, this is a central concern of the thesis as a whole (and this chapter in particular). This being the case, I very much hope to partially define the notion in the following sections (§§3.1, 3.2 and 4 in particular).

## 2.1 The regress problem

Throughout the above, I have skirted around an issue that lurks in the background; namely problem (P3) noted at the beginning of the previous section. This problem is discussed in an exchange between Bonjour and Devitt,<sup>196</sup> and it applies irrespective of whether *a priori* reasoning delivers metaphysically necessary propositions *simpliciter* (i.e. Bonjour's position) or whether it is better viewed as being closer to rational necessity, and as delivering metaphysical necessities on a mediate basis (i.e. my position). The alleged problem is that when a proposition is justified or knowable on an *a priori* basis, that the proposition is so justified then requires further *a priori* justification, so generating a vicious, infinite regress; i.e. is  $\lceil a \text{ priori } p \rceil$  justifiable *a priori*, and if so, what about  $\lceil a \text{ priori } (a \text{ priori } p) \rceil$  and so on? Devitt's response to this problem is that the *a priori* should be explained (away) in terms of "conceptual competence" and that this is a skill, or knowledge-how, rather than knowledge-that.<sup>197</sup> This then, *vis-à-vis* propositional *a priori*

---

<sup>196</sup> Bonjour 2005, p. 100-1; Devitt 2005, pp. 112-3. The problem is also one that George Bealer attempts to solve via the idea that *a priori*, rational intuitions form a kind of basic 'evidence' (Bealer 1996b, pp. 121-30; 1999, pp. 30-7; 2002, pp. 102-5; cf. 1987). As with Bonjour's work, whilst I am sympathetic to Bealer's general position on the *a priori*, the notion of intuition that he appeals to is not one that would convince non-rationalists; and the idea that *a priori* intuitions themselves are a kind of evidence, would, I feel, be entirely unappealing to the contemporary empiricist. This being the case, I try to solve this problem in the spirit of Bealer and Bonjour, but without the appeal to a more thoroughgoing rationalism that such a notion of rational *intuition* would require. Bealer's later position (2007), that metaphysical necessity is a kind of analyticity, is not one I can endorse.

<sup>197</sup> Devitt 2005, p. 113. Devitt's discussion is couched in terms of the attempt to analyse apriority as analyticity and so to eliminate it in favour of conceptual competence. Devitt agrees with Bonjour on the failure of an analytic explanation, but for eliminative reasons; the title of his paper being, 'There is no *a priori*'. Ultimately however the entire discussion is framed within a naturalistic Duhem-Quinian holism (*op. cit.*, pp. 106-7). On all of these points, I am in strong

justification, is a dissolution rather than a solution. Having spent some time discussing the *a priori* in a positive light, I would at least appear to be committed to its utility, explanatory force and, ultimately, existence; a solution would therefore be preferable to a dissolution. Bonjour at least has a potential response to this problem; that at the most fundamental level, *a priori* insight is *non-propositional*, direct and immediate. That said, whilst there is much to admire in Bonjour's work on the *a priori*, his solution here is not altogether satisfactory, in that it appears to account for apriority in terms of a kind of brute intuition (despite the fact that Bonjour often attempts to avoid such a position),<sup>198</sup> which, in virtue of being akin to a kind of inner faculty of knowing, is something that an opponent of the *a priori* would find deeply objectionable. In this section then, I address the regress problem, once again via the example

$$(p_5^*) \quad \diamond p_5 \wedge \diamond r_5 \wedge \diamond l_5$$

together with some examples provided by Bonjour. I begin with a brief discussion of  $p_5^*$  so as to further introduce the issue and set up Bonjour's response. I focus on my account of the *a priori*-rational/metaphysical modality relationship, as, despite its being more complex than Bonjour's, I think it is closer to the truth and that it offers a slightly better response to the problem. In addition, despite hoping to tackle this problem in isolation, what I say here very much relates and contributes to my general theory of the *a priori* and modality, in that such examples of the *a priori*, when taken together with cases such as (GC) and (CGC) (from the previous two chapters), as well as showing that (i) apriority is not coextensive with metaphysical necessity (but is better understood to be coextensive with rational necessity, in the first instance), also show that (ii) *a priori* justification can provide epistemic access to metaphysical necessity, but that this access is generally mediate. It is (ii) that is most relevant here, in that if *a priori* justification of metaphysical modalities is mediate, *qua propositional* 'all the way down', then each propositional claim [*a priori*  $p$ ] seems to stand in need of further justification [*a priori* (*a priori*  $p$ )] and so on.

---

agreement with Bonjour, who argues that they fail to account for (or eliminate) the *a priori* in any way (as I go on to argue in §3 below).

<sup>198</sup> The solution is at Bonjour 2005, p. 100-1; one of the attempted avoidances is at *op. cit.*, p. 99.

Thus, the main questions of this section are, (iii) is *a priori* access to metaphysical modalities entirely propositional (i.e. mediate)?; if not (i.e. if there is immediate access, as Bonjour claims), then (iv) what *is* this immediate, non-propositional *a priori* access to the metaphysical?; and if it is mediate, then (v) is there a regress problem after all, or is this a *prima facie* problem that can be avoided?

Turning to  $p_5^*$  then, let us see what this shows with respect to questions (iii) to (v). As I have been suggesting throughout, with any utterance of a sentence such as ' $p_5$ ,  $r_5$  and  $l_5$  are individually possible', there is this three-way relationship between the sentence, the proposition expressed ( $p_5^*$  in this case) and the circumstance asserted; i.e. the relevant arrangement of objects and attributes (which I label  $p_5^*$  here for ease of reference). This being a three-way relationship, any access to  $p_5^*$  would appear to be twice mediate; one needs to know what proposition is expressed by the relevant sentence and what circumstance the proposition asserts. I suggest however, that apriority, in virtue of being a broadly epistemic notion, operates intrinsically at the propositional level and only derivatively at the sentential; thus for present purposes, we can perhaps set aside the latter and focus on propositional mediacy. There is then a two-way relationship and the remaining, concomitant, apparent one-level mediation of epistemic access to  $p_5^*$  via the proposition  $p_5^*$ . So, at least *prima facie*, if  $p_5^*$  is *a priori*, our access to the circumstance  $p_5^*$  would appear to be mediate qua propositional. Considering the example of *modus ponens* however, Bonjour says the following:

“...because of the role that such [*a priori*] insights are supposed to play in deductive inference, it is often and quite possibly always a mistake to construe them as *propositional* in form...[A]t least in the most fundamental sorts of cases (think here of *modus ponens*), the application of a propositional insight concerning the cogency of such an inference would require either a further inference of the very sort in question or one equally fundamental, thereby leading to a vicious regress. Instead, I suggest, the relevant logical insight must be construed as non-propositional in character, as a direct grasping of the way in which the conclusion is related

to the premises and validly flows from them.”<sup>199</sup>

BonJour continues to argue that this non-propositional conception of *a priori* insight should be extended to many other cases, including examples such as  $[2 + 3 = 5]$  and  $[\text{no surface can be uniformly red and uniformly blue at the same time}]$ . Ignoring the latter, more complex example for now, the justification of which would appear to be very propositional in nature, and focusing on examples such as  $p_5^*$ , *modus ponens* and  $[2 + 3 = 5]$ , the problem with this approach is that such examples just *seem* deeply propositional. Moreover, in offering an account of apriority in terms of direct, immediate, non-propositional rational insight, BonJour appears to be coming very close to espousing the kind of (faculty of) rational intuition that he (and critics of the *a priori*) find so problematic; i.e. if apriority ‘at the most fundamental level’ just boils down to some direct, non-propositional insight, if we just *see* or *grasp* such claims to be (necessarily) true, then critics of the *a priori* will have much to complain about. This being the case, let us return to the examples discussed, so as to see whether they might suggest a more satisfactory solution to the regress problem and questions (iii) to (v) above.

In order to grasp  $p_5^*$ , it at least appears to be necessary to understand  $p_5^*$  and *that* this asserts the circumstance  $p_5^*$ ; our *a priori* access to the relevant circumstance just seems propositional. Against this however, in this apparently straightforward case, perhaps it is possible to insist that (the truth of or the circumstance asserted by)  $p_5^*$  is just grasped, immediately and in a non-propositional manner; i.e. that  $p_5^*$  does assert (or even, *is*)  $p_5^*$  in virtue of some direct grasping of  $p_5^*$  itself? Well, here, first let it be noted that (even without the parenthesised phrase ‘the truth of...’), ‘*that...p<sub>5</sub><sup>\*</sup>* is just grasped, immediately’ and ‘*that p<sub>5</sub><sup>\*</sup>* does assert  $p_5^*$ ’ once again at least *sound* propositional; although, that I might just *grasp* or *see*  $p_5^*$ , of course, sounds much less so. So perhaps neither consideration is telling; we should not look to syntax to determine ontology. Now, as I suggest, this issue is really at the deepest level of metaphysics and ontology—we are trying to talk about propositions, objects and attributes, and about relationships that might hold

---

<sup>199</sup> BonJour 2005, p. 100.

between them; but although it is possible to label propositions relatively unproblematically, in labelling relationships, objects and attributes and by attempting to discuss whether (it is the case *that*) such circumstances are grasped, we can skew the debate either way depending on the choice of terminology. This being the case, it is extremely difficult to come to any sensible and reasonable conclusion here. Nevertheless, let me at least attempt to do so.

My proposed solution to the regress problem then, is as follows. First, apriority, in virtue of being an epistemic notion, is going to be largely propositional; if I am justified in believing something *a priori*, that something is a proposition (whatever that might be—and even if that, ultimately *is* a circumstance or arrangement of objects and attributes). Instead of attempting to draw the sting from the problem by proposing a bifurcation of apriority in terms of a general, mediate, propositional form that ‘bottoms out’ in a direct, immediate, non-propositional form (with respect to the most fundamental cases) then, in what follows, I aim to block the regress at the first level; i.e. to admit the potential regress but to argue that it is non-vicious.

So, with an *a priori* proposition such as  $p_5^*$ , that this is justified *a priori* appears, *prima facie* at least, to suggest that the proposition  $\lceil a \text{ priori } p_5^* \rceil$  also stands in need of such justification (and so on). Against this, I claim, once  $p_5^*$  is seen to be *a priori qua rationally necessary*, the proposition just is justified *a priori*, in virtue of being so rationally necessary (admitting the constraints of defeasibility and fallibility of course). That is,  $p_5^*$  for example, in virtue of being justifiable independently of experience *just is* rationally necessary, *and vice versa*; i.e. where a particular proposition  $p$  is *a priori qua rationally necessary qua justifiable independently of experience*,  $p$  just is so justified; hence there is no need to posit any regress whatsoever. Now, of course, if  $p$  is *a priori*, then we *can* generate an apparent regress by saying that  $\lceil a \text{ priori } p \rceil$  also happens to be *a priori* (and so on) but, of course, if  $p$  is *a priori*, then so will be the proposition  $\lceil a \text{ priori } p \rceil$  (and so on). Thus, in this respect, rational necessity operates in the same way as metaphysical; if  $p$  is (rationally) necessary, it is also (rationally) necessary that  $p$  is (rationally) necessary (and so on). I conclude therefore, that this regress is entirely explicable, mundane and neither vicious nor problematically infinite.

## 2.2 Apriority and rational necessity; certainty and objectivity

As I indicate above, there is much to admire in Bonjour's work on the *a priori*. So what has gone wrong with the direct, non-propositional view? Bonjour's mistake, I think, is to confuse the 'feeling' of *a priori* insight, the 'phenomenology of apriority' perhaps, with *a priori* justification itself. Indeed, I would agree that the occurrent feeling that accompanies an *a priori* rational insight into the truth of  $p_5^*$ , *modus ponens* or  $\lceil 2 + 3 = 5 \rceil$ , for example, strongly suggests that such insight does consist in a direct and unmediated access to the truth or rational (and ultimately, metaphysical) necessity of the same. Against this however, I would argue that there is no need to explain the 'what' and the 'how' of *a priori* justification in terms of the occurrent feeling of *a priori* insight; this would be to shift the subject matter unnecessarily and, as we have seen, problematically, in that such direct, non-propositional insight, even if it 'solves' the regress problem, remains somewhat obscure. Instead, we should focus on the real issue—*a priori* justification—and realise that this does not generate a vicious regress, in that where a regress is possible this is akin to the higher-order necessity of  $p$  when it is metaphysically necessary.

Having said this, there is a possibility that the direct, non-propositional, versus the mediate, propositional view of *a priori* access is something of a side issue. The point being, if some objection to the foregoing paragraphs can be made to show that a vicious regress remains, it is difficult to see just how Bonjour's account would manage to avoid the same problem. That is, if  $\lceil a \text{ priori } p \rceil$  really does stand in need of additional justification such that  $\lceil a \text{ priori } (a \text{ priori } p) \rceil$  and so on, unless there is a positive account of what direct, non-propositional access *is*, the same problem would appear to apply to the non-propositional version;  $\lceil \text{direct-}a \text{ priori } \mathbf{Fx} \rceil^{200}$  would seem to stand in need of additional justification such that  $\lceil \text{direct-}a \text{ priori } (\text{direct-}a \text{ priori } \mathbf{Fx}) \rceil$  (and so on). The objection here is that as much as the proponent of direct, non-propositional access might insist that the first  $\lceil \text{direct-}a \text{ priori } \mathbf{Fx} \rceil$  does not stand in need of further (direct) justification, since the access *just is* a direct,

---

<sup>200</sup> As before,  $\mathbf{Fx}$  is meant to suggest an arrangement of objects and attributes; i.e. a circumstance.

non-propositional grasping or seeing, in the absence of a clear and unobjectionable account of what this amounts to, it certainly seems akin to claiming that our access to *Fx* just is directly *a priori*. Now, if we can have such direct access to *Fx*, then why not direct access to the circumstance asserted by the proposition [direct-*a priori Fx*] (and so on); thus the regress would apply to this version as much as it might to the propositional account. The point I am trying to make is that *if* the regress did apply (and I think it does not—certainly not in an objectionable way), it would apply to either account, each ultimately being a different description of the same circumstances. In favour of the propositional account, apriority is a broadly epistemic notion; knowledge and justification (in the relevant senses) are usually understood to concern propositions; the simple cases discussed all seem strongly propositional (and this would apply *a fortiori* for more complex cases); moreover, the propositional account, together with the concomitant notion of rational necessity, is significantly simpler and less obscure than the direct, non-propositional view. This being the case, the propositional account is to be preferred over the non-propositional view. There is however, a sense in which my solution is very similar to the non-propositional account. The point is, Bonjour's account 'bottoms out' in a direct, non-propositional grasping of the relevant circumstance; similarly, mine rests on a near equivalence of apriority and rational necessity, the latter (like direct grasping) being what makes *p a priori*; what justifies the claim that *p* is *a priori*. As an interim summary, whilst I appear to favour strongly the propositional account, I do not intend to claim that direct, immediate access is impossible; rather, I claim that the propositional account is simpler, more consistent and coherent, better fits the examples, and is less objectionable than the non-propositional. That said, *a priori* access is, *in general*, mediate; *if and where* it is immediate, it is rational necessity that does the explanatory work; where a subject does grasp *Fx a priori*, either *Fx* itself, or the *p* that expresses it, must be rationally necessary, and *vice versa*; if *Fx/p* is rationally necessary, *Fx/p* is justified *a priori*.

By way of summarising the previous two sections, I now offer some further clarificatory remarks on what I say above with respect to rational necessity explaining, or grounding, apriority. My claims of the foregoing paragraphs (that

the *a priori* qua justifiable independently of experience qua rationally necessary, does not stand in need of further justification; hence in virtue of *being* rationally necessary, an *a priori* proposition *just is* directly justified) might appear to more committed empiricists, and perhaps to strongly fallibilist rationalists, to smack somewhat of infallibility, certainty, indubitability and, of course, necessity. This being the case, a few words are in order to explain this appearance. First, concerning necessity, I explain the differences between metaphysical and rational necessity throughout the previous chapters—and I have more to say in what follows. So, whilst apriority consists in rational necessity, although rational necessity is distinct from the metaphysical, it is, I claim, grounded in the latter in that either it strongly involves or is ultimately explained by the metaphysical—as I say however, I have more to say about this below.

Second, and with respect to the other notions, I also admit that the *a priori* is fallible (and defeasible—by further *a priori* reasoning) in previous chapters, so as regards being rationally necessary, what I mean to say here is that if *p* is *prima facie* (fallibly, defeasibly) *a priori*, *p* is fallibly and defeasibly rationally necessary (and *vice versa*). Similar remarks then apply to certainty and indubitability; if *p* is *a priori*, *p* is fallibly (and defeasibly) ‘certain’ or ‘indubitable’ (i.e. very weak forms of ‘certainty’ and ‘indubitability’). Only where *p* is genuinely *a priori*, can it be said to be entirely infallible, indefeasible and certain or indubitable—but of course, the class of genuinely *a priori* propositions is going to be very small and difficult to establish for such limited creatures as human beings. Now, indubitability in particular has been a cornerstone of thoroughgoing rationalist accounts of the *a priori*; one interpretation of Descartes’s epistemology being that it begins by attempting to reconstruct human knowledge on the basis of that which it is impossible to doubt. Whilst I claim that a rationally necessary proposition is ‘indubitable’ (i.e. on an ongoing, *prima facie* basis), let it be noted that this is a very constrained form of indubitability; rational necessity is defeasible, corrigible and thoroughly fallible; so ‘more’ *a priori* claims are more indubitable and ‘less’ *a priori* claims less indubitable. To cash this out in terms of examples, considering some of the cases we have already discussed,  $e_5/p_5$  is, as I make clear,

thoroughly *prima facie a priori*; hence it is highly dubitable (indeed, apparently, actually false); Bonjour's colour exclusion proposition [no surface can be uniformly red and uniformly blue at the same time], is perhaps more *secunda facie a priori*, so more indubitable; and so on for  $p_5^*$  and, ultimately, the likes of [2 + 3 = 5]. These, I claim, are increasingly 'indubitable' in the relevant sense (but I suppose there is some sense in which we might just have mathematics 'all wrong').<sup>201</sup>

One final topic to clear up, with respect to apriority as rational necessity, concerns the notions of 'objectivity' and 'subjectivity' (as discussed in Chapter 2, §4). As with certainty and indubitability, some of my remarks above might appear to suggest that apriority is some kind of 'objective', modal phenomenon. As before, although I suggest that apriority is a kind of alethic, epistemic necessity, this is not intended to imply that it is some kind of fully 'objective' phenomenon, akin to metaphysical necessity. In addition, whilst I claim that apriority must be akin to an alethic version of epistemic necessity, I do not intend this to commit me to a fully 'objective' account; there remains an essential 'subjectivity' to *a priori* claims, and if apriority is best understood in terms of rational necessity, then there is a strong sense in which this notion must be essentially 'subjective' too. I discuss all of this, with respect to a working understanding of apriority as independence of experience, in Chapter 2. There, I outline the position that apriority is an essentially 'subjective' (qua *intersubjective*) notion. This being the case, my conclusions of that section should now be applied to the amended account of apriority; apriority qua rational necessity is an essentially intersubjective phenomenon; where a particular proposition is rationally necessary, there is a strong sense in which this must be considered rationally necessary *for* a particular (set of) subject(s). The phenomenon is not thoroughly subjective however, the process of 'collective reflective equilibrium' going some way towards making collectively, *secunda facie a priori* propositions 'more' objective (qua *intersubjective*). Just by way of an example,  $e_5/p_5$  qua *prima facie a priori* proposition could be said to be

---

<sup>201</sup> I hope not to endorse the Quinean thesis that 'there are no unrevisable truths' here, since, for fairly clear reasons, the statement itself must either be revisable or not (and so false on either count). That is, there must be some central class of unrevisable *a priori* propositions, but saying what these are, is, perhaps, a very difficult task Cf. Putnam 1978.

'*a priori-for*' Euclid; the amended and corrected  $p_5^*$  being more collectively (intersubjectively) *a priori*, post Riemann and Lobachevsky's additional *a priori* reflection on the original proposition.

### 3 Rational, epistemic and logical modalities

So far, despite endorsing some attenuated versions of (CT1), I have argued that apriority is not coextensive with metaphysical necessity; that is, I have denied the general coincidence thesis (CT), especially in the light of Goldbach's conjecture and its 'contingent equivalent' (CGC). In claiming that apriority should be understood in terms of a constrained form of epistemic or 'rational' necessity, however, I have also argued that it is propositional, mediate and that there is no clear regress problem. The latter claims very much turn on the notion of rational necessity as a form of 'epistemic' necessity. This being the case, I now need to explain precisely what this amounts to. Given that apriority is 'essentially intersubjective', as I say above, does this mean that it just is standard epistemic necessity, or is it a more constrained, more *modal* kind of modality? And if it is the latter, is this just the same as some kind of logical necessity, or is there room between strict, narrow and broad logical (i.e. metaphysical) necessity so as to accommodate the rational? In this section I discuss such questions, beginning with the epistemic (§3.1), arguing that epistemic necessity is too *epistemic* (i.e. non-modal or 'modal-for-all-I-know') to account for apriority. I then discuss the more familiar logical necessities, arguing that none of these is sufficient to explain rational necessity (§3.2); concluding that the latter must therefore be a kind of modality 'between' the epistemic/logical and metaphysical.

#### 3.1 Rational and epistemic necessity

The distinction between *epistemic* and more 'modal' senses of necessity (and especially the relevant relation between epistemic and rational necessity) is not

a topic that has been discussed at great length in the literature.<sup>202</sup> Two-dimensionalists (and Chalmers in particular)<sup>203</sup> make much use of the distinction between ‘metaphysical’, ‘horizontal’ or ‘secondary’ necessity on the one hand, and ‘epistemic’, ‘diagonal’ or ‘primary’ on the other, all of which I discuss in Chapter 1, concluding that such two-dimensional analyses are overly logico-semantic, given that the relevant analysanda are metaphysical and epistemic, and that neither field can be reduced to logic or semantics. Such analyses are, of course, very much related to Kripke’s discussion in *Naming and Necessity*. Kripke discusses ‘epistemic possibility’ throughout that work, but apart from scattered remarks, does not make much use of the distinction between epistemic and more the ‘modal’, rational modality I intend here.<sup>204</sup> Yablo (1993) discusses various senses of epistemic possibility with a view to understanding the notion of conceivability, but he only touches on the distinction I want to make. There is a sense then in which I am breaking new ground here.<sup>205</sup> This being a difficult task, in what follows I begin with the (fairly standard) notion of epistemic necessity (and possibility—both of which have been discussed more thoroughly, at least in terms of epistemic logic)<sup>206</sup> and continue to argue that there is a clear distinction between the standard notion, which might be called ‘mere’ or ‘subjective’ epistemic necessity (i.e. what I occasionally label ‘necessity-for-all-I-know’) and the more relevant, more modal, rational necessity, on the other.

Turning to the more standard, historical notion, epistemic necessity and possibility, as expressed by the modal qualifiers ‘necessarily’ or ‘must’, and ‘possibly’, ‘might’ or ‘may’ respectively, are usually understood to convey what

---

<sup>202</sup> ‘Epistemic possibility’ is discussed by DeRose 1991; Hacking 1967, 1975; and Teller 1972 but, as I indicate, not in the way I discuss it here.

<sup>203</sup> See Chalmers 1996, 2002 and 2006a; cf. Jackson 1998, 2004.

<sup>204</sup> Hughes (2004, pp. 86-7) discusses Kripke’s use of ‘epistemic possibility’, highlighting a deviation from standard usage (i.e. subjective, non-modal) towards “*a priori* (Cartesian) certainty” (Kripke 1980, p. 143, n. 72). If Kripke is talking about ‘epistemic possibility’ qua ‘*a priori* possibility’, then his usage is much closer to the sense of rational modality I intend here. As ever though, pinning down Kripke’s actual position is somewhat difficult. Hughes’s discussion of Kripke’s use of ‘might have turned out’ and ‘might turn out’ is also interesting (2004, pp. 87-8).

<sup>205</sup> Fiocco (2007) offers some discussion of conceivability and epistemic possibility—but, again, not the kind of discussion I am suggesting.

<sup>206</sup> I am thinking of work on the logic of knowledge and belief dating as far back as Aristotle’s *Prior and Posterior Analytics*, but more recently including works such as Prior 1955, White 1975 and Rescher 2005.

is entailed by and what is consistent with a subject's knowledge, respectively. So for example, if I know that the cat is on the mat, it is epistemically necessary (for me) that there is something on the mat; it is epistemically possible (for me) that there is an additional item on the mat (e.g. a lightly chewed bird); and it is epistemically impossible (for me) that there is nothing on the mat (since the cat 'must' be on the mat). Similarly, a subject *s* who knows that the cat is not on the mat but is elsewhere in the house, may utter the phrase, 'It must be somewhere else in the house'; and if *s* does not know that it is in the house, he may say, 'It might be in the house' (perhaps both understood with the tacit '...for all I know').

Now, the examples here are illuminating. The first cat example shows that epistemic modality is, as the name suggests, a deeply *epistemic* (and subject-relative) 'modality'.<sup>207</sup> The point being, if I know some *p* and that *p* entails *q*, then, according to the standard reading of epistemic necessity, *both p and q* are epistemically necessary (for me);<sup>208</sup> and both  $\neg p$  and  $\neg q$  are epistemically impossible (for me). Both examples support the insertion of the 'for me' qualification, and make the conclusion that epistemic necessity is a very subject-relative 'necessity', 'for all *s* knows', more evident; i.e. they support the conclusion that where *s* knows some *p* (and that *p* entails *q*), it 'must' be the case (for *s*) that *p* (and *mutatis mutandis* for epistemic possibility).

Now on the second point, epistemic necessity cannot be the same notion as apriority or rational necessity, since the latter, whilst being 'subjective' to a certain degree (what I am able to know *a priori*, depending largely on my epistemic situation), is much more 'objective', in virtue of being intersubjectively corrigible as per the *e<sub>s</sub>/p<sub>s</sub>* example (of *prima facie* apriority) used extensively throughout this and previous chapters. Even more 'objective' examples of rational necessities are provided by the various mathematical examples already cited, such as  $\lceil 2 + 3 = 5 \rceil$ ; all of these are rationally necessary in a much wider sense than that suggested by the notion of epistemic 'necessity' as entailment under a certain body of knowledge or belief.

---

<sup>207</sup> The scare quotes indicating a tension in something's being both deeply epistemic yet fully modal.

<sup>208</sup> I ignore here a debate about the closure of knowledge under known entailment. For details and further reading see the 'Introduction' (and papers mentioned therein) to Sosa and Steup 2005.

More to the point however, is the very *epistemicity* of epistemic ‘modality’ as opposed to the wider modality involved in the *a priori* domain. The point here being that a claim such as ‘the cat is on the mat’ can hardly be seen as a plausible candidate, metaphysically necessary proposition and, this being the case, it is very difficult to see how it could be considered to be more widely *rationally necessary* (i.e. intellectually necessary irrespective of empirical concerns) or *a priori*. Standardly *a priori* propositions such as ‘ $2 + 3 = 5$ ’ not depending on such unavoidably empirical information as a particular object’s location in space, for example.<sup>209</sup> It is this involvement of, or grounding in, metaphysical necessity that is what really distinguishes the rational from the epistemic; i.e. apriority qua rational necessity from mere, *epistemic* ‘necessity-for-all-I-know’.

Having thus established a subjective-‘modal’/intersubjective-*modal* distinction, which suggests a clear dichotomy between epistemic and rational necessity, I now need to tease out the implications for the related issue of alethicity. Metaphysical modality is one of the alethic modalities, in that where  $p$  is metaphysically necessary this is usually understood to be in virtue of something’s making it the case that  $\Box p$ ; propositions being necessary in virtue of the necessity of the relevant circumstances; circumstances being necessary in virtue of the natures of the relevant objects and attributes. This being the case, both examples, in highlighting the deep epistemic-subjectivity of epistemic necessity, show that the relevant  $p$  is not more *widely* necessary when  $s$  knows that  $p$ ; if  $s$  knows that  $p$  (and that  $p$  entails  $q$ ) the so-called epistemic ‘*necessity*’ here is entirely dependent on it being the case that  $s$  knows that  $p$ , and whilst  $s$ ’s knowing that  $p$  might be objectively the case, the *metaphysical* necessity of  $p$  is not made true in virtue of that fact (since  $s$  knows that  $p$ , yet  $p$  is not metaphysically necessary). As with metaphysical necessity on the other hand, apriority and rational necessity are (or should be) broadly alethic notions, in that whilst *prima facie a priori* justification can generate falsehoods, such as  $e_5$ , more ‘genuine’, *secunda facie* apriority or rational

---

<sup>209</sup> Similarly, these examples show that epistemic possibility is not the same as *a priori* possibility—or, as I claim in the following chapter, *conceivability*; there being nothing on the mat being epistemically *impossible* (for the relevant  $s$ ), but surely (more widely) *conceivable*. I leave the details of this claim for the next chapter however. Yablo (1993) makes similar points.

necessity should only generate necessary truths—albeit fallibly. The point being, as with the  $p_5$  example, I claim, if it turns out that  $p$  is false and so not metaphysically necessary,  $p$  cannot be said to be *a priori* knowable or rationally necessary. All of this being the case, I claim, epistemic necessity is distinct from rational necessity in virtue of being (i) deeply subjective and, more importantly, (ii) entirely non (alethically) modal.

There are two main objections to the foregoing line of argument, which I now outline (together, since they are related) and respond to briefly, before moving on to the various logical necessities. First (developing a theme suggested in the previous paragraph), is the claim that since knowledge itself is objective and (fallibly) alethic, so too must be the relevant sense of ‘epistemic necessity’. The second objection is that epistemic necessity (at least as in the examples described) *is* alethic in the relevant sense and so the examples (as described) miss a salient point; namely that what is putatively ‘necessary’ is not [the cat is on the mat] or [the cat is in the house], but some more qualified propositions (and circumstances) such as [actually, the cat is on the mat (at  $t_0$ )], or [(if what I know/believe to be the case is true), then (actually) the cat is in the house (at  $t_0$ )]. Taken together, the two objections would be alleged to show that the considerations of the foregoing paragraphs, and especially the two examples, are significantly misguided; there is just no such sense of ‘subjective’ epistemic necessity; there is only the kind of epistemic (qua ‘objective’, rational) necessity I describe.

Before responding to both objections, let it be noted that even if both were to go through, if there were only one, ‘objective’ sense of epistemic necessity after all, then I would be reasonably happy with this result; we would still have something in the region of the target analysans—intersubjective, epistemic/rational necessity. That said, I think there *is* a distinction to be made and that this is helpful in terms of elucidating the notion of rational necessity and, therefore, apriority. Concerning the first of the objections then, I both hinted at this and responded briefly in the foregoing. Whilst on several (externalist and internalist) accounts of knowledge and justification, if  $s$  knows that  $p$ , there is something objective that makes this the case, this does not make the relevant sense of ‘epistemic *necessity*’ objective and thereby alethically modal. The point

is, whilst knowing that  $p$  may well be an objective issue, that  $p$  is thereby 'epistemically *necessary*' does not render  $p$  necessary in any wider, substantive sense. Given that the cat's being on the mat is a thoroughly contingent circumstance,  $s$ 's knowing this circumstance (however objective) does not thereby render the circumstance necessary in any objective sense;  $p$  here is neither rationally nor metaphysically necessary.

This exchange however leads directly to the second objection; that it is not the obviously contingent circumstance described that is 'necessary', rather it is a more qualified circumstance, such as the 'actuality' of the cat's being on the mat. In response to this second objection, let me first say (as I did at the start of the previous paragraph), that if, in virtue of the insertion of such an 'actuality' qualification, we have located a form of objective epistemic necessity, then so be it; we have something like rational necessity, something like apriority. That said however, and as very much as argued in the previous chapter, I do not think that in virtue of inserting an 'actually' operator,  $\mathcal{A}$ , in front of phrases such as 'the cat is on the mat', we generate genuine, interesting necessities; such a move smacks of the two-dimensionalism I reject in Chapter 1 and, more importantly, is precisely analogous to the Evansian examples of 'superficial' contingent *a priori* propositions I reject in the previous chapter. The point being, just via some combination of the occurrent knowledge that  $p$ , and the (S5 or other) semantics of  $\Box$  and  $\mathcal{A}$ , we do not thereby generate the genuine metaphysical necessity  $\lceil \Box \mathcal{A} p \rceil$ . This is because such a necessity (i) would be thoroughly *de dicto* in virtue of so relying on the *semantics* of  $\Box$  and  $\mathcal{A}$ , and (ii) would be intrinsically bound up in the notion that metaphysical necessity should be best understood in terms of an actual world together with infinite, additional (real or ersatz) possible worlds. I view the relevant sections of the introductory and concluding chapters, as refuting implication (i), in virtue of there being no obvious entailment from *de dicto* to *de re* necessity; I take up the issue of the correct understanding of modality in the concluding chapter, where I argue that 'actually' or  $\mathcal{A}$  are not genuine predicates of real, modal properties.

It is fairly clear then that mere epistemic necessity is not the same as the more objective (or at least intersubjective) and *modal*, rational necessity I am

suggesting as the analysans of apriority. As opposed to being a purely epistemic modality, rational necessity is more closely akin to the metaphysical, in virtue of the deliverances of *secunda facie a priori* reasoning being (fallibly) true—and the relevant circumstances obtaining of metaphysical necessity. That said, our target modality cannot simply be taken to be metaphysical qua *broad* logical necessity (given some of the coextensivity issues I mention throughout), so perhaps it is akin to, or just the same as, one of the narrower logical necessities; strict (i.e. formal) or narrow (i.e. definitional or conceptual) logical necessity.<sup>210</sup> In the following section, I discuss this possibility.

### 3.2 Rational and logical necessity

Even the most obvious cases of apriority we have discussed so far ( $p_5^*$ , and various mathematical examples such as  $\lceil 2 + 3 = 5 \rceil$ ), are fairly clearly not purely formal, logical necessities; the latter class of propositions (i.e. mathematics in general), very arguably being not reducible to any formal, logical system, following the discovery of Russell's paradox and Gödel's incompleteness theorems.<sup>211</sup> So, assuming that strict logical necessity cannot account for even the most basic *a priori* truths, I begin with narrow logical necessity. If *a priori* propositions are narrow logical necessities, they are at least logical necessities in some sense; and I take this sense to be *analyticity*. Concurring with Bonjour to a large extent however, I shall argue that analyticity cannot account for apriority; ultimately in virtue of the fact that the necessity of the 'lowest-level', explanatory, analytic truths would itself stand in need of further justification. This justification, I claim, comes in two forms; first, we *know* that logical necessities are necessary in virtue of their *rational* necessity (i.e. their *apriority* epistemically explains their analyticity); second, logical necessities *are* necessary in virtue of the natures of the relevant objects or properties (i.e.

---

<sup>210</sup> The phraseology of broad, strict and narrow logical necessity is borrowed from Plantinga 1974, as modified by Lowe 1998.

<sup>211</sup> See Russell 1902 and Gödel 1931. I realise there is a lot more that could be said here. As will become apparent, I view the prospect of an analysis of apriority in terms of strict or narrow logical necessity as remote; hence I hope to avoid spending time on side-issues, no matter how large and vexed.

logical necessities consist in the expression of metaphysically necessary relations between logical formulae—and definitions or concepts). So, analyticity cannot explain apriority; rather, rational necessity explains (and metaphysical necessity grounds) analyticity. This being the case, I shall argue in what follows that apriority should best be understood in terms of rational necessity, a kind of quasi-epistemic but, importantly, *modal* necessity, distinct from all fully epistemic and logical (as well as metaphysical) necessities.

Now, I realise that analyticity is a deep and vexed issue, its utility and definition being debated in recent philosophy, and its very existence strongly called into question by Quine.<sup>212</sup> This thesis largely concerns apriority and metaphysical modality, so analyticity, qua some kind of conceptual, definitional or semantic necessity, is only of tangential interest. In addition, since I claim that analyticity cannot explain apriority, what follows is, to a certain extent, an exercise in working through such failings. So, I very much assume (*pace* Quine) a working understanding of analyticity as narrow logical necessity; my main focus here being the claim that analyticity, even so charitably understood, cannot account for the *a priori*. That said, before making this move, it is necessary to provide a very brief historical discussion of the Kantian and Fregean conceptions of analyticity, especially since the latter largely underlies the claim that analyticity is narrow logical necessity. As I suggest, the main issue here is not the similarities or differences between accounts of the analytic (Kantian or Fregean for example); the issue is whether there is some broadly workable account of analyticity that might explain or ground the *a priori*.

Historically there are two main accounts of analyticity; the Kantian characterisation in terms of (covert) predicate containment,<sup>213</sup> and the Fregean analysis of substitution of synonyms (or definitional equivalents) *salva veritate*.<sup>214</sup> The latter of these (if it is clearly distinct from the Kantian account)<sup>215</sup> is most closely linked to the notion of narrow logical necessity, so

---

<sup>212</sup> Quine 1951. See Grice and Strawson 1956 for the rearguard defence. For more recent debate, see Peacocke 1992; Boghossian 1996, 1997; Katz 1998; Rey 1998, 2003; and Bealer 1998.

<sup>213</sup> Kant 1781, A6-7/B10-1.

<sup>214</sup> Frege 1884.

<sup>215</sup> Here is the issue of similarity: if the 'psychologistic' elements are removed from the Kantian conception (as I discuss it below) and if 'synonymy' amounts to little more than 'conceptual containment', the two accounts at least begin to converge.

this will form the main focus of the following paragraphs. Very briefly however, the Kantian version is as follows. Using a traditional, broadly Aristotelian, subject-predicate form, a proposition or judgement  $[A \text{ is } B]$  is analytic if the predicate  $B$  belongs to or is '(covertly) contained' in the subject  $A$ ; otherwise it is ampliative or synthetic.<sup>216</sup> For example, in the claim, 'All bodies are extended', the subject, 'body', supposedly includes the property expressed by the predicate 'is extended'; being extended would appear to be part of the meaning of the term 'body'. 'All bodies are heavy' however, is synthetic, in virtue of the fact that 'body' does not so include the property expressed by the predicate 'is heavy'. Kant continued to explain the notion of '(covert) containment' in terms of conscious, conceptual analysis of subject and predicate (A7/B12). The key point to appreciate is that since conceptual analysis of predicate inclusion is all that is required to understand analytic truths, if a proposition is analytic, it is *a priori*. This is an issue that Kant bestows upon the modern empiricist; if Kant is right that analyticity should be explained by way of apriority, then some explanation is needed by those wanting to account for the latter in terms of the former, if such an account is to avoid circularity (which is an issue I return to below). Finally, the 'conceptual containment' account is all that is required to generate synthetic *a priori* truths (such as those—allegedly—of mathematics, geometry and philosophy). Again, very briefly, Kant's main example of the synthetic *a priori*,  $[7 + 5 = 12]$ , is very plausibly *a priori* in virtue of being a truth of mathematics, and it is allegedly synthetic because '12' is not contained in the concepts of '7' and '5'.<sup>217</sup>

Frege saw various problems with Kant's notion of conceptual containment, notably in terms of the 'psychologistic' implications of consciously associated predicate inclusion. This being the case, Frege famously introduced his formal language of quantifiers, relations/functions, variables, arguments/constants and connectives. Using this language, together with the notion of substitution of synonymous terms (or definitional equivalents) *salva veritate*, Frege sought to

---

<sup>216</sup> Op. cit., A6-7.

<sup>217</sup> I gloss over many issues here. For some that I do not cover, see Bonjour's excellent discussion (1998, pp. 21-6). Bonjour's dismissal of Kant as a genuine rationalist, although perhaps idiosyncratic, is especially compelling (pp. 23-5); Kant's synthetic *a priori* solely concerning *phenomena* as opposed to *noumena*, suggesting that Kant is a forerunner of 'moderate empiricism', as opposed to an 'arch rationalist'.

provide an alternative account in terms of reduction of the problematic cases to clear ('strict' on my terminology) logical truths. For example, sticking with a more or less Kantian example,

(1) All bachelors are unmarried,

Kant would explain this in terms of the concept of 'bachelor' including that of (for instance) 'being unmarried'. Frege however notes that if a speaker  $s$  fails to associate the predicate 'is unmarried' with the subject term 'bachelor', then  $\emptyset$  will fail to be analytic (for  $s$ ). Thus, Frege proposed to analyse (1) as

(2)  $\forall x (Bx \rightarrow \neg Mx)$ .

Of course, it is not immediately clear how a simple substitution (of another function here) would render  $\emptyset$  analytic.<sup>218</sup> In order to remedy this situation, Frege argued that if one substitutes a synonymous definition of the term  $B$  (i.e. 'bachelor'), such as  $\neg M$  (e.g. 'an unmarried male (of marriageable age...)'),  $\emptyset$  becomes the more obviously analytic logical truth,

(3)  $\forall x (\neg Mx \rightarrow \neg Mx)$ .

As I indicate above, the key point here is not the similarities or differences between Kant and Frege but rather that there are the beginnings of a workable account of analyticity in terms of logical truth and necessity. The issue is historically vexed (and, as noted, deeply problematic post-Quine), so I merely intend to introduce the analytic qua narrow logical necessity as a potential analysis of apriority. So, setting aside the more problematic Kantian notion of conscious conceptual containment, in favour of Frege's more clearly formal account, the relevant question is; can analyticity, qua substitution of (definitionally synonymous) terms, *salva veritate*, account for the *a priori*?; that is, does apriority consist in some kind of narrow logical, conceptual

---

<sup>218</sup> This kind of worry (and problems with the notions of definition and synonymy) is what begins to motivate Quine's assault on analyticity.

(understood non-psychologically) or definitional necessity?

In response to these questions I now argue that analyticity cannot account for the *a priori*, in very brief virtue of (i) it being very likely that there are synthetic *a priori* propositions and, more importantly, following Bonjour's discussion of 'moderate empiricism'—the position that analyticity accounts for apriority—somewhat,<sup>219</sup> (ii) the order of explanation being the other way round—analyticity must be explained in terms of apriority.

As I suggest, I do not consider (i) to be the most pressing objection to moderate empiricism, since the issue of the synthetic *a priori* is vexed, perhaps because there are many competing conceptions of analyticity. That said, I view a broadly Fregean conception of the analytic<sup>220</sup> as, at least, workable. Thus the issue of the *synthetic a priori* is worth at least a brief consideration.

Considering (Bonjour's),

- (4) [No surface can be completely and uniformly red, and completely and uniformly blue at the same time],<sup>221</sup>

if this is an example of the synthetic *a priori*, then the analytic and the *a priori* are not coextensive; analyticity cannot account for apriority.

Assuming (4) to be *a priori* then, on both Kantian and Fregean conceptions of analyticity I think it is fairly clear that it is synthetic or, at the very least, not clearly analytic. On the Kantian conception of predicate containment, it is not at all clear that the predicate 'is red' includes the predicate 'is not blue'. Thus, on a Kantian account, (4) has the beginnings, at least, of being synthetic. Similarly, on the Fregean account, it is very difficult to provide a synonym of 'red' such that it is definitionally equivalent to 'not blue'. For example, parsing (4) as;

- (5)  $\forall x \neg(Rx \wedge Bx)_{t0}$

(where  $x$  ranges over surfaces,  $R/B$  stand for 'is completely and uniformly red/blue'), it is not at all clearly analytic. Similarly, substituting  $\neg R$  for  $B$ , on the

---

<sup>219</sup> Bonjour 1998, ch. 2.

<sup>220</sup> Supplemented perhaps with much work on the notion of sameness of meaning—either in terms of convention or of, for example, necessity in virtue of meaning.

<sup>221</sup> Amended from *op. cit.*, p. 29.

assumption that  $B$  can be defined such that it is equivalent to  $\neg R$  (e.g. assuming that 'red' can be defined as, for example, 'light having a wavelength in the region of 625-750nm', 'blue' would then be an example of 'not-red'), would be deeply problematic; such a definition of  $B$  qua  $\neg R$  would not include other colours such as yellow, thus it would very arguably be a poor 'definitional equivalent' of 'blue'.

That said, a clearer and more forceful objection (as suggested by the use of the phrase 'can be defined' in the previous paragraph) is that there is a clear modal force in operation in the very notion of definition and synonymy; we *can*, of course, define red to be such and such, so as to make the notion of analyticity viable, but it is just not clear what *the definition, the meaning* of red would be ('definition', by definition, being a somewhat conventional, linguistic matter).<sup>222</sup> This would suggest, at the very least, an element of gerrymandering in the notions of definition, sameness of meaning and therefore, the analytic—in the absence of earlier, modal presuppositions. This being the case, whilst I am nowhere near as suspicious of analyticity as is Quine, and whilst I take Frege's account to be the most viable and, at least workable, the modal force at work in our 'definition' of terms suggests that the notion of analyticity itself is somewhat gerrymandered and artificial—in the absence of further modal considerations. Ultimately, if it is an interesting modality, it is very likely to be grounded in some further, wider modality—such as the rational or the metaphysical. That is, if there is to be a viable notion of analyticity it must, I claim, rest on more clearly modal grounds, such as apriority or, even, metaphysical necessity. The point being, if the 'real' definition<sup>223</sup> (i.e. as opposed to the 'linguistic' definition) of 'red' is 'light having such and such a wavelength', then, presumably, nothing (i.e. no *thing*) can possess this property and not possess this property. As I suggest however, this claim has so many inbuilt ontological presuppositions that it can hardly be considered to be analytic. I claim that it would be metaphysically necessary, *a priori* and synthetic. Thus there are good grounds for holding that (4) is, after all,

---

<sup>222</sup> That is, 'linguistic definition', as opposed to any kind of 'real definition' in terms of necessities or essences. The latter, of course, would *not* be a matter of convention; rather it would be a matter of metaphysical natures or essences. See Fine 1994 in support of such claims.

<sup>223</sup> As per the previous note, I hint in the direction of Fine 1994 here.

plausibly synthetic. Having said all of this, and whilst there might be more obvious examples of the synthetic *a priori*,<sup>224</sup> perhaps given that the notion of analyticity is not entirely clear, although there might be a strong case for claiming that the synthetic *a priori* rules out the coextensiveness of the analytic and the *a priori*, I set this aside for present purposes.

This being the case, let us now consider the second and more important issue mentioned above; the general failure of analyticity as providing an account of apriority. Although this point is more important than the previous, it is made explicit by Bonjour (1998, ch. 2), hence I only present the bare details here. The basic theme is fairly straightforward; even assuming there is a central class of ‘obviously’ analytic truths (such as the strict logical necessities), the epistemic justification for such a class, would itself have to be *a priori*; thus analyticity cannot explain apriority. The point being, even on the most viable account of the analytic, the final explanation of analyticity is via definitional reduction to truths of logic, such as  $\lceil \neg(p \wedge \neg p) \rceil$ . Now, whilst it might be reasonably clear that such propositions are analytic, to provide an analysis of such analyticity in terms of the analytic would itself be an analytic and a highly trivial claim. In order to explain the analyticity (or logical necessity) of such truths, it is therefore necessary to appeal to the *a priori* (e.g.  $\lceil \neg(p \wedge \neg p) \rceil$  just is rationally and so logically necessary), and perhaps further, to metaphysical necessity (e.g. such propositions are logically necessary in virtue of being reducible to logical formulae that hold of metaphysical necessity). Thus (strict and narrow) logical necessity cannot explain apriority and rational necessity.<sup>225</sup>

All of this being the case, apriority cannot be explained by analyticity understood either in terms of narrow logical necessity or strict logical necessity. Given the existence of Russell’s paradox and Gödel’s incompleteness theorems, strict logical necessity cannot fully account for the most obvious

---

<sup>224</sup> Such as the various mathematical examples discussed throughout, which are presumably *a priori*, and given Russell’s paradox and Gödel’s theorems, not analytic qua not reducible to formal logic. There is a lot more to be said here but, as before, analyticity (and the synthetic *a priori*) is not central to this thesis, so I leave the details for another time.

<sup>225</sup> I also note approvingly Bonjour’s argument (1998, pp. 58-61) that the central thesis of moderate empiricism, that all *a priori* propositions are analytic, is itself deeply problematic. Qua central philosophical thesis (*arguendo*) it is presumably *a priori*—it is certainly difficult to claim that it is true and *a posteriori*, given (for example) the problem of induction. It cannot therefore be synthetic, on pain of contradiction; yet it is exceptionally hard to see how the claim could itself be analytic.

category of *a priori* truths (mathematics); given both the probable existence of synthetic *a priori* propositions and the artificiality of the very notion of analyticity, so-called narrow logical necessity cannot explain apriority either; and, most importantly, given that analyticity itself stands in need of *a priori* justification, it cannot explain apriority.

#### 4 Apriority as rational necessity

By way of concluding this chapter I now summarise my position on the relationship between apriority and modality, and provide further clarification of the sentence-proposition-world relationship.

In Chapter 3, I discuss the coincidence thesis (CT), that necessity coincides with apriority and contingency with aposteriority, using Goldbach's conjecture (GC), to show that apriority and aposteriority are not exhaustive with respect to epistemic justification (unlike metaphysical necessity-contingency which is an exhaustive distinction); thus disambiguating (CT) into four sub-theses:

- (CT1) apriority entails necessity;
- (CT2) aposteriority entails contingency;
- (CT3) necessity entails apriority;
- (CT4) contingency entails aposteriority.

Initially I suggest an apparent commitment—to (CT1) at least—but, ultimately, I deny any conjunction of all four (simple) theses, in the light of mathematical unknowables, such as (GC), and possible contingent equivalents (which I generically label (CGC)) refuting (CT3) and (CT4). I then discuss the contingent *a priori*, dismissing both the Kripkean examples, such as  $\lceil \text{stick } s \text{ is one metre long at } t_0 \rceil$  and indexical versions such as  $\lceil \text{I exist at } t_0 \rceil$  and  $\lceil \forall x (Fx \rightarrow \mathcal{A}(Fx)) \rceil$ , arguing, ultimately, that there is no such class of propositions. This being the case, I express an attenuated commitment to the following versions of (CT1):

- (CT1\*) if  $p$  is a genuinely *a priori* justifiable proposition, then  $p$  must assert a metaphysically necessary circumstance;

- (CT1p) if  $p$  is a *prima facie a priori* justifiable proposition, then  $p$  is a fallible guide to metaphysical necessity;
- (CT1s) if  $p$  is a *secunda facie a priori* justifiable proposition, then  $p$  is a stronger (but still fallible) guide to metaphysical necessity.

Despite my strict denial of the contingent *a priori*, understanding the failure of the various cases begins to suggest several theses I argue for and rely on throughout this (the previous and following) chapter(s); (i) that there is a three-way, sentence-proposition-world relationship; (ii) that propositions (and ultimately circumstances) are the bearers of apriority (and aposteriority), whereas sentences are only derivatively so; (iii) that apriority should best be understood as grounded in a kind of ‘epistemic’ necessity—rational necessity; and (iv) that circumstances or arrangements of objects and attributes, and then propositions, are what is metaphysically necessary and contingent in the first instance—sentences are only derivatively so.

In the present chapter (§2), I elaborate on claim (iii) that apriority is grounded in rational necessity, suggesting that apriority qua rational necessity is not obscure and is generally propositional and mediate. Furthermore, I claim that there is no *vicious* regress problem; if rational necessity is propositional ‘all the way down’, then it behaves like the metaphysical ( $\Box p \rightarrow \Box\Box p$  etc.); if, on the other hand, it ‘bottoms out’ in a direct, immediate, intellectual grasping, any apparent avoidance of the same regress problem is illusory. Nevertheless, since the problem is not so great and since rational necessity is less obscure and objectionable than (some faculty of) rational intuition, the former (plus mediate propositional apriority) is to be preferred.

In §3 I further elaborate on the claim that apriority is rational necessity, accounting for the latter by way of a negative discussion of standard, non-alethic, epistemic necessity, and of strict and narrow logical necessities. Apriority cannot be coextensive with, or grounded in, epistemic necessity as the latter is essentially subjective and non-modal, whereas rational necessity is (at least) intersubjective and alethic—albeit fallibly and defeasibly so; it is at least *modal*. Similarly, rational necessity cannot be any kind of logical necessity, since (following Bonjour to a large extent) this itself requires *a priori* justification

and so cannot account for apriority. All of this being the case, I conclude that apriority consists in, or is grounded in, a kind of necessity, which sits between the alethic, logical and metaphysical necessities; rational necessity. It is broader than (and epistemically explains) the logical; it is narrower and not coextensive with the metaphysical (given the failure of (CT3) and (CT4)); although as I suggest several times above (and expand upon in second part of the thesis), rational necessity (and modality in general) is perhaps explained, ultimately, by metaphysical necessity (and modality).

Now, I begin to explain this latter point presently (albeit very briefly) and, in more detail, in the following chapters, where I also claim that conceivability is grounded in metaphysical possibility. In a similar way to that in which I explain logical necessity—in terms of necessity in virtue of the natures of the logical laws and formulae—above, one might explain rational necessity as necessity in virtue of the natures of the relevant (sentences, thoughts and, ultimately) propositions, perhaps together with the rational assumptions and abilities of the relevant speaker or thinker. Thus, where a proposition ( $p$ ) is *prima facie a priori*, that is, *a priori-for-a-subject*, that subject explicitly (or tacitly) holds  $p$  to be necessary in the strongest sense; metaphysically necessary. In this way, *prima facie* apriority is a relatively weak, fallible guide to necessity. Similarly, where a proposition is more widely, *secunda facie a priori* (for a subject or group of subjects),  $p$  is a stronger, but still fallible, guide to metaphysical necessity. Ultimately, I claim, a proposition can only be genuinely *a priori* if it asserts a necessary arrangement of objects and attributes; genuine apriority is grounded in metaphysical necessity in virtue of the fact that the relevant  $p$  *must* (metaphysically) be the case (or rather asserts a circumstance that *must* obtain). There are, I suppose, two main strands of argument for this conclusion; the first as I hint above, being the claim that apriority consists in the rational grasping that the relevant circumstance must obtain (of metaphysical necessity); and the second being the extended argument against the possibility of the contingent *a priori* as presented in Chapter 3. As I suggest, the full details of the first argument (essentially that rational modality is grounded in metaphysical modality) go beyond what I have said so far, so I only begin to provide the groundwork for such claims here; I go into much more

detail in the following chapters, where I discuss rational contingency, aposteriority, rational possibility and conceivability.

Having said all of this, there remains one final set of issues—related to the previous—for the remainder of this chapter (and the following). Given the interim conclusions (i) to (iv) (from several paragraphs above), and especially given the sentence-proposition-world distinction, can we have reliable *a priori* access to metaphysical necessity, and if so, how? In particular, given  $\lceil a \text{ priori } p \rceil$  what *is* the metaphysical, modal status of  $p$ ?<sup>226</sup> To a certain extent I have already answered the first question; by understanding what proposition a sentence expresses and by grasping what circumstance that proposition asserts, we can have *a priori*, mediate access to the metaphysical. For example ‘ $p_5$ ,  $r_5$  and  $l_5$  are individually possible’ is a (fairly strong candidate) ‘*a priori*’ sentence in virtue of its expressing the (*secunda facie* but arguably genuinely) rationally necessary, *a priori* proposition  $p_5^*$  and so asserting the metaphysically necessary circumstance  $p_5^*$ ; my access to the necessity of the English ‘ $p_5$ ,  $r_5$  and  $l_5$  are individually possible’ then, is reliable inasmuch as I grasp the relevant proposition and circumstance. On occasion then, *a priori* reasoning is mediate, fallible and subject-relative but, as I suggest throughout, further, corrective *a priori* reasoning leads from the *prima* to the *secunda facie*, approaching the genuine. My access to  $p_5^*$  is fallible and mediate but, at least *secunda facie*, on further rational reflection, this is a good candidate, genuine, rationally necessary, *a priori* and so, arguably metaphysically necessary proposition and circumstance.

Similarly ‘ $2 + 3 = 5$ ’ is both *a priori* and metaphysically necessary, and my access to its necessity is (arguably extremely) reliable for exactly parallel reasons, *mutatis mutandis*. This said, the second (metaphysical modal status of  $p$ ) question is now the most pressing and interesting. In order to answer this question I return, for one last time, to propositions  $p_5^*$  and  $e_5/p_5$  (from previous chapters).

In Chapter 2 I claim that  $e_5/p_5$  is *prima facie a priori* but ultimately, given

---

<sup>226</sup> Again, these are issues that span both this and following chapters; hence their position here. The point being, the relationship between apriority and metaphysical necessity is the main topic of this chapter; those between aposteriority (rational contingency), conceivability (rational possibility), and metaphysical contingency and possibility, being the main focus of the following.

the existence of the Riemannian  $r_5$  and Lobachevskian  $l_5$ , not metaphysically necessary and so *not genuinely a priori*. The metaphysical contingency of  $p_5$  is fairly easy to see, given the possibility of  $r_5$  and  $l_5$  and given that both contradict  $p_5$ ;  $p_5$  cannot be necessarily true. That  $p_5$  is not *a priori* is a little more complex but the reasoning is similar. As I claim in Chapter 2 (and above), it is not  $p_5$ , or for that matter  $r_5$  and  $l_5$ , that are *a priori*, rather it is  $\diamond p_5$ ,  $\diamond r_5$  and  $\diamond l_5$ , and, given that all three are mutual contraries, none of  $p_5$ ,  $r_5$  or  $l_5$  (without the modal auxiliaries) can be genuinely *a priori*; if all three original propositions are justified *a priori* as being metaphysically *possible* and if all three are *a priori* contraries, none can be *rationally necessary*, i.e. *a priori*. So, perhaps *prima facie* apriority is all that we can have; that  $p_5$  is '*a priori*' would then only deliver the metaphysical possibility,  $\diamond p_5$ . Against this, there is what I have been calling '*secunda facie* apriority' and the possibility of 'further rational reflection' correcting *prima facie a priori* reasoning in a process akin to 'reflective equilibrium'. However, with a proposition such as

$$(p_5^*) \quad \diamond p_5 \wedge \diamond r_5 \wedge \diamond l_5,$$

I think we have (at the very least) a *secunda facie a priori* (given the further reasoning of Riemann and Lobachevsky) and so (less fallibly) metaphysically necessary proposition. Other examples (as noted by the likes of Bonjour)<sup>227</sup> of *secunda facie* (but arguably genuine) *a priori* propositions would be mathematical truths, non-controversial geometric truths (such as  $e_1$  to  $e_4$  of Chapter 2), logical necessities, some central truths of metaphysics (every object is necessarily self-identical, for potential example) and more general propositions such as the colour exclusion principle and the four-colour theorem (perhaps). So, I claim, *secunda facie a priori* propositions are extremely good (if fallible) guides to metaphysical necessity; but if  $p$  is genuinely *a priori*, it must be a metaphysically necessary proposition/circumstance.

Briefly returning to the 'how' question from a few paragraphs above, this is for the following reasons. *A priori* propositions such as  $p_5^*$  are rationally necessary propositions, which, being propositional in nature provide mediate

---

<sup>227</sup> Bonjour 1998, p. 2-6 and 100-6; cf. 2005, pp. 100-1.

access to metaphysical necessities. Although mediate, such propositions assert necessary relations, holding between objects and attributes; they assert necessary circumstances and this is knowable on an *a priori* basis—it is (fallibly) rationally necessary, I claim, that  $p_5^*$  (and similar) concern abstract, necessary entities such as lines and points, and attributes such as intersecting and being parallel (or not). So, whilst apriority qua rational necessity is not coextensive with metaphysical necessity *simpliciter*, successful *a priori* reasoning should result in knowledge of metaphysically necessary circumstances. The key point to understand is that apriority concerns rational necessity, whereas the *metaphysical* necessity of a proposition is determined by the necessity of the asserted circumstance; i.e. the holding of necessary relations between objects and properties.

Having so concluded that genuine *a priori* reasoning, justification or knowledge should result in metaphysical necessity, we now need to turn to the *a posteriori* and, more importantly, conceivability. If genuine apriority entails necessity, perhaps aposteriority entails contingency and, most importantly, perhaps conceivability entails possibility. These issues, and especially the latter, are the topics of the next part of the thesis.

## PART II

### RATIONALITY AND MODALITY

# Chapter 5

## The Necessary *A Posteriori*, Conceivability and Possibility

### 1 Introduction

In previous chapters I discuss the relationship between the *a priori* and modality. Specifically I claim that apriority should be understood in terms of rational necessity and that this modality is further grounded in the metaphysical; strictly,  $p$  is justifiable *a priori only if*  $p$  is necessary. I also suggest an account of conceivability in terms of '*a priori* (or rational) possibility'. In this and the following chapters I want to conclude the discussion of the relationship between the rational and the modal; I want to understand whether (CT2) holds and whether there are necessary *a posteriori* propositions. Moreover, and most importantly, if there are necessary *a posteriori* propositions, given the importance of the conceivability-possibility form of reasoning in general, I want to know what relationship holds between conceivability and possibility. If, for example, there are necessary propositions only knowable on an *a posteriori* basis, are the negations of these propositions conceivable, or is there any sense of 'conceivability' such that it entails (or is a strong guide to) possibility?

As in previous chapters, my main motivation is to understand the relationship between the rational and the modal, rather than to provide

detailed exegesis. Clearly however, a discussion of conceivability, possibility and the necessary *a posteriori* can hardly proceed without some consideration of the work of Kripke. In particular, Kripke spends much of *Naming and Necessity* arguing that there are necessary *a posteriori* propositions (or sentences)<sup>228</sup> and that the necessary *a posteriori* poses a serious problem for any argument that aims to proceed from conceivability to possibility.<sup>229</sup> The point being, if *p* is necessarily true yet only knowable on an *a posteriori* basis, it would appear that  $\neg p$  might be ‘conceivable’ (i.e. ‘*a priori*’ or ‘rationally possible’) yet metaphysically impossible; conceivability might be a very poor guide to metaphysical possibility. Whilst it is difficult to come to a complete understanding of Kripke’s position here without a detailed discussion of the arguments of *Naming and Necessity*, the necessary *a posteriori* has received sustained discussion in the literature, so a fully exegetical treatment would require detailed discussion of a lot of secondary material. Given that I want to advance a novel and interesting thesis on rationality and modality, I aim to avoid detailed exegesis in much of what follows. In place of this, I discuss a generic, Kripkean argument for the existence of the necessary *a posteriori* (§2), before advancing my own response to the (alleged) phenomenon (§§3-4). I shall argue that, strictly, there are no necessary *a posteriori* propositions; if a proposition is essentially justified on an *a posteriori* basis, that proposition must be (or assert a) contingent (circumstance). Since there is a lot to be unpacked here however, I spend some time disambiguating, as much as arguing for the claim that there are no genuinely necessary *a posteriori* propositions. In particular, I suggest that alleged necessary *a posteriori* sentences analyse out into (at least or at best) two propositions, one necessary and *a priori*, and

---

<sup>228</sup> The many discussions of the necessary *a posteriori* are too numerous to cite, but see in particular, Kripke 1980, pp. 100-5, 107-15 and 140-55.

I am well aware that Kripke is “unsure that the apparatus of ‘propositions’ does not break down in this area” (1980, p. 21).

<sup>229</sup> Kripke does not put it this way but see especially Kripke 1980, pp. 102-5, 108-9, 140-4 and 150-3. In particular, the discussions of ‘qualitatively identical epistemic situations’ and things that ‘might have turned out’ otherwise, are, to my mind, discussions of ‘conceivabilities’ (*epistemic* possibilities) which are (as described) not genuine, metaphysical possibilities; hence the apparent problem for conceivability-possibility reasoning. Having said this, there is arguably a strong sense in which Kripke is saying that (genuine) conceivability entails possibility, since whilst a ‘qualitatively identical epistemic situation’ (such as that represented by ‘Hesperus is not Phosphorus’) might be ‘*epistemically* possible’, it is, in fact a misconception; if Hesperus is Phosphorus, this is necessarily so and any conceiving or imagining to the contrary must therefore be mistaken.

another *a posteriori* but contingent (§3). I then present an apparent second argument for the phenomenon and my response to this (§4), before an interim conclusion concerning the necessary *a posteriori*, conceivability and possibility (§5).

As I shall suggest throughout, the issue of conceivability-possibility reasoning, although deeply related to that of the necessary *a posteriori*, requires a consideration of Frege and Kripke's problems before a complete solution can be offered. This being the case, although I present conclusions towards the end of the present chapter, these are to be taken in conjunction with those of the following chapter. In addition to this, since the notion of conceivability is clearly very relevant to the present and following chapters, before beginning any of the aforementioned tasks, let me first make some preliminary remarks concerning conceivability, epistemic and rational modalities.

Very much in line with what I say about apriority, epistemic and rational necessities in the previous chapter, I now want to insist on a clear bifurcation between conceivability qua *a priori* (or rational) possibility and so-called 'conceivability' qua mere, subjective, epistemic possibility (i.e. what might be called 'conceivability-for-all-I-know').<sup>230</sup> As throughout the previous chapters, where the motivation for the *prima facie*/genuine (or at least *secunda facie*) apriority distinction traded on the difference between a proposition's being justified (or not) on further rational reflection, the present distinction is grounded in the claim that whilst the negation of a necessary truth might appear 'conceivable' (for all the subject knows—i.e. epistemically possible), strictly, if *p* is necessary, the negation of *p* is not a genuine possibility; thus  $\neg p$  is not conceivable. The point being, if conceivability is best understood as being grounded in rational and so metaphysical possibility, and if *p* is metaphysically impossible, then *p* is strictly, rationally impossible or inconceivable; if *p* is impossible, it is not genuinely possible to conceive of a situation where *p* is the case—it is not possible to conceive of the relevant arrangement of objects and attributes. As with the *a priori* itself, if *p* is merely epistemically necessary (or possible), it is not genuinely *a priori* (or conceivable); only if *p* is metaphysically

---

<sup>230</sup> For a useful and interesting survey of some of the issues of conceivability and possibility see Gendler and Hawthorne 2002 (esp. pp. 3-12); cf. Van Cleve 1983; Yablo 1993; and Chalmers 2002. On the specific issue of conceivability and epistemic possibility, see Fiocco 2007.

and *rationally* necessary (or possible) can it be *a priori* (or conceivable). I make much of such claims in what follows, so for now it will suffice merely to note that there are potentially two separate notions of ‘conceivability’ in the area; one based in epistemic possibility (which might be called ‘weak’ conceivability) and one based in the rational (‘strong’, or *just* conceivability).<sup>231</sup>

## 2 A Kripkean argument for the necessary *a posteriori*

In many ways, the necessary *a posteriori* can be seen as an explicit response to Frege’s problem; specifically concerning the possibility of true but informative identity statements. Since Frege’s discussion in ‘Sense and Reference’,<sup>232</sup> it was widely held that if the sole semantic or cognitive value of a name is its reference, then a true identity statement such as

(1) ‘Eminem is Slim Shady’,

should express the same proposition as the true but non-informative

(2) ‘Eminem is Eminem’,

i.e. something like the necessary, *a priori* and presumably analytic proposition,

(2a)  $\lceil e = e \rceil$ .

The point being, if names are thoroughly ‘Millian’—i.e. if they are ‘mere tags’<sup>233</sup>—then a statement of the form ‘ $a = b$ ’ should be cognitively and semantically equivalent to one of the form ‘ $a = a$ ’, which, at least superficially, seems deeply problematic. Frege, of course, responded to the Millian semantic theory by proposing his well-known sense-reference distinction; whilst (2) is analytic and *a priori*, (1) is informative and *a posteriori* in virtue of the names

---

<sup>231</sup> I am aware that both Van Cleve (1983) and Chalmers (2002) use similar ‘strong’ and ‘weak’ terminology. My usage is closer to Van Cleve’s than to Chalmers’s.

<sup>232</sup> Frege 1892.

<sup>233</sup> To borrow Barcan Marcus’s (1961) phrase.

'Eminem' and 'Slim Shady' contributing their 'senses' as modes of presentation of the reference; the object, Marshall Mathers III. Very briefly then, the full 'meaning' of a name must be understood in terms of both sense and reference, with the former determining the latter, and (1) must express a proposition distinct from (2a); namely,

$$(1a) \quad [e = s].$$

Famously, in *Naming and Necessity* Kripke presents three sets of arguments—the modal, epistemic and semantic<sup>234</sup>—designed to show that names cannot mean the same as their (allegedly) descriptive senses and that speakers cannot simply associate such senses with names, whether or not sense determines or fixes reference. This being the case, it might appear that Kripke is urging a return to the pre-Fregean, and specifically the Millian theory of semantics adverted to above, whereby a name's only semantic and epistemic contribution is its reference.<sup>235</sup> In light of this, the Kripkean needs to say something about the apparent informativeness and aposteriority of identity statements such as (1) and associated propositions such as (1a).

One of the main aims of the necessary *a posteriori* then, is to motivate a bifurcation of metaphysical and epistemic modalities so as to show just how identity statements involving co-referring names assert necessary, yet informative and *a posteriori* identities. In brief detail, the outline of the Kripkean argument for the necessary *a posteriori* is as follows:

- (A) Identity is metaphysically necessary; for any (objects)  $x$  and  $y$ , if  $x = y$  then necessarily  $x = y$  (formally:  $\forall x \forall y (x = y \rightarrow \Box x = y)$ ).<sup>236</sup>
- (B) Ordinary proper names are 'rigid designators'; a name ( $n$ ) refers to the same object in all counterfactual situations.<sup>237</sup> In *de re* terms, concerning objects and their attributes, names function like logical

<sup>234</sup> Here I follow Salmon 1981.

<sup>235</sup> Of course that Kripke "never intended to go so far" (1980, p. 20) is no bar to some of his followers doing just that.

<sup>236</sup> The most explicit appearance of this claim is at Kripke 1971, p. 67; but cf. 1980, pp. 3-5 and 97-110.

<sup>237</sup> I use this phrase (pending some discussion of possible worlds in the final chapter) in line with Kripke's advice at 1971, p. 82.

constants; so  $n$  and  $m$  are substitutable for  $x$  and  $y$  in (A).

- (C) Given (A) and (B), true identity statements involving proper names express metaphysically necessary propositions. Given (B), if  $n = m$  then  $n$  and  $m$  both refer to the same object. So, given (A) and (B), if  $n = m$ , then necessarily  $n = m$ .<sup>238</sup>
- (D) Despite (C), since it is possible for a speaker to know that  $n = n$ , without thereby knowing that  $n = m$ , identity statements such as the latter (and (1)) are not knowable on an *a priori* basis; they require empirical, *a posteriori* justification.
- (E) Given (C) and (D), statements such as (1), ‘Hesperus is Phosphorus’ and ‘Cicero is Tully’<sup>239</sup> are examples of the necessary *a posteriori*. Despite appearing to express only the necessary proposition (2a), ‘Eminem is Slim Shady’ is only knowable on an *a posteriori* basis. (1) then appears to express a metaphysically necessary proposition that is only knowable on an *a posteriori* basis, (1a).
- (F) As a corollary to (E), the existence of the necessary *a posteriori* highlights a clear bifurcation in the metaphysical (modal) and epistemic domains. The necessary, contingent, possible and impossible are modal categories belonging to the subject of metaphysics. The *a priori* and *a posteriori* concern knowledge and justification; they belong to epistemology.

Now, my main topic is the relationship between rationality and modality; hence theses (E) and (F) are particularly interesting. In terms of modality, aposteriority and conceivability, if the necessary *a posteriori* is a genuine

---

<sup>238</sup> Kripke 1971, p. 78 (rigid designation) and p. 89 (rigid identity statements) are two of the most explicit statements of theses (B) and (C); cf. 1980, pp. 48ff and 97-110. I realise there is an issue concerning the strength of the designation here; does a name refer to the same object in all situations *tout court* or only all situations in which that object exists? For present purposes I assume ‘weak’ rigidity, whereby a name only refers to the same object where that object exists; thus it is a conditional such as ‘if  $n$  and  $m$  exist, then if  $n = m$ , necessarily  $n = m$ ’ that is putatively necessarily true, given the argument from (A) to (C). See McLeod 2008a for a good discussion of potential problems with even the ‘weak necessity’ reading of (1) and the like.

<sup>239</sup> Or, assuming it is even an identity statement, ‘water is (composed of)  $H_2O$ ’—but there is a big question here as to whether identity is ever the same relation as composition. There are, of course, several other big questions, such as whether water *is* composed of  $H_2O$ ; the nature (and necessity) of scientific identity/composition statements involving elements (never mind compounds); and, whether ‘water’ and ‘ $H_2O$ ’ are ‘rigid designators’. As some of these issues are sufficiently vexed with respect to ‘simple’ names, I focus on the latter presently.

phenomenon, (E) and (F) pose a serious threat to the coincidence thesis discussed in previous chapters. Moreover, (E) has serious implications for patterns of reasoning from conceivability to possibility. In detail, if and where a necessary identity is established on an *a posteriori* basis (as (1) is alleged to be), the negation of that identity (e.g. 'Eminem is not Slim Shady') appears to be entirely possible on an *a priori* basis—i.e. it appears to be rationally possible or conceivable. Given that the original statement expresses a necessary proposition however, that negation must be impossible. Hence (allegedly) conceivability does not entail possibility.

Before analysing any of this in detail, let me first indicate what I want to discuss in (and what I leave out of) the remainder of this and the following sections. I have already discussed (F) with respect to the contingent *a priori* in Chapter 3; I now discuss (F) in a little detail *vis-à-vis* the necessary *a posteriori*; only returning to the coincidence thesis and (CT2) in particular, following the discussion of Frege and Kripke's puzzles, towards the end of the following chapter. My main concern then is (E), the necessary *a posteriori* and its implications for conceivability and possibility. This being the case, I want to focus on the argument for (E); the *modus ponens*-style argument from (A) to (C) (this section), together with thesis (D) (§3). In the remainder of this section then, I question whether the theses of the necessity of identity and rigid designation are sufficient to show that identity statements involving proper names express necessary propositions.

Since other philosophers have rejected explicitly Kripkean arguments for (A), (B) and (C),<sup>240</sup> I shall only touch on the details of those debates below. With respect to the argument for the rigidity of names, a full discussion of this would involve a diversion into Kripkean (and 'anti-descriptivist' versus 'descriptivist' semantics). This debate is live,<sup>241</sup> but given my conclusions below, I feel that the

---

<sup>240</sup> Versus the *argument for* (A): Lowe 1982, 2002, ch. 5, 2005 and 2007a. Versus (B): Chandler 1975; Zemach 1976; Mellor 1977; Searle 1983; and Evans 1973 (especially the 'two babies' case at pp. 11-12). Versus (A) and (B) (i.e. versus (C)): Gibbard 1975; Chandler 1975. I do not mean to endorse any of these positions (in particular that of Gibbard 1975, which to my mind rests on a conflation of identity and composition).

<sup>241</sup> On the 'descriptivist' side, see some of the 'Versus (B)' references in the previous note, and more recently, (i) causal-descriptivists such as Evans 1982; Kroon 1987, 2004; Braddon-Mitchell 2004; (ii) 'rigidified descriptivists' such as Dummett 1991; Stanley 1997; Nelson 2002; Pettit 2004; and (iii) 'two-dimensionalists' such as Stalnaker 1978; (arguably) Evans 1979; Chalmers 1996, 2002, 2006a, 2006b; and Jackson 1994, 1998, 2004.

details are neither deeply relevant nor to the point, since one must do one's ontology in advance of deciding whether names are rigid or otherwise; one must do metaphysics in advance of semantics.<sup>242</sup> So, I shall not be discussing Kripke's positive 'theory' of reference in great detail. What I shall discuss are (A) to (C) from the perspective of their use in the argument for (E).

Whilst discussing (E) I begin to raise some questions as to the tenability of (D). In §3 I go on to claim that there is a strong sense in which apparently necessary *a posteriori* sentences express more than one relevant proposition; and, on further analysis, such propositions are either necessary and knowable *a priori*, or *a posteriori* but contingent. As indicated, my main concern is rationality and modality, and specifically here, conceivability-possibility arguments in particular. This being the case, after completing my analysis of the necessary *a posteriori* (§4), I then discuss further the alleged problem that the necessary *a posteriori* poses for conceivability (§5). As I indicate in the introduction however, a full response to the latter problem requires a consideration of Frege and Kripke's puzzles; hence a complete conclusion must wait until after that discussion.

Beginning with (A) and (B) then, note that in (B) I try to make it clear that there is slightly more required to generate (C) than just the simple claim that names are rigid designators. If this is all that (B) stated then the argument for (C) would require an additional premise such that rigid designators are logically proper names or constants, thereby allowing substitution for *x* and *y* in (A). Of course, there is an issue in the background here; namely Frege's problem. Notoriously, Kripke is exceptionally careful not to commit to a solution or dissolution of the problem in *Naming and Necessity*. He does, of course, discuss it in his related 'A Puzzle about Belief',<sup>243</sup> once again appearing to endorse his 'propositional breakdown' view,<sup>244</sup> whereby there is no clear, obvious solution to the problem. This issue remains in the background in the remainder of this section; as advertised several times already, I return to it in the following chapter.

---

<sup>242</sup> On which point I am in broad agreement with philosophers such as Brody 1980, Salmon 1981, 2003, Lowe 1998, 2006 and Oderberg 2001, 2007.

<sup>243</sup> Kripke 1979.

<sup>244</sup> See n. 1.

So precisely how does the claim that names are rigid designators figure in the argument for (C) (and (E))? In order to understand this we need to set out the 'A-argument' in a little more detail:<sup>245</sup>

- |      |   |   |
|------|---|---|
| (A1) | $a = b$   | [Assumption concerning object(s) $a$ , $b$ ]                                      |
| (A2) | $\forall x \forall y (x = y \rightarrow \forall F (Fx \leftrightarrow Fy))$ | [Leibniz's Law, where $x$ and $y$ are objects and $F$ quantifies over properties] |
| (A3) | $\forall x \Box x = x$  | [The necessity of (self-)identity]  |
| (A4) | $\Box a = a$  | [Particular instantiation on (A3)]  |
| (A5) | $a = b \rightarrow \forall F (Fa \leftrightarrow Fb)$                       | [Particular instantiation on (A2) via (A1)]                                       |
| (A6) | $\Box a = b$  | [ <i>Modus ponens</i> on (A5), (A1) and (A4)]                                     |

Therefore,

- (A7)  $a = b \rightarrow \Box a = b$

The main problem with this argument is the *modus ponens* at (A6), and crucially, the premises (A4) and (A3); the latter being deeply equivocal.<sup>246</sup> If (A4) asserts the necessity of self-identity (as I suggest in the parenthesis for (A3)), then all that should follow from (A5), (A1) and (A4) is the *trivial*, necessary self-identity,  $\Box b = b$ . That is, the *modus ponens* should be as follows: if  $a$  is identical to  $b$ , then  $a$  and  $b$  share all properties;  $a$  is identical to  $b$ ;  $a$  is necessarily self-identical, so  $b$  is necessarily self-identical. In order to obtain the *substantive* conclusion (A6) however (i.e. that  $a$  is *necessarily identical to b*) (A4) must be read as asserting the non-trivial, substantive premise that object  $a$  has the property of *being necessarily identical to a*. That is, in order to entail the non-trivial essentialism required by (A6), (A4) must be read as asserting a deeply non-trivial property; something like an individual essence or haecceity. All of this being the case, we ought not to accept the argument for (A), in the

---

<sup>245</sup> My discussion here borrows from both Kripke's presentation (1971, 1980, p. 3) and Lowe (1982, 2002, ch. 5).

<sup>246</sup> As urged by Lowe 1982.

absence of the substantive metaphysics required for the relevant interpretation of (A4).<sup>247</sup>

As suggested then, for the A-argument to generate its substantive metaphysical conclusion, some substantive metaphysics must occur in the premises. Thus we must see whether the argument can be ‘rescued’ by means of thesis (B). The point being, whilst the A-argument might be accused of attempting to derive metaphysics from purely logical premises, perhaps (B) can be made to import the relevant metaphysical assumptions. In response to this I aim to show that there are three main interpretations of thesis (B) such that it is either (i) *a priori* and too logico-semantic to do the required metaphysical work; (ii) *a priori* and sufficiently substantive but thereby reliant upon the required metaphysics; or (iii) similarly substantive but *a posteriori*. Unfortunately for the Kripkean, none of these options can steer between the Scylla and Charybdis of trivial, logico-semantic premises failing to support substantive, metaphysical conclusions and substantive (but unargued-for) metaphysics being imported to generate the relevant conclusions. In this way I aim to support a line of thought I have suggested several times already; that you cannot generate substantive, metaphysical conclusions from trivial logico-semantic premises—you only get metaphysical conclusions from metaphysical premises.<sup>248</sup> In particular, I aim to show that thesis (B) does attempt to import the relevant metaphysics,<sup>249</sup> but that this is a largely tacit and unargued-for set of assumptions behind the thesis of rigid designation. In response to all of this, my account (of both the contingent *a priori* and the necessary *a posteriori*) is sufficiently metaphysical (and epistemic) to do the work required to explain the relevant, alleged phenomena; i.e. to generate the relevant metaphysical (and epistemic) conclusions.

---

<sup>247</sup> For what it is worth, I do accept the necessity of identity *for objects*, but think that this *is* a deeply, non-trivial (but *a priori*) essentialist thesis about the nature of objects; and importantly, a thesis that is not derivable solely from trivial, logical premises such as (A2) and (A3).

<sup>248</sup> I echo Lowe (2007a, p.31 in particular) here.

<sup>249</sup> Following Salmon 1981, 2003 and Lowe 1982, 2005, 2007a and 2007b to a certain extent. Having said this, Salmon claims that the “theory of direct reference...has at least some *essentialist* import” (1981, pp. 82-3). He goes on to claim that it implies only the “trivial” essentialism whereby (for example) Hesperus has the property of *being Phosphorus*. To my mind however this is precisely the kind of property (i) that is not derivable from simple logico-semantic premises and (ii) is non-trivially essentialist. This being the case, I agree with Salmon in spirit but very much not in the details; the rabbit Kripke attempts to pull out of the hat is more substantive than the one Salmon envisages.

So, can thesis (B) be made to support (A) by plugging the hole in the foregoing A-argument? The first thing to note is that if we are to move from (A) to (C) (in the original argument), then we need to move from talk of the necessary identity of *objects* in (A) to that involving rigid designators in (C). Here, my claim is that the main function of thesis (B) (that names are rigid designators) is to replace premise (A1) above, with a new premise concerning *rigidly designating names*:

(B1)  $a = b$  [Assumption concerning rigidly designating names  $a$  and  $b$ ]

The problem with this is that there appear to be only three options as to how (B1) would remedy the A-argument. That is, there are effectively only three main options as to the philosophical force of the thesis of rigid designation, (B), with respect to its use in the argument for the existence of the necessary *a posteriori*. First, (B) could be an (allegedly) *a priori* and trivial, logico-semantic thesis, such that (B1) asserts the identity of *the object rigidly designated by 'a'* with itself;

(B1`)  $a = a$ .<sup>250</sup>

What I am suggesting is that if the thesis of rigid designation is purely (allegedly) *a priori*, and purely based in logico-semantic premises and assumptions, then there is a strong sense in which the claim that  $a$  (i.e.  $b$ ) refers to the relevant object ( $a$ ) rigidly can only be viewed as a kind of trivial, linguistic stipulation; names are (by definition?) rigid designators that refer to the relevant objects directly and in all world-states (in which they exist). The point being that if we introduce a term  $a$  (or  $b$ ) as rigidly designating some particular  $a$ , and if we then insist that this is all there is to the meaning of  $a$  (or  $b$ )—i.e. if we insist that this is what it is to be a rigid designator—then, whilst thesis (B) might be made to smooth the passage from talk of names to talk of objects in the A-argument, we are in danger of espousing a very strong Millian thesis with respect to names. That is, we reduce the apparently informative

---

<sup>250</sup> I make the same name/**object** distinction as in chs. 3 and 4—this continues throughout.

(B1) to the trivial (B1`)—and Frege's problem looms large. Indeed, this option has the additional disadvantage of potentially rendering the A-argument invalid (depending on whether it is (B1) or (B1`) that we take as the relevant premise). If it is (B1`), then the *modus ponens* at (A6) simply does not follow, since there is now no mention of the rigidly designating term 'b' in the relevant supporting premise. If on the other hand we are to take (B1) as the key premise (yet as asserting (B1`)), the argument would be valid, but, very importantly, some extremely nimble argumentative moves would need to be made so as to explain the relevant substantiveness of (B1), and of the argument as a whole, in view of the apparent triviality of (B1`). The point being, if the thesis of rigid designation is purely logico-semantic, the (alleged) apriority (and triviality) of the thesis looks very much like rendering it a linguistic stipulation that names rigidly refer. This being the case, as much as (B1`) might smooth the passage from (A) to (C), in talking of such rigid names, it very much looks as though we are just talking about the relevant, rigidly designated objects. Thus we are (i) in danger of collapsing back into an extremely strong Millianism, which, paradoxically (ii) might then invalidate the A-argument, in addition to rendering the question as to whether *ordinary* proper names are rigid designators as an empirical, rather than an *a priori*, matter.

As I suggest above then, there is perhaps a tension between (B) qua *a priori*, trivial and logico-semantic thesis and qua *a priori*, substantive, metaphysical one. Now, the thesis of the necessity of identity is a very substantive, metaphysical conclusion (potentially leading to the existence of the necessary *a posteriori* and substantive essentialisms, for example); if (B1) is a mere linguistic stipulation, it is difficult to see how such substantive conclusions would follow. Moreover, it is even debatable that such a thesis could be more widely (i.e. interestingly and non-trivially) '*a priori*'; it is hardly rationally necessary, or knowable independently of experience, that ordinary names do operate in the advertised manner—hence my suggestion that (B1) is not so clearly *a priori*, trivial and stipulative. Instead of this, if (B) is to do the required work of strengthening the A-argument, it must link names and their rigidly designated objects in a deeply non-trivial and non-stipulative manner. Moreover, if (B) is to be a philosophical thesis, then (on a certain, traditional

understanding of philosophy) it ought perhaps to be an *a priori* justifiable thesis. This leads directly to the second (and third) option(s) for the correct interpretation of (B)/(B1).

Second then, (B) could be an *a priori* but *substantive* philosophical thesis, such that (B1) asserts what it appears to assert (that  $a = b$ ), but that it *just is a priori* that names are so closely tied to objects that the former are rigid designators of the latter. Now I must admit that this reads clumsily, which is not surprising given the difficulty of the idea being expressed; i.e. an *a priori* thesis that the rigid names  $a$  and  $b$  refer to the same object  $\mathbf{a/b}$  but that this/these are sufficiently distinct such that (B1) does in fact assert the non-trivial proposition  $\lceil a = b \rceil$  (as distinct from  $\lceil a = a \rceil$ ). The point being, as I suggest throughout, if thesis (B) is to justify the move from (A) to (C) in the original argument, names have to be sufficiently rigid so as to justify the move from an object-involving premise, (A), to a name-based conclusion, (C), whilst at the same time being sufficiently, semantically ‘fine-grained’ so as to avoid issues such as Frege and Kripke’s puzzles—not to mention the related problems of opacity, empty reference and true negative existentials. So, assuming the relevant theoretical explanation, might this second option allow there to be a sufficiently strong semantic tie so as to support the relevant argumentative move, whilst allowing a sufficiently weak tie so as to avoid the traditional, semantic problems? In short, what is at issue is the original problem of the interpretation of (A4) as ascribing the property of *being necessarily identical with a* to the object  $a$ . The point being, if rigid designation does shore up the relevant argumentative move, then it is difficult to see how names can be viewed as anything other than rigid, logical constants. Whilst this kind of assumption might (assuming certain, rather essentialist theories about objects) bolster the interpretation of (A4) as concerning the relevant, substantive, essentialist property, it would, at the same time, run straight into Frege’s problem; names would be so rigid that sentences such as ‘ $a = b$ ’ would assert nothing more than the proposition  $\lceil a = a \rceil$ . What I am suggesting is that the kind of thesis required here would involve several large, metaphysical assumptions about names, designation, propositions and the nature of objects. Specifically, there would need to be a strong distinction between the original, rigid, name-involving sentence and the

proposition (and so circumstance or arrangement of objects and attributes) asserted thereby. This is precisely the kind of theory I try to motivate in both the current and previous chapters, but (I readily admit) this would be a substantive, metaphysical (as opposed to a purely logico-semantic) thesis. The general point being, if (B) sufficiently ties (rigid) names to the relevant, designated objects, then it is difficult (without some quite deep metaphysics) to see how  $\lceil a = b \rceil$  does not simply assert  $\lceil a = a \rceil$  (or  $\mathbf{a} = \mathbf{a}$ ); it is difficult to see how Frege's problem is avoided.<sup>251</sup> Now I don't want to dwell on this issue presently, since I return to Frege's problem below. Suffice to say, some serious metaphysical manoeuvres are required in order to render the A-argument successful. In short, the argument either attempts to derive serious metaphysics from trivial logic and semantics (unsuccessfully) or it imports the serious metaphysics (without the required philosophical argument).

Quite apart from the difficulty of offering a purely *a priori*, logico-semantic thesis that will do all of the required work, it is also not entirely clear that (B) is a purely *a priori*, philosophical thesis. On the contrary, I think that work in this area is more an issue for psycho- or socio-linguistics, as opposed to belonging purely to the domain of (*a priori*) philosophy of language—or especially of metaphysics. The point being, in order to see whether names are rigid, as much as intuitions either side are telling, we might also need to look at how people tend to use names; and here, the evidence, although often favourable to (B), suggests that names can be used non-rigidly. The third and final option with respect to (B) then, is that it might be a substantive but *a posteriori* thesis. This option might allow (B1) to assert the proposition  $\lceil a = b \rceil$ , thereby avoiding some of the traditional problems already mentioned. This would only be the case however, providing there were adequate theoretical explanation so as to allow a sufficiently loose tie between names and objects, such that (B1) did not express the *a priori* proposition  $\lceil a = a \rceil$ . The problem with this version of (B) however is with its epistemic status as *a posteriori*. The point being, if this is all there is to the thesis of rigid designation, then (i) the aposteriority of the thesis

---

<sup>251</sup> Clearly, some philosophers (such as Salmon 1986 and Soames 2002) also acknowledge this point but offer attempted solutions to Frege's problem whereby the 'two' propositions do, effectively, say the same thing, such that  $\lceil a = b \rceil$  is, in some sense necessary and *a priori*. Salmon 1986 is clearer on this point; I discuss Soames in more detail below.

would be in danger of rendering it philosophically unilluminating—i.e. *some* names just happen to be (contingently?) rigid designators—and (ii) the ‘sufficiently loose tie’ between names and their references, generated by the aposteriority (and so the already suggested *contingency*) of the thesis, would be in danger of challenging the putative *necessity* of identity for names. Thus, if the upholder of rigid designation is seeking to use (B) to justify the move from (A) to (C), it must be viewed as a philosophically interesting (that is necessary, *a priori* yet *substantive*) thesis.

All of this being the case, although the first and second options are the most philosophically interesting versions of thesis (B) (in virtue of being broadly *a priori* and arguably necessary theses, as opposed to empirical generalisations), the first is too trivial to generate substantive metaphysical conclusions, whilst the second, albeit sufficiently strong thesis, imports unsupported metaphysical premises and assumptions. Therefore, the thesis of rigid designation alone is not strong enough to justify the move from (A) to (C) (and so conclusion (E)).<sup>252</sup>

### 3 How many propositions?

So far I have resisted the main argument for (A), rejected the idea that (B) can combine with (A) to generate (C) (and so (E)) and suggested that the idea that names are (interestingly, necessarily, philosophically) rigid designators is very problematic. Might there not still be a case for the existence of necessary *a posteriori* identity statements involving names? Let us return to example

- (1) ‘Eminem is Slim Shady’.

---

<sup>252</sup> Kripke (1980, p. 49) remarks that those who argue that we need to make sense of transworld identity in advance of insisting that names are rigid designators “have precisely reversed the cart and the horse”. In response to this, whilst I do think that we need to make sense of modality (metaphysics) in advance of rigid designation (semantics), I would not urge a pre-requisite understanding of ‘transworld identity’ since I am sceptical of the notion of a ‘possible world’ and so of ‘transworld identity’—the former of which I return to in ch. 7. To repeat a theme, to derive the necessity of identity for objects (metaphysics) from the thesis of rigid designation (semantics) *is* precisely to reverse the cart and the horse! So there is a sense in which I follow Brody (1980, pp. 107-12) here, in that I claim that if it is to be made to do the work it is intended to do, the thesis of rigid designation must be seen as making certain strongly essentialist assumptions.

Here, the friend of the necessary *a posteriori* might argue that (1) is clearly only justifiable on *a posteriori* grounds, yet it asserts a necessary circumstance; the identity of Eminem with Slim Shady, or the being of Slim Shady by Eminem. That is, given some *a priori*, philosophical essentialism, plus the purely empirical information that Eminem is identical to Slim Shady,<sup>253</sup> (1) asserts a necessary truth, only justifiable *a posteriori*.

In order to settle this issue we need to understand precisely which propositions (1) might assert, and we need to see whether any of these might be necessarily true and only justifiable *a posteriori*. As argued already, Kripkean considerations concerning the (logical, Barcan) necessity of (self-)identity in conjunction with the thesis of rigid designation are insufficient to generate the *substantive* (and allegedly *a posteriori*) necessity of, for example, Eminem's *essentially being* Slim Shady. Assuming a broadly Kripkean, direct theory of reference, if 'Eminem' and 'Slim Shady' are purely referential, then (1) ought to assert something like,

$$(1a) \quad \lceil e = s \rceil.^{254}$$

That said, if *e* and *s* here are purely referential, rigid designators, then arguably, (1a) effectively amounts to, or just *is*,

$$(2a) \quad \lceil e = e \rceil,$$

given that, purely in terms of the arrangement of objects and attributes asserted, since *e* is identical to *s*, (1a) simply asserts the self-identity of the object Eminem (or Slim Shady/Marshall Mathers III). Clearly however, this proposition is necessarily true and justifiable *a priori*; it is a mere instantiation of the logical necessity of self-identity.

---

<sup>253</sup> If this can be correctly described as 'purely empirical'. I begin to question this notion in the present section; and continue, more forcefully, in the following.

<sup>254</sup> As before, I ignore Eminem's potential non-existence here. I.e. it is a conditional more akin to  $\lceil \forall x \forall y [(x = y \wedge x = e \wedge y = s) \rightarrow (e = s)] \rceil$  that we should be looking at. Of course, if the consequent here is necessary, that the proposition as a whole is then just a complicated version of the (Barcan) necessity of identity is pertinent. I.e. in what sense would this proposition be both (non-trivially) necessarily true *and a posteriori*?

So, (1a) qua (2a) cannot be an example of the necessary *a posteriori*. Only if (1a) is interpreted as some stronger, substantive, essentialist claim, is it even an apt, candidate, necessary *a posteriori* proposition. Moreover, only if there is some stronger, essentialist and *a priori* justification, equivalent to the Kripkean (A) to (C), would the interpretation of (1) qua the *substantive* (1a) be justified. Now, as hinted in the previous section, I am more than sympathetic to the idea that object-identity is necessary, as long, of course, that this is regarded as an *a priori*, substantive and essentialist thesis about the nature of objects. The point being, whilst the necessity of (self-)identity, Leibniz's law plus rigid designation is insufficient to support the kind of substantive essentialism<sup>255</sup> required to generate cases of the necessary *a posteriori*, some other argument might do this work. There are perhaps two potential candidates for such an argument; general essentialism and individual essentialism (or haecceitism). In what follows I discuss these relatively briefly, as I return to the issue of essentialism in more detail in both the following section and in the concluding chapter.

Beginning with the general case, there are perhaps two main, metaphysical and *a priori* motivations for the kind of essentialism that would justify a substantive necessity of identity—and so provide a potential basis for cases of the necessary *a posteriori*. These are the general, *a priori* claims that (i) all objects are essentially the objects that they are; and that (ii) qua objects, if *x* and *y* are identical then they are essentially identical. Now, although these two claims (and especially the latter) sound extremely close to the logical necessity of self-identity, which I reject as supporting the necessary *a posteriori*, note that there is no mention of names and rigid designation here. Instead, all that is involved are the notions of identity, objects and the essential natures thereof. Moreover, if at all justifiable, the justification for (i) and (ii) must be fully *a priori*. In addition to this, it is highly questionable that such a general essentialism would support the kind of substantive, particular claim concerning individual objects, required to generate the necessary *a posteriori*—a complex point to which I return below.

Moving to the second candidate essentialism, as suggested in my initial

---

<sup>255</sup> The kind of essentialism I am hinting at is that of the Aristotelianism discussed by Salmon 1981, 2003, and more clearly endorsed by Brody 1980, Fine 1994, Lowe 1998, 2006, and Oderberg 2001, 2007 (amongst others).

discussion of the Kripkean argument, if it is to succeed, the relevant move (from the logical necessity of identity to the conclusion that identity statements involving rigid designators assert necessary and so essentialist identities) would appear to involve an appeal to a very substantive brand of essentialism; an individual essentialism or haecceitism. If a particular claim about individuals  $a$  and  $b$  is to assert a necessary identity, this must involve the *individual* necessity of identity, entailed by the individual essentialism that (for example)  $a$  is *essentially*  $a$ ; only then can we assert that  $\Box a = b$ , on the allegedly, purely empirical grounds that  $a = b$ . As with the first kind of essentialism however, this brand would require *a priori* and metaphysical motivation; moreover, it would require a much stronger form of argument than is offered in the previous paragraph. The basic line would be something akin to the following: for any object  $a$ , it is part of  $a$ 's essence to be  $a$ . Thus, if  $a = b$ , given that  $a$  essentially has the property of being identical to  $a$ ,  $b$  is also essentially identical to  $a$ ; i.e. essentially (and so necessarily),  $a = b$ . Now, I am in no position to evaluate the details of this argument as it is both complex and extremely contentious, and more importantly, since my present focus is on the existence of the necessary *a posteriori*, as opposed to the nature of essentialism—as indicated, I return to essentialism below. Suffice to say, whichever stripe of essentialism one chooses (as replacing the Kripkean argument from (A) to (C)), no thesis about names is mentioned and, crucially, the justification of such essentialisms is fully metaphysical and *a priori*; i.e. if it is justifiable, philosophical essentialism is justifiable only *a priori*. The point being (as I discuss below), the allegedly, purely empirical nature of statements such as ' $a = b$ ' would be negated.

Now, towards the beginning of this section I claim that in order to settle the issue of the necessary *a posteriori*, we need to understand which proposition(s) (1) might assert and which proposition(s) we are taking (1a) to be. So far, I have suggested that the Kripkean is only entitled to claim that (1a) is, effectively, the necessary and *a priori* (2a). Only if some stronger, philosophical, metaphysical and fully *a priori* essentialism is to replace the Kripkean premises (A) to (C), might we take (1a) to be some stronger, more substantive, necessary (and potentially *a posteriori*) proposition. Now the issue of the nature of (1a) is complex and, since it applies to further potential examples of the necessary *a*

*posteriori* (which I discuss in the following section), I set this aside presently; only returning to the discussion towards the end of the current section. This being the case, I now consider the issue of aposteriority; assuming that some kind of essentialism might be made to stand in place of the Kripkean (A) to (C), what about thesis (D)? Assuming some *a priori* route to the necessity of identity, is it possible to insert a purely empirical identity statement into such an argument, so as then to generate substantive, essentialist cases of the necessary *a posteriori*?

As before, in order to answer such questions we need to understand the nature of the relevant proposition(s). So far, I have remained within a broadly Kripkean, direct account of semantics. Indeed, with the exception of various two-dimensionalist analyses of Kripke's work (which I criticise in the introductory chapter), most commentators on the necessary *a posteriori* assume that true identity statements such as (1) assert simple, singular propositions, which (for the usual Kripkean reasons) are necessarily true, yet only knowable on an *a posteriori* basis. I have already suggested that things are not quite so clear, even on the 'wide' aspect of proposition-expression; I now turn to what I call the 'narrow' aspect of meaning.<sup>256,257</sup> Here, things are even less favourable for the Kripkean.

'Narrowly' understood then (i.e. in terms of objects, attributes *and* the way these are designated or referred to), (1) might also express the following propositions:

$$(1b) \quad \lceil \exists x \exists y (Ex \wedge Sy \wedge x = y) \rceil$$

---

<sup>256</sup> I use the (hopefully) neutral terms 'narrow' and 'wide' here to avoid a detailed discussion of the *de re/de dicto* distinction. As shall become apparent, the traditional distinction is very much in the background, even if not precisely analogous to the one I intend. In very brief detail, the 'wide' aspects of proposition-expression or sentence meaning are closer to the direct, Kripkean and standardly *de re*, in that I am assuming names to be broadly, directly referential and so on. The 'narrow' aspects of meaning are close to the *de dicto* but are not fully so; they are not purely about language, propositions, sentences and so on. Instead, the 'narrow' still concerns objects, attributes and similar but allows for a less rigid, less direct form of reference than with the wide.

<sup>257</sup> In terms of semantics (and names), I note that my position has some affinities with those of Tichý 1983 and perhaps Burge 1973, 1977—although my eventual picture is more 'direct' than the latter, in that I admit two aspects of the meaning of names. My account also has some similarities to that of Reimer 2002, although we differ on the correct analysis of the necessary *a posteriori*. Cf. McDowell 1977; Kaplan 1978, 1989; Schiffer 1978; Evans 1979, 1982; Forbes 1989, 1990; Richard 1990; Crimmins 1992, pp. 82ff.; Perry 1993; Recanati 1993 (esp. pp. 37, 136ff. and 155-63); Wong 1996, 2006; Michael 1998; Elugardo 2002.

or, more simply,

$$(1c) \quad \lceil \exists!x (Ex \wedge Sx) \rceil.^{258}$$

Now, why do I claim that the apparently straightforward sentence ‘Eminem is Slim Shady’ might express more than the simple, singular proposition(s) (1a) or (2a)? And why do I use predicates for the relevant names in (1b) and (1c)? Well, taking the latter question first, I use predicates in order to stress the ‘narrow’ aspects of meaning; i.e. to avoid the *stipulation* that names are (necessarily) rigid designators. Thus the two propositions might be rendered back to English as follows (respectively): ‘There are (apparently) two objects,  $x$  and  $y$ ;  $x$  is called ‘Eminem’,  $y$  is called ‘Slim Shady’, but they are identical’; or ‘There is one thing,  $x$ , called ‘Eminem’ and ‘Slim Shady’’. By way of providing further explanation for all of this, let me turn to the former question.

As indicated above, although on a simple, ‘wide’, direct reading, such assertions only concern the relevant objects and self-identity, that reading, I suggest, is too simple, too rigid and too directly referential; in short, too question-begging in favour of a Kripkean, rigid designation thesis. Accordingly, in such cases we need to take into consideration such things as the utterer’s intention to communicate and how else names (and predicates) might function. So for example, if  $a$  utters (1) to a friend, who is unaware that Eminem is also called ‘Slim Shady’, it is highly unlikely that  $a$  is trying to communicate an instantiation of the law of the necessity of self-identity or any relevant, stronger essentialism—at least outside of a philosophy class, perhaps. Instead, it is highly probably that  $a$  is trying to say precisely that Eminem also happens to be called ‘Slim Shady’ or that the two names are co-referential; it is this kind of intuition that I attempt to capture with (1b) and (1c). The point being, a correct understanding of the (alleged) necessary *a posteriori* must take into consideration relevant modal, rational, communicative and pragmatic issues; it is not a case of mere semantics. There are, for example, such issues as the speaker’s intention to communicate an idea (or perhaps ‘narrow’ belief), which

---

<sup>258</sup> I very much explain the use of predicates for the relevant names here in the main body below.

might in turn cause changes of belief and action in the hearer. The understanding of such cases purely in terms of direct (Millian) semantics, modality and truth-conditions is too 'external', too 'wide'; in addition, we need to think about the narrower aspects of communication such as speakers' intention, hearers' assumptions and how else names (predicates and so on) might function. On the latter aspect (which I label 'narrow' throughout), names are much less clearly direct and rigid; they are very arguably quite loose and broadly descriptive, whilst still involving relevant objects and attributes (hence my describing the 'narrow' as less clearly *de dicto*; less clearly merely about words, sentences and so on).

All of this said, the problem with taking sentence (1) as expressing (1b) and (1c) is that neither of the latter two propositions can be viewed as being both *a posteriori* and necessarily the case. The point being, both (1b) and (1c) are quite clearly existential claims regarding particular property instantiations. This being the case, they are (thereby) *a posteriori* but contingent propositions; I need some empirical evidence to know that *x* (contingently) happens to be called 'Eminem'.

Here of course, the friend of the necessary *a posteriori* might object that I have gerrymandered (1) to express clearly *a posteriori* but contingent propositions; i.e. I am assuming that 'aposteriority entails contingency' (or similar) so as to interpret (1), somewhat artificially, as the clearly contingent (1b) and (1c). Against this, I must stress that the general form of the alleged argument required to generate the necessary *a posteriori* is as follows: *A priori*, philosophical, essentialist and so necessary, major premise; *purely a posteriori* or empirical, minor premise; ergo necessary *a posteriori* conclusion. This being the case, since we are now considering the relevant *purely empirical* minor premise, we must insist that no *a priori*, philosophical essentialist assumptions are built into the relevant proposition. So, if (1) is to assert a relevant, candidate, *a posteriori* proposition, this must be a *purely a posteriori* proposition. Now the best, relevant examples of these, I claim, are precisely the 'narrow', quasi-pragmatic, declarative propositions, (1b) and (1c). If we are to understand (1) as purely empirical, we must be thinking of the kind of claim whereby the speaker is asserting the existence of some *x* (and some *y*) called

'Eminem', who is also called 'Slim Shady'—and either  $x = y$  (as per (1b)) or the speaker is only asserting the existence of  $x$  (as per (1c)). Clearly however, as stressed above, such propositions would be *a posteriori* but only contingently true.

What I am suggesting then, is that no such *purely empirical* proposition can be used to generate a necessary truth, via insertion into an *a priori* argument for philosophical essentialism. The key point being, the essentialism and so the necessity involved in the likes of (1) must come from the relevant philosophical, metaphysical and *a priori*, essentialist major premise, as opposed to the purely empirical minor one. All of this being the case, (1b) and (1c), even though fully *a posteriori*, cannot be so inserted into an *a priori*, essentialist argument, so as to generate substantive and particular *a posteriori*, essentialist, necessary propositions.

As a brief stock-taking, I have considered three examples of the kind of proposition that (1) might assert, and which might be thought to be both necessary and *a posteriori*. Clearly (1a), when considered in purely Kripkean, direct terms (i.e. as derived from the Barcan necessity of identity plus rigid designation) is the same proposition as (2a), so necessary and *a priori*. On the other hand, (1) qua (1b) or (1c), as potentially to be inserted into some *a priori* essentialist argument, so as to generate a necessary *a posteriori* proposition, would be *a posteriori* but entirely contingent—and so, crucially, not apt for providing examples of the necessary *a posteriori*. This just leaves (1a), (as distinct from (2a)), as the only candidate necessary *a posteriori* proposition. As adverted above however, the nature of this proposition is quite complex; it is potentially, on a purely Kripkean understanding of naming and necessity, the same proposition as (2a)—but, on a deeper understanding of essence and necessity, perhaps, it is distinct from the latter proposition. Hence, only now do I begin to discuss its nature in any detail—before moving on (in §4) to consider a further argument for the necessary *a posteriori*, involving additional essentialisms of, for example, kind-membership, origin and composition.

As I indicate, matters are a little more complicated with respect to the interpretation of (1a); there is a strong sense in which the issue of the necessary *a posteriori* (or otherwise) status and informativeness of the original

(1) re-surfaces in this particular case. The point being, at least superficially the proposition(s) (2a) and (1a) do not look the same—and it might be possible for someone to grasp (2a) without thereby grasping (1a). Thus, (1a) might not share (2a)'s necessary and *a priori* status; perhaps (1a) is an example of the necessary *a posteriori* after all. In order to see if this is the case, we need to understand (as before) precisely what is necessary and what is *a posteriori* with respect to (1a). Now, I claim, the necessity involved in (1a) derives from one of two sources; either it comes from the trivial (and *a priori*) essentialism of the logical necessity of self-identity or it comes from one of the more substantive, general essentialisms discussed above. Either way, what is necessary about (1a) (and similar propositions) is the relevant *general* arrangement of objects and attributes that are involved; if Eminem *is* identical to Slim Shady, clearly this circumstance is necessarily the case in virtue of the general necessity of identity (i.e. for all objects), be that trivially or, more deeply, essentialist. In the first case, I claim, we have the trivially necessary and *a priori* (1a) qua (2a) qua the *general* Barcan necessity of identity; in the second case, we have a distinct proposition, (1a`) say, that is substantively, necessarily the case, but still, essentially, justifiable on an *a priori* basis, given some *general* essentialism about object identity (for all objects).

In slightly more detail (and as paving the way for the discussion in the following section), the kind of essentially, *a priori* justificatory considerations that I am suggesting are as follows: If sentence (1) is to assert a necessary (and arguably essentialist) proposition—either as (1a`) or via some essentialist, major plus an empirical, minor premise—then that proposition itself already requires some necessary (or essentialist) justification. The point being, if (1) is viewed as a 'purely empirical' proposition, then as before, there is no motivation for that proposition's then being essentially the case—it must then be (purely) contingent. If on the other hand, (1) is taken to be a genuine identity-involving (or, as I suggest below, otherwise essentialist) proposition, then it must rely for its justification on the relevant identity-involving *general* essentialisms. To know that 'two' objects are (necessarily) identical, it is necessary to know, for example, that (i) only objects of the same kind can be candidate identical objects; (ii) that no two objects of the same kind can occupy

the same region of space, at the same time; so (iii) that such same-kind objects so occupying the same space, at the same time, must be identical; and (iv) that any identical objects are necessarily identical.<sup>259</sup>

Clearly, the kind of essentialism am I suggesting here is broadly Aristotelian. As with the ‘stronger’ essentialism I mention during the discussion of (1a) qua (2a) above, justification here (i.e. on points such as (i) to (iv) in the previous paragraph) is a thoroughly *a priori* issue, which is not to say that either form of essentialism is correct, merely that if it is correct, this is an *a priori*, philosophical and metaphysical matter; essentialism and necessity are justifiable on an *a priori* basis, if at all justifiable.

#### 4 Another argument?

So far I have discussed a Kripkean argument for the necessary *a posteriori*, suggesting that strictly there are no such propositions—at least as regards the standard, name-involving, identity statement examples. Apparently necessary *a posteriori* sentences can express several propositions, all of which either assert contingent circumstances only knowable on an *a posteriori* basis, or necessary circumstances essentially knowable *a priori*.<sup>260</sup> Now, I realise I have left matters rather sketchy at this point. This is because it is arguable that some of the considerations of the previous section constitute a ‘second’ argument for the necessary *a posteriori*. I now discuss this argument in a little more detail, very much returning to the theme of the source of apriority in the likes of (1a) and other allegedly *a posteriori* essentialisms.

---

<sup>259</sup> As noted previously, I am influenced by the likes of Brody, Salmon, Fine, Oderberg and Lowe here. See previous notes for detailed publications.

<sup>260</sup> A potential objection here is as follows: Even though there might not be any necessary *a posteriori* ‘propositions’, there remain necessary propositions, asserted by ‘*a posteriori* sentences’; hence ‘necessary *a posteriori* sentences’. In response to this, I would argue that there are indeed two elements to a ‘necessary *a posteriori* sentence’; a wide, necessary and *a priori* proposition, and a narrow contingent and *a posteriori* one. Against the intuition that apriority, aposteriority and knowledge in general occur at the sentential level (as urged by Wong 1996, 2006 for example), I would also argue that the whole idea of proposition-talk is based on the idea of abstracting away from sentential knowledge, belief and justification. Very briefly for example, if I know that ‘Snow is white’, it is not the natural, English sentence that I know (and *mutatis mutandis* for ‘Schnee ist weiß’, ‘La neige est blanche’), it is the proposition or circumstance; that the stuff, snow, has the property, whiteness.

This alleged second and more general argument for the existence of the necessary *a posteriori* is said to have something like the following, *modus ponens*-based form:

- (MP1)  $p \rightarrow \Box p$  [*a priori*, essentialist claim]  
 (MP2)  $p$  [*a posteriori* claim]  
 (MP3)  $\Box p$  [*a posteriori* conclusion, given the *a posteriori* (MP2)]<sup>261</sup>

Now, there is some debate<sup>262</sup> as to whether this kind of argument is clearly distinct from the first, considered above, but for present purposes I treat the arguments as separate. So for example, using the  $\lceil e = s \rceil$  proposition (1a), discussed throughout, (allegedly) we know *a priori* that if (1a) then necessarily (1a); we know that (1a) on *a posteriori* grounds; therefore we know *a posteriori* that (1a) is necessarily the case; (1a) is a necessary *a posteriori* proposition. Note however that this form of argument is not universal; it will not work for any old  $p$ —presumably there is a certain class of  $ps$  such that (MP1) to (MP3) apply. I return to this important point below.

Accordingly, this kind of argument can be used to generate putative cases of the necessary *a posteriori* in addition to the examples we have considered already. Specifically, the argument allegedly generates necessary *a posteriori* statements, which assert substantive essentialisms such as those of kind-membership, origin and composition or constitution—as well as those of identity (and diversity) already discussed. Some potential examples are as follows:

---

<sup>261</sup> This argument is similar in form to the kind of argument assumed by those who would argue for ‘actually’-based necessary *a posteriori* propositions; for any (*a posteriori*)  $p, \lceil \mathcal{A}p \rceil$  being such an alleged case. As per the related discussion in ch. 3, I take such examples to be entirely artificial and insubstantive, as well as relying on an illegitimate notion of possible (and of the ‘actual’) worlds—all of which I discuss in the concluding chapter.

<sup>262</sup> Vaidya (2008, §3) simply states this argument as the general form of the argument I present in §2. Soames (2006b, p. 292) presents my ‘second’ argument as his first and distinguishes this from another concerning the empirical evidence required to ascertain co-referentiality (pp. 298-9)—which I take to be related to the rigid designation argument I provide in §2.

Kind-membership:

- (K1) If Aristotle exists, then Aristotle is a person.<sup>263</sup>
- (K2) Whales are mammals.

Origin:

- (O1) This tree originates from acorn *a*.

Composition:

- (C1) Water is composed of H<sub>2</sub>O.

So how do such statements (allegedly) express necessary *a posteriori* propositions? Well, similar to the (1a) case discussed above and according to the form of (MP1) to (MP3), (supposedly) we know that the conditional (K1), for example, is necessary since it is an instance of the *a priori*, essentialist principle that if an object *x* is a member of kind *K*, then necessarily *x* is a member of *K*—and *mutatis mutandis* for origin and composition.<sup>264</sup> Nevertheless, discovering that Aristotle is a person, that this tree comes from a particular acorn or that water is composed of H<sub>2</sub>O, requires empirical investigation; hence, allegedly, each of the above examples assert necessary *a posteriori* propositions.

Now precisely as with previous examples of the necessary *a posteriori*, if genuine, these examples would cause problems for the conceivability-possibility form of reasoning. Very briefly, if we need empirical information to know that Aristotle is a person (*p*), or that this tree comes from acorn *a* (*q*), then, as before, the negations  $\neg p$  and  $\neg q$  appear to be entirely *a priori* or rationally possible; i.e. conceivable. Given, that *p* and *q* are necessary propositions however, their negations are impossible; hence, goes the argument, conceivability does not entail possibility.

All of this being the case, we must see whether this second argument is

---

<sup>263</sup> As noted with the previous, putative examples of the necessary *a posteriori*, I use the conditional here to avoid problems concerning necessary propositions involving contingent objects. I drop the conditionalisation in the other examples for ease of expression.

<sup>264</sup> I am not disputing the relevant essentialist theses, Kripke's arguments for which appear at 1971, pp. 86-88 and 1980, pp. 47ff. What I am disputing is whether there is a clear, single, *a posteriori* proposition that we know to be necessarily true solely on the basis of its being an empirical truth.

more powerful than the first. Does it provide genuine cases of the necessary *a posteriori*? Does it generate the interesting and substantive essentialisms adverted to? And if so, does it succeed in demonstrating that there is a significant gap between conceivability and possibility? Very much as before, all of this turns on the nature of the propositions and circumstances asserted by the original sentences; on what is taken to be necessary and what is allegedly *a posteriori*. That said, my position here is a little more complex than before, as I first want to examine the nature of the relevant proposition *p* with respect to the form of the argument (MP1) to (MP3), and second, I want to go into a little more detail on an objection I raised against the first argument for the necessary *a posteriori*, towards the end of the previous section (since this objection applies even more clearly here), before fully extending my ‘multiple proposition’ response to the current kind of example.

First then, recalling a point I make above, note that the form of the argument (MP1) to (MP3) is not universal—it would not extend to all *ps* such that *p* is justifiable on an *a posteriori* basis. Quite clearly (unless some extreme necessitarianism obtains), that I had cornflakes for breakfast is not the kind of proposition that might be inserted into such a *modus ponens* argument form to generate a necessary *a posteriori* conclusion, since (i) such a proposition is (standardly understood) to be both empirical and completely contingent (so there must be something special about the relevant kind of *p* that can be so used to generate necessary *a posteriori* propositions) and (ii) this special quality is, I claim, extremely elusive—to the effect that no single proposition can do the relevant work.

In slightly more detail here, even assuming ‘I had cornflakes for breakfast this morning’ were such a proposition (i.e. assuming there were some relevant (MP1)-style essentialism about breakfast items), I now hope to show that the key to the (failure of) the second, and general, form of argument for the necessary *a posteriori* concerns the nature of the relevant, *a posteriori* minor premise. My contention is that the relevant claims are either already fully necessary (or essentialist) but *a priori* truths, or they are fully empirical but contingent ones; and essentially, in neither case does the MP argument generate necessary *a posteriori* propositions. Using the ‘cornflake’ example very

briefly, my point can be illustrated as follows. If the relevant (MP1)-style essentialism were to obtain then my simply, empirically observing my having cornflakes for breakfast *neither* generates a necessary proposition nor is it what justifies the relevant necessary proposition (i.e. the relevant cornflake essentialism); it is a mere instantiation of a more general necessitarianism (assuming such obtains). What would be necessary then, and what would do the justificatory work, would be a general conditional such as ‘anything that has cornflakes for breakfast on such-and-such a date, necessarily has cornflakes for breakfast...’. So, what I am suggesting is that there is no such thing as a simple, empirical (MP2)-style proposition that is fully empirical (but tacitly necessary), which can be so used to generate and justify the necessary *a posteriori*. Instead there are, I claim, several relevant propositions, which will be contingent instantiations (e.g. ‘(I am currently observing/I am aware/I know that) this particular, contingent thing happens to be having cornflakes now’) of related necessary truths (such as ‘anything that has cornflakes...’). In short, it is not some ‘fully empirical’ (MP2) that generates the relevant necessity (and necessary *a posteriori*) but instead either the MP argument fails (where  $p$  is not necessary and (MP1) does not obtain) or  $p$  is a conflation of an empirical but contingent proposition and the original (MP1)-style general, necessary/essentialist conditional.

In order to make myself more clear on this issue, let me return to a more likely candidate necessary *a posteriori* proposition (the Eminem-Slim Shady-(1a) case) before extending my argument to the current, essentialist examples. As noted above, inserting proposition (1a) into the (MP1) argument, we get the following:

(MP1a)  $e = s \rightarrow \Box e = s$

(MP2a)  $e = s$

(MP3a)  $\Box e = s$

But here we must ask, precisely what is the nature of proposition (1a) in (MP2a) and as inserted in (MP1a)? My contention (as I suggest above) is that there are two main options; either (1a) is a simple, empirical claim, for

example, that a particular, contingent object happens to have two names, or it is already an essentialist, necessary conditional (such as that all objects are self identical, all objects are essentially the objects that they are or, more contentiously perhaps, that objects have the property of being essentially the objects that they are). The point being, if we take the first option, given that it is a clearly existential, empirical claim (1a)—qua (1b), for example—is going to be a contingent truth, unable to operate in conjunction with (MP1a), so as to generate (MP3a). To see that this is the case, imagine substituting (1a)—qua (1b)—into the (MP1) argument. Quite clearly this would not generate a necessary proposition; that an object has two or more names ( $p$ ) does not imply that  $p$  is necessarily the case. If on the other hand we take the latter option, being a necessary, essentialist claim, (1a)—qua (2a) or qua the relevant, stronger essentialism—is going to be necessarily true with or without the assistance of (MP1a); i.e. in virtue of being (or relying) on the relevant essentialism (MP1a) is meant to express. Moreover, of course, such an essentialism would be justifiable and knowable (if justifiable) on an entirely *a priori* basis.

So what is it about (1a) (qua essentialist identity proposition) that makes (MP3a) necessarily the case? And, why do we know this on an *a priori* basis? Here, I claim, it is the fact that (1a) (qua (2a) or stronger) is already a necessary, essentialist identity claim that makes (1a) a necessary truth (and so justifies (MP3a)); if it is a genuine identity proposition, there are some important *a priori* and essentialist assumptions already built into (1a). Assuming (as I do) the necessity of identity for objects, if (1a) is a genuine identity claim, then it must be a necessary, essentialist truth; (trivially) every object is necessarily self-identical (i.e. (2a)); (more contentiously) it is impossible for two distinct objects to be identical; it is further impossible for two objects of the same kind to occupy the same region of space, at the same time; and (slightly more contentiously) every object is essentially the object that it is. Putting all of this together, either we get the fairly trivial essentialism of necessary self-identity, (2a), or one of the stronger essentialisms I take (1a) (qua distinct proposition) to assert. Nevertheless, all of these essentialist principles are (if at all justifiable) essentially justifiable on an *a priori* basis; not

via the conjunction of the logico-semantic (MP1a) and the purely empirical (1a) qua (1b). Hence, either (1a) is purely empirical, thereby contingent and so unable to generate a necessary truth in conjunction with the relevant *modus ponens*, or (1a) is *already* an essentialist truth—but it is an essentialist and necessary truth that is justified *a priori*.

Concluding my first point, I think it is fairly clear how the foregoing argument extends to the Aristotle-(K1) and other essentialist cases. If, for example, (K1) is to be slotted successfully into the (MP1) argument, then it must be a certain kind of proposition; an essentialist, necessary truth (already). There are several options as to actual the nature of (K1); either it could be a simple empirical claim along the lines of (my analysis of (1a) qua (1b)), [there is an object  $x$ ,  $x$  is called 'Aristotle' and  $x$  is a person], or it could be the kind of essentialist truth we are looking for, something along the lines of, [if  $x$  is a person/kind member then  $x$  is necessarily a person/kind member]. Clearly, again, the former option cannot work in conjunction with (MP1) to generate (MP3); whereas the latter option is (very arguably) already a general, necessary truth, essentially knowable on an *a priori* basis. What I am getting at, again, is that even with more complex and substantive essentialisms, there are built-in *a priori* and philosophical assumptions that justify the relevant essentialist necessity. That an individual named 'Aristotle' happens to instantiate personhood is not (at all) what justifies the essentialist conclusion that Aristotle (qua person) is necessarily a person. Instead, what justifies the latter is the essentialist and *a priori* claim that whatever is a person/kind member is necessarily a person/kind member.

Now I realise this might sound a little artificial and that I might be accused of gerrymandering what (K1) expresses to suit my conclusion, but this is what I think is going on in such cases. If we have a truly contingent truth, then (as per ch. 3) it must be knowable on an *a posteriori* basis only; in the present chapter I am arguing that if we have a genuinely essentialist or necessary truth, the real justification thereof must come from an *a priori*, as opposed to a simple, *a posteriori* source. That said, there will be readers unconvinced at this point. This being the case, I now turn to my second main point, before fully extending the multiple proposition analysis of the necessary *a posteriori* to cases such as

(K1).

Second then, I want to extend the foregoing points in order to return to an objection that was raised against (1a) as necessary and *a posteriori* towards the end of the previous section. In very brief detail, what I aim to show is that (a) the alleged necessary *a posteriori* status of the likes of (1a) (and the above, essentialist statements) very much turns on their asserting wide (necessary and *a priori*) propositions that can be confused with particular, narrow (*a posteriori*) graspings of instances of the relevant necessary and *a priori* knowable philosophical theses; i.e. like *applied* mathematical truths, they *can* be known on an *a posteriori* basis, but the wider, general, mathematical truths themselves are essentially justified *a priori*. I then want to support further the claim that (b) it is the relevant (*a priori* and necessary) philosophical theses that are what is widely asserted by the relevant sentences, whereas what is grasped on occasion of particular instances of such wider claims, are narrow, *a posteriori* but *contingent* propositions. It is then the conflation of the wide and narrow propositions asserted by the likes of (K1) to (C1), which leads to the postulation of the necessary *a posteriori*.

Turning to issue (a), the main problem with the (MP) argument for the necessary *a posteriori* concerns the justification of the relevant necessity and the objection that the relevant (MP2), 'purely empirical' premise, cannot be an instantiation of such a necessity, in virtue of being purely empirical, *a posteriori* and so contingently, as opposed to necessarily the case. The point being, something must justify the move from the (allegedly) purely empirical *p* to the necessitation thereof. The Kripkean (as I suggest) would appeal to the relevant essentialist necessity's being available on an *a priori* basis and thereby providing the relevant major premise for the *modus ponens*—as per (MP1) to (MP3). The problem with this concerns the difference (discussed in ch. 2) between the justification and knowledge of general necessary truths and of particular 'graspings' of instances (or applications) of such truths. As with my case against the necessary *a posteriori* status of 'Eminem is Slim Shady' in the previous section, where I claim that there is a strong sense in which (1) is an instantiation of a wider essentialist truth (that objects are self-identical, or, more contentiously, that they are essentially objects), the relevant, putative

necessary *a posteriori* and essentialist propositions here, are instances of deeper essentialist truths, the latter of which require *a priori* philosophical justification. In general, as we have seen, the Kripkean attempts to justify the necessity of such statements in terms of *a priori*, philosophical analysis but then claims that the epistemic status of the relevant propositions is *a posteriori*, since empirical investigation is required to determine the truth of the relevant, non-modal proposition. Against this, I claim they should instead be justified on the basis of the relevant essentialist premise; since such claims rely on deeper essentialist truths whose justification, qua essentialist, metaphysical, philosophical thesis, must be on *a priori*, rational grounds.

To make this explicit, let us consider an example:

(MP1b) If two pebbles plus three pebbles is five pebbles ( $p$ ), then necessarily two pebbles plus three pebbles is five pebbles ( $\Box p$ ).

(MP2b) Two pebbles plus five pebbles is five pebbles ( $p$ ).

So,

(MP3b) necessarily two pebbles plus three pebbles is five pebbles ( $\Box p$ ).

Whilst the occurrent grasping in (MP2b) that  $p$  is true is a largely empirical matter (and *mutatis mutandis* for other *a posteriori* ways of understanding particular mathematical propositions), what *justifies* the move from  $p$  to  $\Box p$  in (MP1b) itself is the *a priori*, philosophical point that mathematical truths are necessary truths. Thus, whilst ‘workings out’ of mathematical (or essentialist) truths can be *grasped* in a quasi-empirical fashion, they are *justified*—both in terms of their being truths and their being necessary truths—on an *a priori* basis, and in virtue of philosophical argument concerning the nature of mathematics (and *mutatis mutandis* for kind membership, origin, composition and identity or diversity). Clearly, what I am suggesting is that this argument is precisely parallel with the kind of alleged necessary *a posteriori*, non-trivial, essentialist truth-generating argument (MP1) to (MP3). It is not the (allegedly—but not fully, as discussed below) *a posteriori* instance ( $p$ ) that ‘Aristotle is a person’, ‘this tree comes from acorn  $a$ ’, or ‘water consists of  $H_2O$ ’ (or, indeed that ‘Eminem is Slim Shady’), which generates the relevant

necessity ( $\Box p$ ); instead it is the *a priori*, philosophical argument justifying the necessity itself, and this depends on the natures of the relevant objects, kinds and attributes, be they mathematical, natural kind-substantial, physico-chemical-substantial or, indeed, everyday objects.<sup>265</sup>

There is of course, an apparent objection to this line of argument. The adherent of the *modus ponens*-based argument for the necessary *a posteriori* might argue that there is a clear disanalogy between the mathematical case I use and the standard Kripkean, essentialist but *a posteriori* examples; the mathematical case is justified *a priori* (both in terms of the initial  $p$  and its necessitation), whereas the essentialist necessary *a posteriori* statements are, as per the argument, empirical. Very briefly against this line of objection, I would repeat points made both above and in previous sections; whilst *occurrently grasping* that  $\lceil e = s \rceil$  or  $\lceil 2 + 3 = 5 \rceil$  requires some empirical information, justifying the latter is certainly an *a priori* matter and, as I stress throughout, so, ultimately is the former—at least in terms of its wide variants, such as that all objects are self-identical. The point being, in order to judge that  $\lceil x = y \rceil$ , we need to know (at least) that all objects are self-identical; every object is essentially the object that it is; (more contentiously) for any  $x$  and  $y$ , if  $x = y$ , then  $x$  and  $y$  must be the same kind of object with the same criteria of identity and persistence; and (for example) that no two objects of the same kind can occupy identical regions of space. All of the foregoing require *a priori*, philosophical argument and justification.<sup>266</sup> In addition, and perhaps more

---

<sup>265</sup> Against this kind of objection to the necessary *a posteriori*, Soames (2006a, pp. 278-89) argues that a *supporter* of Kripke has a clear choice of rejecting either:

“P1. When empirical evidence is required for knowledge of  $p$  its function is to rule out possibilities in which  $p$  is false”

or

“P2. All epistemic possibilities are genuine, metaphysical possibilities...”.

With Soames, I agree that the two-dimensionalist interpretation of Kripke is to accept (a modified) P1 and, more or less, a conflation of epistemic and metaphysical modality as per P2. Also with Soames (and thereby distinguishing my position from two-dimensionalism) I reject P2 but, since apriority is to be understood in terms of rational (as opposed to *epistemic*) possibility, the question of whether the *epistemic* and the metaphysical are coextensive is a side issue that does not touch my argument against the necessary *a posteriori*.

<sup>266</sup> I am aware of the relevant Bird-Lowe exchange here (Lowe 2007b, 2008a; Bird 2008). With Lowe, I see Bird’s

(2†) Dthat (John’s father) is Fred

as pivotal. Going beyond Lowe (and in line with my general analysis), I view (2†) as expressing two propositions; one wide, necessary and *a priori*,  $\lceil Fred = Fred \rceil$  (for example); and another narrow, *a posteriori* but contingent,  $\lceil \exists x \exists y [John(x) \wedge Dthat[FatherOf(yx)] \wedge Fred(y)] \rceil$  (for example).

simply, if the relevant propositions  $\lceil e = s \rceil$  and  $\lceil 2 + 3 = 5 \rceil$  are assertions of necessary circumstances, such as (in the former case) the self-identity of  $e$ , or more contentiously the being of  $e$  by  $e/s$ , then, these being necessary and essentialist theses, they are only going to be justifiable (if at all justifiable) on an *a priori* basis. If we are to know that  $e$  is identical to  $s$ , we must already know that  $e$  is necessarily and essentially  $e$ ; we must know that  $e$  is essentially  $s$  (qua  $e!$ ); we must grasp a necessary truth, and, importantly, one that is justified on an *a priori* basis.

Turning to issue (b) mentioned a few paragraphs above, and by way of expanding on the foregoing, I now aim to show how instances of such necessary and *a priori* truths do have an *a posteriori* element—and how this might be taken (confusedly) to show that these are necessary *a posteriori* propositions. Very much as before, my claim is that there are (at least) two potential propositions in the vicinity; one necessary and *a priori*, and another which is *a posteriori* but contingent. It is the conflation of such propositions that leads to the postulation of the necessary *a posteriori*. What I am saying here is very much in line with my position on the first version of the necessary *a posteriori*; example statements such as (K1) to (C1) either assert wide, necessary and *a priori* propositions, or they assert narrow and *a posteriori* but contingent ones. So what are the relevant wide propositions in such cases? Here, my claim is that what is widely asserted is nothing less than the relevant essentialist thesis; something along the lines of (for (K1)):

(K1a) if there are persons, anything that is a person is necessarily a person,

or,

(K1b) anything that is a  $K$ -member is necessarily  $K$ -member.

The point being, when considered widely, the necessary truth(s) asserted by the likes of (K1) must be something akin to the general, philosophical, essentialist theses (K1a) or (K1b); which are justifiable on an *a priori* basis (if at

all justifiable). Considered narrowly however, the relevant proposition would be something like;

(K1c)  $\exists x (Ax \wedge Px)$ , [I use the predicate form here, for reasons explained in the main body after the introduction of proposition (1c) above]

which, quite plainly, being an existential statement, is going to be knowable only on an *a posteriori* basis but one that asserts a metaphysically contingent circumstance.

In this way then, there is a very weak sense in which the original sentences (K1) to (C1) (and similar) are ‘necessary *a posteriori*’; they assert necessary (and *a priori*) wide propositions, but *a posteriori* (and contingent) narrow ones. That said, there is no single proposition asserted that is both necessary and knowable only on an *a posteriori* basis.

## 5 The necessary *a posteriori* conceivability and possibility

With respect to the necessary *a posteriori* then, I discuss and reject the two main and leading arguments for the existence of the alleged phenomenon. First, the standard, Kripkean argument moves from logico-semantic premises to substantive, metaphysical conclusions; the wrong order of explanation. In particular, the Barcan necessity of identity, rigid designation plus Leibniz’s law is insufficient to demonstrate that identity statements involving names express necessary *a posteriori* propositions and especially, *a posteriori* essentialisms.

Second, even if it is a distinct argument, a *modus-ponens* style move from an *a priori*, essentialist and so necessary conditional, via a fully empirical minor premise, also fails to demonstrate the alleged conclusion that there are necessary *a posteriori*, essentialist propositions. Instead, it is highly questionable that the *a priori*, philosophical and essentialist major premise is of such a simple, conditional form—much deeper metaphysical and *a priori* reasoning is required to substantiate such claims. It is also highly questionable

that a 'purely empirical' minor premise can be substituted into any such *a priori* and necessary conditional. Instead, I argue that if the relevant  $p$  is fully *a posteriori*, then it must be some kind of existential, individual-introducing and so contingent truth; whereas if  $p$  is the kind of proposition that could be inserted into the relevant *a priori* essentialism, it would already require *a priori* justification for its essentialist status.

In summary then, the illusion of the existence of necessary *a posteriori* propositions rests on the conflation of wide (necessary, *a priori*) and narrow (contingent, *a posteriori*) propositions, which are expressed by single, 'necessary *a posteriori* sentences'. For example, taking one of the examples from above,

(K2) whales are mammals,

that there are some objects called 'whales', some called 'mammals', and that all those of the former are of the latter ( $p$ ), cannot be simply inserted into a *modus ponens*-style argument generating a necessary conclusion ( $\Box p$ ), without there being some reason as to why  $\lceil p \rightarrow \Box p \rceil$  is valid. The reason, I claim, is that something in the region of (K2) is already an essentialist and so a necessary truth, without the support of the *modus ponens*  $\lceil p \rightarrow \Box p \rceil$ ; this is something like the proposition,

(K2a) if there are any whales (and if whales are a kind), then all whales (qua kind members) are necessarily whales (or kind members).

The point being, the original  $p$  here, being a mere empirical proposition, is not (as per my eating cornflakes for breakfast) the kind of thing that can simply be inserted into a *modus ponens*-style argument to generate a necessary conclusion; there must be some justification for that necessity. This justification must come from the philosophical, essentialist and *a priori* proposition that all kind members are necessarily kind members (or similar). Moreover, it is the confusion of these (or similar) propositions that leads to the illusion of the necessary *a posteriori*. There can then be 'necessary *a posteriori* sentences', but

these are conflation of necessary (but *a priori*) wide and *a posteriori* (but contingent) narrow propositions.

In slightly more detail, and returning to some of the previous examples,

(1) 'Eminem is Slim Shady'

and

(K1) 'Aristotle is a person',

I claim that these analyse out into (at least) two separate propositions. These are either wide, necessary and *a priori* propositions (or essentialist theses), such as

(1a)  $\lceil e = s \rceil$ ,

understood along the lines of

(2a)  $\lceil e = e \rceil$ ,

and

(K1b) anything that is a *K*-member is necessarily *K*-member,

respectively, or they are narrow, contingent and *a posteriori* propositions, such as

(1a)  $\lceil e = s \rceil$ ,

qua

(1b)  $\lceil \exists x \exists y (Ex \wedge Sy \wedge x = y) \rceil$ ,

or

(K1c)  $\exists x (Ax \wedge Px)$ .<sup>267</sup>

All of this being the case, I suggest that there is no real gap between what is *genuinely* conceivable and what is metaphysically possible; something is conceivable (rationally possible) only if it is metaphysically possible; it is just not possible to conceive of an impossible arrangement of objects and attributes. Very much as with apriority and necessity then, genuine conceivability entails possibility. Similarly, if something is metaphysically necessary (and knowable), its negation is rationally impossible—in virtue of being metaphysically impossible.<sup>268</sup> For example, if (widely) Eminem is self-identical, or if Aristotle is a person, given certain (*a priori*) essentialist premises, the relevant (wide) propositions are metaphysically necessary. Consequently, the negations of the relevant propositions are metaphysically impossible and so, strictly, rationally impossible as well; it is just not possible to conceive of Eminem's not being self-identical or of Aristotle qua person, not being a person.

So why do some philosophers claim that such negations are 'conceivable' and so (assuming they are realists about metaphysical modality) that 'conceivability' is a very poor guide to metaphysical possibility? My analysis is that despite the foregoing necessity of (wide) propositions such as (1a) qua (2a) and  $\lceil$ Hesperus is Phosphorus $\rceil$ , the 'conceivability' of the relevant negations rests on a confusion of the relevant, negated, narrow proposition for the negation of the original, wide proposition. In such cases it is the negation of the relevant, narrow propositions (and relevant circumstances), which is being taken to be conceivable. So for example, although (2a) is necessarily the case, narrowly understood (1a) qua (1c) states that there is a single thing called 'Eminem' and 'Slim Shady'; this being an existential, contingent-property-involving and, quite clearly, a contingent *a posteriori* proposition, its negation is entirely metaphysically and so *a priori* or rationally possible (it is entirely

---

<sup>267</sup> I explain the use of 'predicate-names' in the notes and main body surrounding the introduction of proposition (1c) in §3 above.

<sup>268</sup> I realise there is a large, potential issue with respect to necessary (and contingent) but 'unknowable' propositions here—hence the parenthesised 'knowable'. I clarify this issue with reference to Goldbach's conjecture, in the final section of the following chapter.

conceivable that Eminem might not have been named ‘Slim Shady’—or *vice versa*, or that there might have been no such thing or more than one such thing). Similarly, whilst ‘Aristotle is a person’ might assert a (widely) necessary proposition, that a thing named ‘Aristotle’ happens to instantiate personhood, is contingent and *a posteriori*, so its negation is rationally possible or conceivable.

So, the illusion of the necessary *a posteriori* (and relatedly, of the ‘conceivability’ of the negations of such propositions) rests on the conflation of separately expressed wide and (negated) narrow propositions. Where an alleged necessary *a posteriori* sentence *s* expresses two (or more) propositions *p* (widely) and *q* (narrowly), *p* is necessary but *a priori*, whereas *q* is *a posteriori* but contingent. Thus despite *p*’s being both metaphysically and rationally necessary, since *q* is both contingent and knowable on an *a posteriori* basis, its negation is both metaphysically and rationally contingent. It is the conflation of such wide and narrow propositions that leads to the alleged phenomenon of the necessary *a posteriori*; relatedly, it is the confusion of the ‘conceivability’ (i.e. epistemic possibility, as I explain below) of  $\neg p$  with the *genuine* conceivability of  $\neg q$  that leads to the idea that ‘conceivability’ (qua epistemic possibility) is a poor guide to metaphysical possibility (since  $\neg p$  is epistemically but not metaphysically—or rationally—possible). That is,  $\neg p$  is ‘weakly’ conceivable but neither genuinely possible nor genuinely or ‘strongly’ conceivable. Consequently, given the failure of the necessary *a posteriori*, there is no real gap between genuine conceivability (qua rational or *a priori* possibility) and metaphysical possibility.

My response to such examples and the general problem then, is that current, standard (and I include two-dimensional) understandings of conceivability are very much cashed out in terms of *epistemic* possibility (and/or imaginability)—*viz* qualitatively (or epistemically) identical situations—and where something is deemed epistemically possible and so ‘conceivable’, this is ‘possible’ only in the weakest, *epistemic* sense; ‘possible-for-all-I-know’. This kind of ‘conceivability’ is an excellent guide to ‘epistemic possibility’ then; just not to any genuine kind of real or metaphysical possibility. The present account (with respect to rational and metaphysical

modality, as I have been suggesting throughout) is that conceivability should be understood in terms of *a priori* or *rational* possibility, which is a much more objective modality, grounded ultimately in the metaphysical. With this understanding in place, *p* is (genuinely) conceivable only if *p* is metaphysically possible (in much the same way as I argue that *p* is—genuinely—*a priori* only if *p* is necessary, in previous chapters). On this understanding, the relevant kind of conceivability is a very good guide to the genuine (and philosophically interesting) kind of possibility; metaphysical possibility.<sup>269</sup>

---

<sup>269</sup> As it happens, my position here is close to the line Kripke himself appears to take at several places in *Naming and Necessity*. In discussing the possibility of Hesperus's not being Phosphorus (1980, pp. 140-44 for example), Kripke argues that if  $\lceil h = p \rceil$  then  $\lceil \Box h = p \rceil$ , thus it is, strictly, impossible and *inconceivable* that  $\lceil \neg(h = p) \rceil$ ; the illusion of the relevant 'possibility' rests on the confusion of a qualitatively identical epistemic situation ((i.e. epistemic possibility)) where some impostor 'Hesperus' is not Phosphorus) for the genuine, alleged (but false) metaphysical possibility that **Hesperus** is not **Phosphorus**.

## Chapter 6

# Frege and Kripke's Problems, Conceivability and Possibility

### 1 Introduction

In the previous chapter I discuss the necessary *a posteriori* with respect to conceivability and possibility, drawing the interim conclusion that—strictly—there are no necessary *a posteriori* propositions and that genuine conceivability entails possibility. Along the way I mention Frege's problem and Kripke's puzzle, suggesting that a more complete understanding of conceivability and possibility can only be reached after a consideration of the two problems. In this chapter, I propose to do just that; to extend my thoughts on the necessary *a posteriori* and conceivability to Frege and Kripke's problems; and to draw a final conclusion about the nature of conceivability and its relation to the *a priori* and metaphysical modality.

With respect to the two problems—both of which are very much addressed, yet left unsolved, by both Kripke and his followers<sup>270</sup>—as with the

---

<sup>270</sup> Especially Salmon 1986 and Soames 2002. Salmon (1986, p. 2) for example, claims that 'Hesperus (if it exists) is identical to Phosphorus' is necessary but *a priori* and even analytic. A potential objection to my final position on the necessary *a posteriori* is that I say very much the same as does Salmon. Against this I claim that (at best) putative necessary *a posteriori* sentences express (at least) two propositions, neither of which is fully analytic (see ch. 4, §3, for further discussion of analyticity).

necessary *a posteriori*, I aim to advance a novel and interesting solution. Following Lowe (2007a), and given my points on semantics, pragmatics and metaphysics in the previous chapter, I am not entirely convinced that the issue between direct and descriptive theories of reference is of great philosophical significance. That said, in the course of responding to the necessary *a posteriori*, I make certain semantic background assumptions, thereby suggesting what might be considered a mixed or hybrid account of *communication*.<sup>271</sup> Whilst my account does solve these traditional problems in a novel and interesting manner, it also helps to show that a key assumption (that it is clear what sentences express or assert—and so, relatedly, what an agent believes when he assents to a sentence) is common to both sets of problems; Frege and Kripke's problems and the necessary *a posteriori*. In qualifying this assumption (as I do in §2 below) one solves both sets of problems, thus paving the way for a positive conclusion on conceivability and modality (§3).

Regarding the necessary *a posteriori*, conceivability and possibility, I argue that there are (at least) two senses of conceivability; one grounded in mere *epistemic* possibility, which is a very poor guide to metaphysical possibility; and a second, *rational* possibility, which is broadly grounded in the metaphysical and is thus a very good guide to metaphysical possibility. I began this discussion towards the end of the previous chapter, but can only bring matters to a conclusion here (§3.1) after the discussion of Frege and Kripke's problems.

Finally, having concluded that neither the necessary *a posteriori* nor Frege and Kripke's problems pose a problem for conceivability-possibility claims, I conclude by summarising my position on conceivability and possibility (§3.2). I do this by way of a return to a case and a related set of potential issues that I highlight in several sections of the thesis so far; Goldbach's conjecture and coextensiveness.

---

<sup>271</sup> Like Kripke (but for different reasons—e.g. I am not at all sure that 'sentence meaning' is a fully philosophical qua *a priori* matter), I am wary of describing the semantic aspects of my position as a (philosophical) theory of reference. The point being, many writers would argue that my objections to strongly direct theories of reference boil down to a confusion of pragmatics for semantics. In response to this, I would reply that a successful, general account of *communication* (and so of what is believed, asserted and acted upon, for example) must involve *both* semantics and pragmatics (as well as metaphysics).

## 2 Frege's problem and Kripke's puzzle

In the previous chapter I remain fairly close to the issue of the necessary *a posteriori*, whilst touching on Frege's problem, as well as the central topic of conceivability and possibility, throughout. As I suggest, a full treatment of the latter involves a discussion of precisely what is being conceived as being possible; what is being imagined or thought (possibly) to be the case. This issue is undeniably both epistemic as well as metaphysical, involving as it does the central notions of conception, thought, belief and, ultimately (once again) propositions and circumstances. Consequently, I now focus in slightly more detail on the related problems commonly referred to as 'Frege's problem' and 'Kripke's puzzle'. Clearly there is a great deal of overlap between (at least) the first of these problems and the necessary *a posteriori*; if a proposition is necessary but *a posteriori*, this might go some way towards explaining how (for example)  $\lceil a = b \rceil$  might have the same modal status as  $\lceil a = a \rceil$  and yet differ in terms of cognitive significance; since the former might be *a posteriori* whereas the latter is *a priori*. Of course, in the previous chapter, I very much argue that the necessary *a posteriori* cannot do such work. This being the case, I now intend to work through the implications of my response to the necessary *a posteriori* with respect to Frege's problem (§2.1) and then Kripke's puzzle (§2.2).

### 2.1 Frege's problem

In very brief detail, Frege's problem centres upon the cognitive significance of true identity statements involving co-referring terms.<sup>272</sup> For example, if ' $a = b$ ' and ' $a = a$ ' are both true, then how can the former differ from the latter in terms of truth, proposition (or circumstance) asserted and so cognitive significance? If  $a$  is identical to  $b$ , then, presumably, ' $a = b$ ' and ' $a = a$ ' say the same thing, assert the same proposition. Of course, the Kripkean response to these

---

<sup>272</sup> Although the problem can also apply to standard, subject-predicate statements involving co-referential terms.

questions might be something along the lines of the following. Whilst ‘ $a = b$ ’ and ‘ $a = a$ ’ have the same modal value (they are both necessary truths), they have different epistemic and cognitive values; they are (necessary) *a posteriori* and *a priori sentences* respectively—thereby studiously avoiding the issue of propositions, perhaps. Now, as I suggest throughout the foregoing, this very much fails to answer the Fregean problem; if ‘ $a = b$ ’ and ‘ $a = a$ ’ have the same modal value, if they are (or express) the same truth, circumstance or proposition (i.e. if they say the same thing; if they assert the very same arrangement of objects and attributes), and if propositions are the objects of belief, there is, fairly clearly, a strong sense in which they ought to have the same epistemic and cognitive value as well.<sup>273</sup> As I try to demonstrate throughout the previous chapter, this kind of response will not do. Very much in line with Chapter 5 then, my initial response to Frege’s problem is as follows. Widely understood, ‘ $a = b$ ’ and ‘ $a = a$ ’ express effectively the same (wide) proposition; they assert the same arrangement of objects and attributes, namely the self-identity of whatever object is named by  $a$  (or more contentiously the being of  $a$  by the object named by  $a/b$ ); i.e.  $\lceil a = a \rceil$  or  $\mathbf{a} = \mathbf{a}$ . This proposition, of course, is necessarily true but also knowable on an *a priori* basis. Narrowly understood, on the other hand, ‘ $a = b$ ’ and ‘ $a = a$ ’ express different (narrow) propositions—they assert different circumstances; namely that some differently named object is (self-) identical (‘ $a = b$ ’:  $\lceil \exists x \exists y [Ax \wedge By \wedge x = y] \rceil$ ) or (arguably) that an identically named object is (self-) identical (‘ $a = a$ ’:  $\lceil \exists x [Ax \wedge x = x] \rceil$ ).<sup>274</sup> Narrowly then, the relevant propositions are contingent and *a posteriori* (as per my analysis of the necessary *a posteriori*). So my response to Frege’s problem is that there are (at least) two propositions, one necessary and *a priori*, and the other contingent but *a posteriori*. Widely, both assert the same necessary but *a priori* circumstance; narrowly, however, they express distinct but jointly *a posteriori* and contingent circumstances. So my analysis of Frege’s problem depends on which proposition ‘ $a = b$ ’ is taken to

<sup>273</sup> Unless of course, some difference in proposition is read off the apparent difference in cognitive value. I also stop short of attributing any of this to Kripke, who states suspicion about propositions (1980, pp. 20-1) and refrains from offering a solution to his own version of the puzzle (1979, pp. 259 and 267 for example). Hence the ‘Kripkean’, in the main text, above.

<sup>274</sup> Or, *mutatis mutandis*,  $\lceil \exists !x \dots \rceil$  for both. I explain the predicate form (for the names) in the notes and main body surrounding the introduction of proposition (1c) in §3 of ch. 5.

assert. Widely it is the same proposition as ' $a = a$ '; narrowly however, it is not—and this is where the cognitive difference applies, since narrowly ' $a = b$ ' expresses an *a posteriori* as opposed to an *a priori* proposition.

Originally of course, Frege's problem was posed as a question concerning the cognitive significance of true identity statements. If, on a fully worked out and very direct—'Millian'—theory of reference, ' $a = b$ ' and ' $a = a$ ' express the same proposition, then we (or rather the Millian) would appear to be straight back at the beginnings of Frege's problem. This being the case, the (very much related) problem of the intersubstitutivity of proper names in belief reports is often employed by Millians, so as to understand how ' $a = b$ ' and ' $a = a$ ' might express the same proposition, whilst differing in cognitive value or, perhaps better (according to such Millians), pragmatic significance.<sup>275</sup> Such accounts usually involve a three-way belief relation involving the original propositions as the ultimate objects of belief, with 'guises', 'modes of presentation' or 'ways of believing' acting as intermediaries between these and the believer *a*. So, returning to the Eminem and Slim Shady example, if *a believes*,

(2a) [ $e = e$ ]

in virtue of assenting to,

(2) 'Eminem is Eminem',

*a* thereby also *believes* (however counter-intuitive it might appear *prima facie*)

(1a) [ $e = s$ ],

i.e. what is expressed by

(1) 'Eminem is Slim Shady',

---

<sup>275</sup> I am thinking of course of theorists such as Salmon 1986, Soames 2002 (pp. 140-6 in particular) and even (although he claims to be offering a solution at odds with Salmon's) Braun 1998.

even if he does not assent to, or even dissents from, (1), since (2a) and (1a) are (*pace* a lot of what I have said so far) simply one and the same, singular proposition.

The counter-intuitiveness suggested above is simply the idea that the very fact that *a* would not assent to, or would dissent from (1), is perhaps evidence that (2a) and (1a) are not *precisely* the same proposition; and consequently that (2) and (1) are not simply different modes or ways of believing ‘that’ singular proposition. Instead, I argue, the fact that *a* assents to (2) but not to (1) and that he is surprised to learn (1), reads some popular music press, updates his music collection (etc.), is strong evidence that (2a) and (1a) are, in some (narrow) sense, different propositions—even if they (widely) say the same thing. What I am getting at here is that in such cases, if *a* is insisting that he believes (2) and does not believe, or even disbelieves (1), I think that someone who refuses to give any credence to *a*’s reports of his own belief (and consequent action) states, must be in the grip of a philosophical theory; and the level of counter-intuitiveness is just too high a price to pay to secure such a theory. Instead, if *a* insists that he does not believe, or disbelieves (1) and especially if he then goes out of his way to understand whether (1) is true, there must be some (however narrow) truth to the claim that *a* believes (2)/(2a) and does not believe (1)/(1a); i.e. that (2a) and (1a) are distinct propositions (in some sense). After all, in such a scenario, *a* is very likely to assent to (2) and  $\neg(1)$ . If  $\neg(1)$  asserts  $\neg(1a)$  (which seems very likely) and (2) asserts (1a) (which the defenders of the relevant theory would agree on, since they claim that (1a) is the same proposition as (2a)), then, quite clearly, *a* believes (1a) and  $\neg(1a)$ , which is clearly problematic.<sup>276</sup>

As I suggest above, there is perhaps a way out of this apparent contradiction that is discussed in the literature. Salmon (2006) and Braun (2006) effectively insist that *a* (‘unaware’<sup>277</sup> perhaps, that Eminem is Slim Shady) could believe (1a) under one ‘guise’, mode or way, and disbelieve it

---

<sup>276</sup> There is a sense here in which I am endorsing what Kripke calls the principle of disquotation (DP). Since I discuss this with respect to Kripke’s puzzle, below, I set this issue aside for now. Suffice to say that belief (and precisely what sentences assert) is a very complex matter and there is a sense (the wide one) in which (DP) might be false, and another (narrow) in which it might apply.

<sup>277</sup> I realise this is a contentious way of describing it.

under another; hence he would be ‘illogical, but not irrational’ (as per the title of Braun’s paper), in virtue of not believing a contradiction—at least not in an open, obvious manner. Schiffer (2006) replies that the contradiction cannot be so easily avoided, since it would be possible for *b* (*aware* that Eminem is Slim Shady) both to believe and disbelieve of *a* that *a* believes that Eminem is Slim Shady; thus the contradiction would resurface—*b* would be illogical and irrational, since *b* would not possess the relevant, *different* guises required to explain the contradiction. In slightly more detail, my version of this exchange is as follows.<sup>278</sup>

Alan and Brenda are two equally gifted logicians. Alan is unaware that ‘Eminem’ and ‘Slim Shady’ are co-referential, hence he is unwilling to assent to, and in fact denies, (1), whilst at the same time assenting to (2). Brenda is aware of the relevant co-referentiality and so assents to both (2) and (1). Applying the apparently uncontroversial principle of disquotation,

(DP) if an agent *a* sincerely and reflectively assents to a sentence *s* (in a context *c*), then *a* believes, at the time of *c*, what *s* expresses in *c*,<sup>279</sup>

it seems fair to conclude that Alan believes (2a) and disbelieves (1a), whilst Brenda believes both (2a) and (1a). This is perhaps a standard argument for a more descriptivist account of the significance of names; since it is possible to believe (2a) and disbelieve (1a), there must be a sense in which they are not the same proposition. In response to this however, the direct reference theorist can insist that Alan, whilst appearing to be illogical, is not in fact irrational, since he can ‘take’ Eminem to be identical to Slim Shady under one guise or mode of presentation, but not identical to Slim Shady under another; he can ‘take’ Eminem to have the property of being self-identical, even if he ‘takes’ Eminem to be distinct from Slim Shady.<sup>280</sup> At this point, Schiffer objects that it would be entirely possible that

---

<sup>278</sup> As well as the authors cited in the text here, see Perry 1977 and Kaplan 1969.

<sup>279</sup> Suitably amended from the original, to deal with sentences and what they might express in different contexts and times. See Kripke 1979, pp. 248-9.

<sup>280</sup> Salmon (2006, pp. 369-70) is very clear on this point.

- (3) Brenda believes that Alan believes that Eminem is Eminem and that he disbelieves that Eminem is Slim Shady,

but of course, since Brenda is aware that Eminem is Slim Shady, and since, according to the Millianism that Salmon advocates, she therefore does not possess two guises of Eminem. Therefore (3) appears to imply that

- (4) Brenda believes and disbelieves that Alan believes that Eminem is Slim Shady.

The apparent problem, of course, is that because Brenda does not possess the two, distinct guises of Eminem, (4) does appear to attribute irrationality to Brenda. The suggested resolution being to adopt something more akin to a descriptivist semantics. Unfortunately for Schiffer, the argument here is a little quick. The point being, what (3) really implies is not (4) (at least not without a great deal of detailed debate) but something more like

- (5) Brenda believes that Alan believes that Eminem is Eminem (under Alan's guise of 'Eminem') and that Alan believes that Eminem is not Eminem (under Alan's guise of 'Eminem,' and 'Slim Shady'),

which, of course, is fairly innocuous for the direct reference theorist.<sup>281</sup>

Now, it would be possible to spend much time debating the intricacies of this argument. In what follows, I set this debate aside, focusing instead on a simpler, clearer and more direct objection to simple Millianism, as follows. If we accept (DP) in addition to all of the assent claims (prior to (3)) above, as well as a Salmonsque Millianism about proper names, we get the following situation:

- |     |                     |                     |
|-----|---------------------|---------------------|
| (6) | Alan assents to (2) | [Premise]           |
| (7) | Alan believes (2a)  | [From (DP) and (6)] |

---

<sup>281</sup> Even if there is a deeper issue as to the nature of guises. As I am not a (simple) direct reference theorist, and as the 'descriptive' aspect of my account deals with this issue, I set this worry aside presently.

- |      |                                      |   |
|------|--------------------------------------|---|
| (8)  | (2a) is the same proposition as (1a) | [Millianism]  |
| (9)  | Alan believes (1a)                   | [(7) and (8)]   |
| (10) | Alan does not assent to (1)          | [Premise]   |
| (11) | Alan does not believe (1a)           | [Salmon's claim. <sup>282</sup> Also derivable from a suitably modified (DP) <sup>283</sup> and (10)] |

This is all well and good so far, since the Millian can make the same points concerning belief and non- (or dis-)belief of (1a) as before; (9) and (11) do not expose an irrationality, since Alan believes and disbelieves (1a) under different guises. Having said this however, accepting all of the same points and principles, we also get:

- |      |  |                 |
|------|--|-----------------|
| (12) | Alan assents to $\neg(1)$                        | [Premise]       |
| (13) | Alan believes $\neg(1a)$                         | [(DP) and (12)] |
| (14) | $\neg(1a)$ is the same proposition as $\neg(2a)$ | [Millianism]    |
| (15) | Alan believes $\neg(2a)$                         | [(13) and (14)] |

In short, the anti-Millian urges that given all of the relevant assumptions, a case can be made for the claim that Alan believes (2a), (1a),  $\neg(1a)$  and  $\neg(2a)$  (and despite the sentence expressing  $\neg(2a)$  appearing to be very clearly *a priori*).<sup>284</sup>

At this point the Millian might attempt to make all of the same manoeuvres as before—Alan believes the relevant 'contradictions' under suitable guises,

---

<sup>282</sup> Salmon 2006, pp. 369-70.

<sup>283</sup> Perhaps:

(CON-DP) If an agent *a* sincerely and reflectively denies (or withholds assent from) a sentence *s* (in a context *c*), then *a* disbelieves (or does not believe), at the time of *c*, what *s* expresses in *c*.

<sup>284</sup> McKay and Nelson (2008, §5) introduce a similar objection; if Lois Lane believes that (a) Superman is stronger than Clark Kent, and if names are inter-substitutable *salva veritate*, then Lois also believes that (b) Superman is stronger than Superman and (c) Kent is stronger than Superman. Salmon (1992) and McKay (1991) attempt to resolve this paradox, but, to my mind, both papers fail to address the central concern; that there is no clear, Millian reason for favouring Lois's (or Alan's) rational beliefs over her 'irrational' ones. In addition, as I urge throughout (and as McKay and Nelson admit), that Lois would seek help from Superman, but not Kent, in strength-requiring situations, is at least *prima facie* evidence that she believes (a) but not (c)—or (b) for that matter. As McKay and Nelson also go on to suggest, the force of the objection rests on the strength of the claim that explanatory, predictive and rational concerns are an essential part of a full solution to Frege's problem (and Kripke's puzzle); a claim which I argue for throughout.

thereby retaining his rationality—however, the problem now is that applying Millianism and (DP) alone, does not appear to provide any reasoned motivation for favouring Alan’s belief in (2a), say, over his belief in  $\neg(2a)$ , or his belief in  $\neg(1a)$ , for example, over his belief in (1a) (both of which choices would resolve the apparent contradiction). My account on the other hand, can motivate just such reasons; I can argue that there is a strong (narrow) sense in which (2a) and (1a) are distinct propositions, and in which Alan’s assent to (2) but not (1) is strong evidence that he (narrowly) believes (2a) and  $\neg(1a)$ ; hence Alan (narrowly) believes neither (1a) nor  $\neg(2a)$ . In addition, since rationality is grounded in the metaphysical and since Alan is rational, I can claim that there is a strong sense in which Alan *cannot* (rationally and *widely*) believe either  $\neg(2a)$  or  $\neg(1a)$ , since (widely) both  $\neg(2a)$  and  $\neg(1a)$  are metaphysically impossible; and Alan cannot be rational and believe an impossibility. Thus I can argue that (11) and (15) do not follow; (8) and (14) (i.e. strong Millianism) should be rejected at the expense (at least initially, or perhaps widely) of (DP).<sup>285</sup> That said, the issue of (DP) and its narrow and wide truth or falsehood very much concerns Kripke’s puzzle. So, having discussed Frege’s problem and its propositional attitude-ascriptional variant, let us move on to this second puzzle, and the nature of (DP), in slightly greater detail.

## 2.2 Kripke’s puzzle

Kripke’s puzzle<sup>286</sup> can be viewed very much as a response to some of the implications of the ‘picture’ of reference painted in *Naming and Necessity*, and especially of the direct reference theories inspired by that work. In short, if a name’s only semantic contribution is its reference, then it would appear that sentences such as (1) ‘Eminem is Slim Shady’ and ‘Cicero was bald’, have the same alethic, modal and cognitive, epistemic values as (2) ‘Eminem is Eminem’ and ‘Tully was bald’<sup>287</sup> respectively. That is, if a strong version of the theory of direct reference obtains and if propositions are the objects of belief, then we

---

<sup>285</sup> Although, as below, there is good reason to suspect (DP) more widely.

<sup>286</sup> Kripke 1979.

<sup>287</sup> As discussed by Kripke 1979, pp. 239-41.

run straight back into Frege's problem—as first advanced by Frege against the Millian theory of reference.

Now, as much as many of the arguments of *Naming and Necessity* are advanced to demonstrate that that sentences such as (1) and (2) have the same alethic and modal status, clearly that work also seems to suggest that, in some sense at least, they have different cognitive values; (1) is, for example, *a posteriori* whereas (2) is *a priori*; it might be possible to believe (2) whilst not believing (1). In terms of *propositions* of course, this is perhaps confusing, since if (1) and (2) have the same alethic and modal status, they ought to express the same, singular proposition; but, if they express the same proposition, and if propositions are the objects of belief, then it ought to be impossible to believe (2) whilst not believing or disbelieving (1). Indeed, recalling his remarks about the 'apparatus of propositions' breaking down in this area, the lesson Kripke takes from 'A Puzzle about Belief' is not as positive as the picture from *Naming and Necessity* might suggest—the puzzle *is* a puzzle, and Kripke is not at all sure how to solve it.<sup>288</sup> That said, the puzzle is perhaps best seen as a response to some of the implications of the direct theory of reference. The point being, whilst Millianism appears to run straight into Frege's problem, Kripke's puzzle is both directly analogous to this and (according to Kripke) not ruled out by either direct or descriptive theories of reference. Indeed, given that the issue does not turn on substitutivity, but on (DP)<sup>289</sup> as above, it is fairly clear that Kripke aims to replace Frege's problem with his own puzzle. Moreover, as we shall see below, turning as it does on (DP), the puzzle is perhaps more strongly entailed by descriptivism (if this endorses (DP)) than it is by Millianism (which might suggest that (DP) is false<sup>290</sup>). Consequently, given the barrage of criticisms of descriptivism in *Naming and Necessity*, perhaps Kripke's strongest conclusion from the 'Puzzle' is that even if both descriptivism and Millianism entail the puzzle, the latter is better placed with respect to the modal, epistemic

---

<sup>288</sup> Kripke 1979, pp. 267 and 259. Indeed, Kripke spends some time discussing (but ultimately rejecting) the possibility that his earlier (1972/1980) picture/theory was a kind of hybrid theory (modally Millian but epistemically Fregean); see 1979, pp. 243-4 (for the discussion), n. 10 (for the initial rejection) and pp. 247-8 (for the outright rejection).

<sup>289</sup> As urged by Kripke at 1979, p. 268.

<sup>290</sup> Although this is a conclusion that Kripke stops short of in the 'Puzzle'.

and semantic arguments.<sup>291</sup>

Kripke introduces the puzzle by way of the Frenchman Pierre's belief(s) about the pulchritude of Londres/London. As this version of the puzzle relies on both (DP) and what Kripke describes as the principle of translation, and as there is a second version of the puzzle that only involves (DP), I focus on the latter version, so as to isolate the problem with respect to Millianism, descriptivism and (DP). Here then is the puzzle.<sup>292</sup> Peter, who we are to assume is a fully rational and logically astute language user, learns that someone called 'Paderewski' is a famous pianist. He thereby assents to

(16) 'Paderewski has musical talent',

which via (DP) appears to allow us to conclude that

(17) Peter believes that Paderewski has musical talent.

Later, Peter hears about someone called 'Paderewski' who is a Polish politician. Believing politicians to have no musical ability, Peter assents to

(18) 'Paderewski has no musical talent',

which, as before, via (DP) entails

(19) Peter believes that Paderewski has no musical talent.

Of course, 'Paderewski' happens to name just one man, who is both a politician and a talented pianist. Thus, since we seem to have two identical tokens of a single name, (17) and (19) appear deeply contradictory; Peter appears to believe both that

---

<sup>291</sup> As very much hinted at 1979, pp. 269-70.

<sup>292</sup> Kripke notes at several places (e.g. p. 242 and p. 249, n. 22) that the puzzle only concerns *de dicto* belief. As this is a large assumption that, I think, impinges on the best response to the puzzle, I do not share it.

(20) Paderewski has musical talent

and,

(21) Paderewski does not have musical talent.<sup>293</sup>

Since Peter does assent to (16) and (18), according to Millianism and (DP), he would appear to believe (20) and (21). Accordingly, there appears to be no simple solution to the puzzle in which (20) is denied and (21) accepted (or *vice versa*); if we are to accept (DP) and a Millian, direct theory of reference, then we seem compelled to believe that Peter holds contradictory beliefs concerning (the individual) Paderewski. This then is the puzzle; Peter, who is fully logical and rational, appears to hold contradictory beliefs, and all apparently because he is not aware that Paderewksi (the musician) is Paderewski (the politician) (as Peter might put it), or that 'Paderewksi' is a single, directly referential name, picking out a single individual who is both a musician and a politician (as the Millian might put it).

All of this being the case, we would appear to have two (or three) options; deny (DP) or deny Millianism (or perhaps both). Now, as I have stated several times already, my aim is not to provide detailed exegesis of Kripke's position and theories. So far I have more or less kept to this aim but now I must discuss, in a little detail, what I think were Kripke's aims and conclusions in setting out this paradox. What is at issue is the status of the direct theory of reference as against its main opponent, which Kripke describes occasionally as 'descriptivism', 'Fregeanism' or 'the Frege-Russell view'. Now, as before, I am perhaps less interested in which, if any, of these views is correct, than I am in the epistemology and metaphysics of rationality and modality, and in particular

---

<sup>293</sup> See the previous note. The apparent contradiction is clearest if the beliefs are wide and *de re*, since it then appears that Peter (widely) believes both that **Paderewski** has musical talent and that **Paderewski** does not have musical talent. As I suggest below (despite Kripke's insistence that the contradiction arises in cases of *de dicto* belief), things are not at all so clear with what I call 'narrow' beliefs (although as I urge elsewhere, the narrow is not precisely the same as the *de dicto*). It seems entirely possible for example, for Peter to believe that something called Paderewksi is musical and something called Paderewksi is not musical, where the two 'Paderewskis' are (at least taken as) different names. I explain this in much greater detail below.

now, in precisely *what* is being conceived of as being possible.<sup>294</sup> So, whilst I appear to argue for a ‘hybrid’ semantics in what follows, this is to be viewed very much as being argued for from a metaphysical perspective; there are certain alethic, modal and cognitive conditions that a suitable solution to this puzzle must satisfy. Purely in terms of objects and their attributes (that is, in wide, *de re* terms), the best approach to semantics and belief would appear to be broadly Millian; but with respect to how we have these beliefs, that is, in terms of particular individuals (narrowly) believing that Eminem is/is not Slim Shady, or that Paderewski is/is not musical, for example, the best solution might well be more ‘descriptivist’ (if not in the ‘Fregean’ sense that Kripke appears to intend).<sup>295</sup> Hence, in what follows, I argue for a mixed or ‘hybrid’ approach to semantics. That said, I will need to discuss some of Kripke’s assumptions and arguments, and make some additional ‘Kripkean’ implications (that is, to extend Kripke’s thoughts perhaps a little beyond what he writes in the ‘Puzzle’, since he is—as ever—quite reticent in advancing a position), in order to set out my own arguments and conclusions.

So what is Kripke trying to do in the ‘Puzzle’? If there is (or appears to be) no solution to the paradox, shouldn’t we reject (DP) and/or Millianism? Well, this is not quite the conclusion that Kripke opts for. Instead he suggests, first, that (his version of) Fregeanism and Millianism are equally placed with respect to Kripke’s puzzle. Either theory, in addition to (DP), appears to result in the paradoxical sets of beliefs and belief attributions, and it “is wrong to blame unpalatable conclusions...on substitutivity” (i.e. Millianism); it is principles such as (DP) that are perhaps questionable.<sup>296</sup> Second, presumably Kripke is urging that his puzzle replaces Frege’s problem as the prime paradox that “any theory of belief and names must deal with”.<sup>297</sup> Moreover third, since the arguments of *Naming and Necessity* are deeply telling against the modal metaphysics, epistemology and semantics of descriptivism(s) (since Kripke takes Fregeanism

---

<sup>294</sup> And since I take what is rational to depend, ultimately, on metaphysical modality, my concerns are very arguably more metaphysical than epistemic.

<sup>295</sup> In what follows, Kripke claims to be attacking a ‘Fregean’ descriptivism, which might not be a position thoroughly attributable to Frege. I use ‘Fregeanism’ (occasionally with explicit quotation marks) to label this position and ‘descriptivism’ to indicate a wider position, potentially stronger than the one Kripke attacks.

<sup>296</sup> 1979, pp. 267-8. Sosa 1996 presents a similar interpretation of Kripke’s aims here.

<sup>297</sup> Kripke 1979, p. 267.

to be so definitive), we ought to prefer Millianism, even if it appears to be equally badly placed with respect to Kripke's puzzle.

As it happens, Kripke could perhaps have gone further than this, since (i) some versions of Millianism might be able to avoid the puzzle in being committed to a very much qualified version of (DP), and (ii) Fregeanism is arguably more committed to (DP) (and so the puzzle) than is Millianism.<sup>298</sup> Dealing with (i) first, on a simple reading of Millianism conjoined with (DP), that Peter assents to (16) and (18) does seem to imply that he believes (20) and (21)—i.e. a paradox, since (according to Millianism) (21) is the same proposition as  $\neg(20)$ . The versions of the theory that might avoid this conclusion<sup>299</sup> would qualify (DP) by claiming that Peter's assent to (16) and (18) only entails that he believes (20) under one guise or mode (of Paderewski or of the whole proposition) and (21) (or  $\neg(20)$ ) under another; thus Peter is 'illogical but not irrational'. So, the qualified (Millian-DP) would add a clause concerning *a*'s belief of what *s* expresses *under a guise* to the original (DP). Kripke, of course, does not make this kind of move—I raise the point merely to suggest a potential strengthening of his position.<sup>300</sup>

Turning to (ii), the point here is that it is Peter's assent to (16) and (18), plus the 'Fregean' idea that sense determines reference and so generates two contradictory beliefs about the same object, **Paderewski**, which lies at the heart of the paradox. That is, it is the claim (the Fregean version of (DP) effectively) that Peter appears to have *two* beliefs, plus realism *about what* Peter has those beliefs (namely Paderewski's musical talent or otherwise) that generates the paradox. The point being, according to Kripke's Fregean, if Peter assents to (16)/(18) he believes (20)/(21) qua distinct propositions, but, of course, since **Paderewski** is the thing that satisfies both senses of 'Paderewski' in (16) and (18), *really*, Peter believes (20) and  $\neg(20)$  (or, of course,  $\neg(21)$  and

---

<sup>298</sup> Having said this, concerning (i), whilst Millianisms might avoid the puzzle, there is a strong sense in which they cannot successfully respond to it, and, with respect to (ii), *descriptivism*, more widely construed, might be able both to avoid and explain the puzzle. I explain both points throughout what follows.

<sup>299</sup> I am thinking of positions advanced by Perry (in several articles of his 1993), Salmon 1986 and Soames 2002.

<sup>300</sup> In fact, I criticise this position (using points from the Schiffer-Salmon exchange discussed above) in what follows; effectively I urge that Millianism avoids but cannot satisfactorily respond to Kripke's puzzle, in an exactly parallel way to my analysis of Millianism and Frege's problem above.

(21)). In this way, Kripke might have argued that Fregeanism plus a simple realism about the *ultimate* objects of belief (i.e. individual objects and their attributes), is sufficient to generate the paradox; hence (although some Millianisms appear to entail Frege's problem), perhaps Fregeanism is more strongly committed to (DP) and Kripke's puzzle than is Millianism (as qualified above)! The idea then is that, strictly, Kripke's puzzle exposes the problematic assumption at the heart of Frege's problem, (DP), and Fregeanism is at least as, if not more committed to (DP) than is Millianism.<sup>301</sup> Now, if the anti-Fregean themes of *Naming and Necessity* were added to this argument, Kripke would have an even stronger position against Fregeanism and in favour of suitably qualified Millianisms.<sup>302</sup>

Having said all of this, even if the Kripkean argument can be thus strengthened, it is possible to argue against all of the relevant, positive claims of *Naming and Necessity*, much as I have done above, such that a 'hybrid' account with a 'descriptivist' aspect, is preferable to either a fully fledged Fregeanism or, indeed, a direct Millianism. So whilst one might accept the first, main point (of Kripke's argument, outlined a few paragraphs above), that Millianism is at least as well placed as is Fregeanism with respect to Kripke's puzzle, the third, main point, that *Naming and Necessity* undermines (all) descriptivism(s) is not as well supported. Thus the status of the second point (that Kripke's puzzle somehow replaces Frege's problem) is also unclear; and the conclusion, that we should adopt Millianism, is unsound. Instead of this line of reasoning, I would argue as follows. As much as Millianism might be as well placed as is (or perhaps better than) Fregeanism with respect to Kripke's puzzle, it is still badly placed, since it offers no appealing solution. The point is, even if we argue that Fregeanism is committed to (DP) and thereby might run straight into Kripke's puzzle, if Millianism denies (DP),<sup>303</sup> it is then in no good position to suggest which of, for example, Peter's 'beliefs' (20) and (21) we should respect; which

---

<sup>301</sup> All of this said, note that Frege's problem might still lurk in the background—even if Kripke's puzzle is separately entailed by 'Fregeanism', it is not entirely clear that Millians can successfully respond to Frege's problem, as I argue above, and suggest again below.

<sup>302</sup> Having said this, I am not entirely sure that this paragraph would best represent Frege's response to Kripke's puzzle. That is, I am not sure that Fregean (or other) descriptivisms do fall foul of the puzzle (notwithstanding the results of the modal, epistemic and semantic arguments of *Naming and Necessity*).

<sup>303</sup> Which (Millian-DP) effectively does, and which Kripke only just stops short of admitting in the 'Puzzle'.

of his assentings to (16) or (18) we should prefer; i.e. (to paraphrase Kripke) *does* Peter believe that Paderewski is musical or not? What I am getting at, of course, is that even if Fregeanism entails Kripke's puzzle, Millianism goes no way towards resolving it; without something like (DP), we are in no clear position to say what Peter believes.

So, if Fregeanism entails Kripke's puzzle and Millianism fails to solve it, perhaps what is needed is an account that (i) respects some of the wide (perhaps *de re*) aspects of the puzzle, whilst at the same time (ii) admits that something like (DP) is a requirement of our (narrow) belief-attribitional practices. To this end, first, I suggest that *widely* we ought to deny (DP) and argue that, with respect to **Paderewski**, Peter believes *neither* that he is musical nor that he is not musical. How might we say this? Well, unlike standard Millianism, a correct account of the wide, metaphysical *and* rational aspects of the puzzle, must clearly deny (DP). I say this for the following reasons. As with the  $\lceil e = s \rceil$  case, where a full, wide understanding of that proposition is an understanding that it is the same proposition as  $\lceil e = e \rceil$  (either it asserts the self identity of Eminem, or it asserts the being of Eminem by Slim Shady/Eminem—all understood widely qua objects), a full, wide understanding of (20), would (qua full, wide understanding), rule out the possibility of (21) (and *vice versa*).<sup>304</sup> Consequently, if Peter truly believes (20) he cannot (rationally) believe (21) at the same time (and *vice versa*). Thus there must be something wrong with the conclusion that Peter is rational and believes both (20) and (21). That he is rational is an assumption; rejecting either of (20) or (21) would be *ad hoc*. We have already seen that (DP) is deeply suspect; so it is this thesis that ought to be rejected—at least on the wide aspect of meaning. That Peter assents to (16) and (18) does not therefore justify either (17) or (19). If Peter (rationally) believed either (20) or (21) he ought, at the same time, to believe the negation of the contrary proposition.

As indicated above, the main benefit of this account of the wide aspects of belief over its Millian rival, is that the latter cannot account for what Peter believes. Very much in line with Kripke, we are still left with that very question, I argue, by both standard and guise- Millianism. My account on the other hand,

---

<sup>304</sup> Ignoring issues of time and tense.

in basing what it is rational to believe in wider, metaphysical modality, has it that it is impossible to (rationally) believe (and impossible to conceive of) a proposition (or circumstance) that is metaphysically impossible. Now, **Paderewksi's** being musical and not being musical (at the same time) is logically and metaphysically impossible; it is therefore not possible to (rationally) believe the proposition and to conceive of the relevant arrangement of objects and attributes.

Now, second (as mentioned above), there is still something in the region of this paradoxical belief that we *can* say Peter believes. What is it then that Peter (narrowly) believes? As hinted above, if we respect the narrow aspects of belief-attribution, it is possible to retain something like (DP) and to argue that Peter does, indeed, believe something like the conjunction of (20) and (21). He does not, however, believe the (irrational) conjunction of the *wide* versions of (20) and (21); instead he believes that something called 'Paderewksi' is musical and something (else) also called 'Paderewski' is not musical; formally,

$$(22) \quad \exists x \exists y (Px \wedge Py \wedge Mx \wedge \neg My \wedge \neg(x = y)).^{305}$$

In short then, Peter (narrowly) believes the conjunction of two propositions (derivable from his assent to (16) and (17) plus (DP)), which are not mutually contradictory; it is entirely metaphysically possible that two identically named but distinct things have 'contradictory' properties.

Just to tidy up, in terms of the name(s) 'Paderewski', depending of course on the subject and context, it is also entirely possible that Peter believes that the two 'Paderewskis' are different tokens of the same name, referring to different men, or that he believes that 'Paderewski<sub>1</sub>' (the musician) is simply a different name from 'Paderewski<sub>2</sub>' (the politician)). Either way, *narrowly* Peter can believe both (20) and (21) and that 'Paderewski' names two, distinct men. This being the case, at least narrowly, the two relevant beliefs are distinct (even if *widely* (20) is the same as  $\neg(21)$ ). This both explains and resolves the paradox at the heart of Kripke's puzzle.<sup>306</sup>

---

<sup>305</sup> As before, I explain the use of 'predicate-names' in the notes and main body surrounding the introduction of proposition (1c) in §3 of ch. 5.

<sup>306</sup> In response to someone (like Sosa 1996) who would object that I am simply denying (DP), I

In very brief summary, what I am saying is that we need both wide and narrow aspects of belief in order to capture both the (wide) object-involving (i.e. *de re*) and the (narrow) cognitive and pragmatic (but also, ultimately, object-involving) elements of rationality and belief attribution. Whilst a simple Millianism still runs straight into Frege's problem (and Kripke's puzzle), even if Fregeanism (and not guise-Millianism) similarly runs into Kripke's puzzle, since (guise-)Millianism does not resolve the issues at the heart of the puzzle and a hybrid position does, we ought to adopt the hybrid position. In this way then, I very much agree with Kripke; on both Fregeanism and Millianism, Kripke's puzzle *is* a puzzle and there is no clear solution. Combining very much qualified versions of both theories, the puzzle is resolved; there is a solution. Very much as with the contingent *a priori* and the necessary *a posteriori*, the apparent paradox results from a confusion of the wide, *de re* level (where proposition (20) is a contradiction of (21)), with the narrow level (where relevant versions of (20) and (21) are not contradictory). Since belief also operates at both levels, it is at least clear that Peter is not at all (narrowly) irrational, since even if his beliefs appear widely contradictory, narrowly this is not at all the case—he is simply unaware that the two 'Paderewskis' name the same man and so cannot be said (widely) to believe (20) and (21). That said, if Peter is rational, then the appearance of irrationality at the wide level is illusory; if (*arguendo*) Peter is rational, then if he believes (20) he cannot believe (21), and *vice versa*. Since there is no clear motivation for denying that Peter believes either particular proposition and since (as I have argued above) (DP) is highly suspect (on the wide aspect), we should reject (DP) and conclude that Peter does not believe either proposition; he merely has an incomplete grasp of the nature of **Paderewksi** and so cannot be said to believe very much about Paderewski at all.

---

would reply that I am *both* denying that principle (widely) and accepting it (narrowly). In addition (*pace* Sosa 1996, pp. 384-5), I am not sure that the puzzle can be posed without (DP), since if I think I believe [John Glenn (the astronaut) has been to space *and* John Glenn (the politician) has not] (where I am unaware that the two names are co-referential), then in one (wide) sense I am mistaken, since I cannot (rationally) believe such a proposition, yet in another (narrow) sense I can and *do* believe such a proposition. That is, belief is a lot more complicated than it appears at first glance! As well as to Sosa 1996 (and some of the writers mentioned in n. 36 of the previous chapter), my discussion of the puzzle is indebted to Perry and Crimmins 1989.

### 3 Conceivability, rational and metaphysical modalities

Whilst the main issue of the thesis is the relationship between rationality and modality, in this and the previous chapter I have focused on two apparently tangentially related sets of problems; the necessary *a posteriori* and Frege/Kripke's problems. I focus on these problems as I believe they must be resolved in order to understand fully the relationship between conceivability and possibility. In the previous chapter, I outline the relevance of the necessary *a posteriori* (in terms of the apparent 'conceivability' of metaphysically impossible circumstances); in the present chapter I discuss Frege/Kripke's problems (with respect to getting clear on the nature of—rational—belief and, relatedly, of precisely what is being—widely or narrowly—conceived). It is now time to bring together what I say on these related sets of problems (in §3.1 below). After discussing conceivability and possibility, I turn to a potential objection that there is an unresolved tension in my position; namely that with respect to the necessary *a posteriori*, I claim that it is clear what sentences express, whereas *vis-à-vis* Frege and Kripke's problems I deny this intuition. In order to resolve this apparent tension I discuss the distinction between semantics and pragmatics, arguing that my hybrid position is the best one can do in response to the necessary *a posteriori*, but that Frege and Kripke's problems very much show that the issues of sentence-expression and belief attribution are not at all clear-cut.

Given my position on conceivability and possibility, there appears to be one final tension in my position; I appear to claim that impossibility entails inconceivability, yet metaphysical modality more generally does not entail the relevant, rational modality—as evinced by the likes of Goldbach's conjecture (GC); i.e. necessary but unknowable propositions. In order to resolve this tension, (in §3.2) I return to the discussion of (GC) and the coincidence thesis, and of 'conceivability' qua epistemic and rational possibility (from both this and previous chapters). In short, I accept a much attenuated version of the coincidence thesis, but argue that the modal and rational domains, whilst very closely tied, are not coextensive.<sup>307</sup>

---

<sup>307</sup> In order to account for modal error (given such close ties), I argue that the notions of

### 3.1 The problems, conceivability and possibility

Beginning with Frege and Kripke's problems, very much in line with my position on the necessary *a posteriori*, taking the most problematic case (Peter's 'believing' that Paderewski is both musical and not musical), I argue that a precisely analogous confusion obtains. Since **Paderewski** cannot be both musical and not musical (at the same time), as this would be a metaphysical impossibility, it is—strictly—not possible for Peter to fully and rationally believe a proposition asserting such a circumstance. Now, as much as it appears that Peter believes that Paderewski is musical (i.e. (20) above) and that Paderewski is not musical ((21) above), since (20) and (21) are contradictory, if Peter genuinely believed (20) he would thereby believe  $\neg(21)$ —and *vice versa*. Thus, effectively denying (DP), I claim, Peter (widely) believes neither (20) nor (21)—even if he does believe distinct, narrow versions of the two propositions. All of this being the case, since **Paderewski's** being both musical and not musical is (logically and) metaphysically impossible, it is also—strictly—rationally impossible; it is possible neither to rationally believe, nor to conceive of the relevant proposition and arrangement of object and attributes.

Throughout this chapter, I make use of a distinction between semantics and pragmatics—effectively appearing to assume that the semantics of the necessary *a posteriori* are reasonably clear (in that relevant sentences clearly express both wide and narrow propositions), yet denying (DP) with respect to the wide aspect of my analysis of Kripke's problems (arguing that it is not entirely clear what *a* believes when *a* assents to a sentence). A potential objection at this point is that this reveals an unresolved tension, whereby I am saying that the semantics of the necessary *a posteriori* are clear, whereas those of Kripke's puzzle are not; i.e. in effect, I am offering different solutions to the two sets of problems.

In response to this, as I state several times during my initial analysis of the

---

epistemic and rational possibility are both central, and, crucially, distinct; the former is both clearly non-coextensive with, and a very poor guide to, metaphysical possibility; whereas the latter (*a priori* or rational) possibility, whilst not fully coextensive with, is an exceptional guide to metaphysical possibility—*genuine* conceivability, qua rational possibility, entails (metaphysical) possibility. As my treatment of modal error pertains to the rational domain as a whole, I deal with this issue more fully in the concluding chapter.

necessary *a posteriori*, it is arguable that sentences such as (1) express (at best,<sup>308</sup> at least) two (but depending on context and pragmatics, very possibly more) propositions; some wide, necessary and *a priori*, like (2a), and others narrow, contingent and *a posteriori* like (1b) and (1c). What I am saying then, is that going along with some of the background assumptions of *Naming and Necessity*, and of the ensuing direct-descriptivist debate on the theory of reference, the best one can argue for is a mixed, hybrid 'direct' (wide) and 'descriptive' (narrow) account. Throughout the relevant sections however, I do remind the reader that all of this is very much in line with such background assumptions and that these assumptions are to be challenged later on.

Whilst discussing Frege and Kripke's problems, I very much begin to question such background assumptions, and especially (DP). What I say there, is that if we accept (DP) and Millianism (or (DP), 'Fregeanism' and realism about reference determination), then we very much get the paradoxical result that a rational agent *a* can believe of **Paderewski** that he is both musical and not musical, or, similarly, that *a* can (rationally) believe (the logical and metaphysical impossibility)  $\neg(2a)$ . This being the case, as (DP) is the common (and clearly problematic) assumption, and as both simple Millianism and descriptivism are otherwise problematic (Millianism falling foul of Frege's problem; descriptivism arguably running into at least Kripke's three central objections), I urge that we reject all of these assumptions and theories. Instead, we should accept a hybrid account of reference as outlined above, together with the more *a priori* and philosophical claim that the rational and the modal are extremely closely tied. Moreover, whilst the hybrid account of reference is relatively interesting and is perhaps the most plausible response to both the necessary *a posteriori* and Frege/Kripke's problems, it is the *a priori* and clearly philosophical claims about metaphysical and rational modalities that are at the heart of this thesis. So, from previous chapters, genuine apriority entails necessity and now, genuine aposteriority entails contingency; strictly, there are no necessary *a posteriori* propositions. In addition, I also argue that if something is metaphysically impossible, then (strictly) its negation is inconceivable; in virtue of being metaphysically impossible, it is also (strictly)

---

<sup>308</sup> Which was intended (in earlier sections) to indicate that I was aware of the pragmatic issues all along.

rationally impossible. That is, something is genuinely conceivable only if it is possible; genuine conceivability entails possibility.

### 3.2 (In)conceivability and (im)possibility: Goldbach's conjecture again

As noted above, there is perhaps something to say about the likes of Goldbach's conjecture (GC) and other potentially necessary but unknowable truths here—and the same points apply, *mutatis mutandis*, for contingent but unknowable truths such as (CGC)—as per Chapter 3. The point being, if my conclusions concerning the contingent *a priori*, the necessary *a posteriori* and Frege/Kripke's problems apply universally (that is, if genuine apriority entails necessity, if aposteriority entails contingency and, especially now, if conceivability entails possibility—and by contraposition,<sup>309</sup> if impossibility entails inconceivability), there would appear to be a potential and very problematic tension at the heart of my position. This is that such necessary but unknowable truths as (GC) are presumably not *a priori* (given their status as currently unknown and potentially unknowable)<sup>310</sup> but (given what I say on (in)conceivability and (im)possibility above) their negations appear to be inconceivable, in virtue of being metaphysically impossible. The tension then being that (GC) is not *a priori*;  $\neg(\text{GC})$  is impossible, so inconceivable (or rationally impossible); and, presumably, the negation of an inconceivability (or rational impossibility) being (rationally necessary or) *a priori*; (GC) is both *a priori* and not *a priori*? So, either there is a contradiction within my position, or one of the above clauses must give.

The point here is vital to the conclusion of my thesis, so let me go into a little more detail. On the assumption that (GC) is true, it is a mathematical and so a necessary truth; accordingly, its negation  $\neg(\text{GC})$  is going to be necessarily false or metaphysically impossible—given the modal principle  $\Box p \leftrightarrow \neg\Diamond\neg p$ . On the additional assumption that the alethic status of (GC) is not only currently

---

<sup>309</sup> This point is not so clear-cut. I discuss the issue of (in)conceivability, (im)possibility and contraposition throughout the following.

<sup>310</sup> And as I readily admit with respect to (CT3) in ch. 3.

unknown but absolutely unknowable, qua unknowable proposition it would not be at all justifiable on an *a priori* basis. Now, whilst in previous chapters I explicitly endorse versions of (CT1) (such that genuine apriority entails necessity and *prima/secunda facie* apriority weakly imply necessity) and strongly suggest similar versions of (CT2) (such that genuine aposteriority entails contingency<sup>311</sup>), I do admit that necessity does not entail apriority (i.e.  $\neg(\text{CT3})$ ) *simpliciter*, given the possibility of the kind of case under discussion. Whilst metaphysical modality is exhaustive (all true propositions are either necessarily or contingently the case), rational modality is not (some true propositions are neither *a posteriori* nor *a priori*), so there are metaphysically necessary truths that are not justifiable on an *a priori* basis—and *mutatis mutandis* for contingency and aposteriority. Despite all of this, I also claim that the rational is grounded in the metaphysical; genuine apriority entails necessity, conceivability entails possibility and, importantly (and by apparent contraposition), impossibility appears to entail inconceivability; *p* is conceivable only if *p* is possible. All of this being the case, given that  $\neg(\text{GC})$  is impossible, it would thereby appear to be rationally impossible or inconceivable. On the further assumption (and I think an extremely plausible one) that something is rationally necessary or *a priori* iff its negation is rationally impossible or inconceivable (i.e. the rational equivalent of  $\Box p \leftrightarrow \neg\Diamond\neg p$ ), it would appear that (GC), despite being unknowable, *is* justifiable *a priori* after all. But a proposition cannot be both justifiable and not justifiable on an *a priori* basis; something must give. In order to see what this must be, let us return to the central theses we have considered already, (CT) qua (CT1) to (CT4), together with some conceivability-possibility theses suggested by my thoughts on the necessary *a posteriori*, in addition to some fairly standard modal principles and their potential rational equivalents.

With respect to

(CT1) apriority entails necessity,

---

<sup>311</sup> Fallibility is less of an issue here, since unsuccessful *a posteriori* reasoning will still result in a false but *contingent* conclusion.

and

(CT2) aposteriority entails contingency,

as per Chapters 3, 5 and as above, I now accept both theses, as per the amended

(CT1\*) if  $p$  is a genuinely *a priori* justifiable proposition, then  $p$  must assert a metaphysically necessary circumstance,

and

(CT2\*) if  $p$  is a genuinely *a posteriori* justifiable proposition, then  $p$  must assert a metaphysically contingent circumstance.

As regards

(CT3) necessity entails apriority,

and

(CT4) contingency entails aposteriority,

as per Chapters 2 and 3, I deny both theses in the light of counter-examples such as (GC) and (CGC). Having said this, at various places in the thesis I do suggest that versions of (CT3) and (CT4) would be the case for (i) an ideal rational agent (God for example, would know all of the necessary truths on an *a priori* basis), or for (ii) *knowable a priori* (and *a posteriori*) truths. That is, (CT3) and (CT4) would hold (as they stand) for an extremely idealised notion of rational modality, and, more importantly (given the obvious problems of the relevance of such a notion), attenuated versions thereof would also hold for all knowable truths. That is, given the existence of the likes of (GC) and (CGC), in place of (CT3) and (CT4), I would be prepared to endorse versions of those theses along the following lines:

(CT3\*) if  $p$  asserts a metaphysically necessary circumstance and if  $p$  is knowable, then  $p$  must be an *a priori* justifiable proposition,

and,

(CT4\*) if  $p$  asserts a metaphysically contingent circumstance and if  $p$  is knowable, then  $p$  must be an *a posteriori* justifiable proposition.

In addition to (CT1\*) to (CT4\*), given what I say about the necessary *a posteriori*, conceivability and possibility, and especially about inconceivability and impossibility, the following theses also appear to be quite clear, natural corollaries (setting aside the proposition/circumstance qualification presently, for ease of expression):

(CON) if  $p$  is conceivable, then  $p$  is possible;

(INC) if  $p$  is inconceivable, then  $p$  is impossible;

(POS) if  $p$  is possible, then  $p$  is conceivable;

(IMP) If  $p$  is impossible, then  $p$  is inconceivable.

In terms of what I say above, I certainly seem to accept both (CON) and its apparent contrapositive (IMP); I claim throughout that  $p$  is conceivable only if  $p$  is possible (i.e. (CON) itself) and that (either as a direct, separate claim or perhaps as justifying (CON) by contraposition) if  $p$  is impossible,  $p$  is not conceivable—in that it is not possible to conceive of a metaphysically impossible arrangement of objects and attributes. Perhaps as with the original (CT3) and (CT4), there are clear problems with (INC) and (POS) (concerning both the limitations to and exaggerated expectations of human reasoning), which render a simple acceptance of these as problematic; there might be both possibilities of which we ‘cannot conceive’ and things we take to be ‘inconceivable’, despite their being possible. This being the case, I return to these both below and in the concluding chapter. For now then, let us concentrate on (CON) and (IMP) as related to and perhaps as in tension with my claims about (CT3) and (GC). The point being, as indicated above, I deny

(CT3) in the light of (GC), endorsing instead (CT3\*) and the claim that (GC) is not justifiable *a priori*, whereas I appear to accept (CON) and (IMP) more clearly, arguing (for example) that if a proposition such as (1a) qua (2a),  $\lceil e = e \rceil$ , is necessarily the case, then it is impossible to conceive of its negation. If (CON) and (IMP) then apply universally, the paradox becomes clear; (GC) qua unknowable proposition is not *a priori*, but  $\neg$ (GC) qua necessarily false proposition is inconceivable; and if (as I suggest above) the rational parallels the metaphysical-modal (where  $\Box p \leftrightarrow \neg \Diamond \neg p$ ), then it is highly arguable that if  $\neg p$  ( $\neg$ (GC) for example) is inconceivable (rationally impossible), its negation  $p$  (GC) is *a priori* (rationally necessary). This then is the crux of the tension; is rational modality ‘grounded in’ or does it ‘parallel’ the metaphysical, and if so, how?

I suggest throughout the thesis that ‘rational modality is grounded in metaphysical modality’ and perhaps now, even more strongly, that ‘the rational parallels the metaphysical’. In line with my present summary of (CT) and the related theses (CON) to (IMP), it is now time to further clarify such remarks, and concomitantly, to resolve the apparent tension between the denial that (GC) is justifiable on *a priori* grounds and the potential claim that since  $\neg$ (GC) is inconceivable, (GC) is presumably rationally necessary or *a priori*. By way of beginning this task I now set out a series of metaphysical-modal principles (or definitions perhaps—i.e. as assumed by a standard set of modal logics from K to S5) in order to compare these with a potentially equivalent set of rational-modal ‘principles’ or ‘definitions’:<sup>312</sup>

- |      |   |                 |
|------|---|-----------------|
| (M1) | $\Box p \leftrightarrow \neg \Diamond \neg p$ | [Necessity]     |
| (M2) | $\Diamond p \leftrightarrow \neg \Box \neg p$ | [Possibility]   |
| (M3) | $\neg \Box p \leftrightarrow \Diamond \neg p$ | [Non-necessity] |
| (M4) | $\neg \Diamond p \leftrightarrow \Box \neg p$ | [Impossibility] |

---

<sup>312</sup> I label these (Mn) qua *metaphysical*-modal principles and in preparation for comparison with the potentially equivalent *rational*-modal principles (Rn) below. The symbols  $\Box$  and  $\Diamond$  represent metaphysical necessity and possibility respectively, so ‘ $\Box p$ ’ should be read as ‘(metaphysically) necessarily  $p$ ’ or ‘ $p$  is (metaphysically) necessarily’ the case. I realise that  $\Box$  and  $\Diamond$  are inter-definable, and that the choice of left-hand side symbol for (M1) to (M4) is arbitrary. I begin with  $\Box$  and  $\Diamond$  for later comparison with rational necessity (apriority) and possibility (conceivability) respectively. I continue with  $\neg \Box$  and  $\neg \Diamond$  qua clear negations of  $\Box$  and  $\Diamond$ , and as the clearer, symbolic representations of the intuitive English ‘non-necessity’ and ‘impossibility’. For details of the relevant modal systems, see Chellas 1980; Hughes and Cresswell 1968, 1996; as well as various texts referred to in Garson 2008.

I also introduce a further principle (and symbol ‘ $\boxtimes$ ’) for ‘general’ contingency,<sup>313</sup> qua the conjunction of the negations of necessity (i.e.  $\neg\Box p$ ) and impossibility ( $\neg\Diamond p$ )—or equivalently, the conjunction of non-necessity and possibility:

$$(M5) \quad \boxtimes p \leftrightarrow \neg\Box p \wedge \Diamond p \quad [\text{Contingency (general)}]$$

In addition to endorsing the likes of the suitably attenuated (CT) and (CON) as above, one of the things I might be taken to mean by the claim that rational modality is grounded in the metaphysical (and especially by the claim that the former parallels the latter) is that rational modality operates in precisely the same way as does the metaphysical. That is, there is a set of ‘definitions’ of rational modality, (more or less) equivalent to the metaphysical (M1) to (M5), as follows:

$$\begin{aligned} (R1) \quad & R\Box p \leftrightarrow R\neg\Diamond\neg p^{314} && [\text{Apriority}] \\ (R2) \quad & R\Diamond p \leftrightarrow R\neg\Box\neg p && [\text{Conceivability}] \\ (R3) \quad & R\neg\Box p \leftrightarrow R\Diamond\neg p && [\text{Not-apriority}^{315}] \\ (R4) \quad & R\neg\Diamond p \leftrightarrow R\Box\neg p && [\text{Inconceivability}] \\ (R5) \quad & R\boxtimes p \leftrightarrow R\neg\Box p \wedge R\Diamond p && [\text{Aposteriority}] \end{aligned}$$

There are then at least two central points under discussion here. First, there is the general claim that the rational parallels, or is grounded in, the metaphysical (qua conjunction of all of the above, relevant theses); and second, there is the

<sup>313</sup> I.e. concerning a proposition that could be true or false; as opposed to a contingent truth, which concerns propositions that are true but not necessarily so.

<sup>314</sup> The superscripted ‘R’ is intended to indicate ‘rationally’, as an adjunct to the relevant modal operator. So ‘ $R\Box p$ ’ should be read as ‘rationally-necessarily  $p$ ’ or ‘ $p$  is rationally-necessarily the case’. Since I take ‘R’ to be a modifier of necessity, as opposed to a clear, ontological kind of necessity, the ‘R’ is better placed before any negations; if something is (strictly) not *a priori* or inconceivable, it is better formalised as rationally-not-necessary or rationally-not- (or im-) possible, respectively. I leave the operators in the various ‘M’ theses as standard (i.e. with no ‘M’ superscripts), following the usual practice for representing metaphysical modality.

<sup>315</sup> See the previous note and the discussion in the main body below. The point concerns the ‘in-exhaustiveness’ of both apriority and conceivability. In short, unlike as with necessity and non-necessity, I argue that—*strictly*—there are three relevant categories; apriority/conceivability, *non*-apriority/conceivability and *not*-apriority/*inconceivability*. I explain all of this and suggest lengthier but less awkward terminology below.

issue of the alleged tension within my position (given my apparent commitment to versions of many of said theses). I now deal with these in turn; beginning with the first but (as the two are deeply related) quickly moving on to a discussion of the two points in tandem.

As is evident throughout the thesis, in claiming that genuine apriority entails necessity, and similar for aposteriority-contingency and conceivability-possibility, I am quite deeply committed to some thesis in the region of the point currently under discussion; that rationality is ultimately grounded in the metaphysical. Moreover, given such strong ties between the rational-modal and the metaphysical-modal domains, it would perhaps be odd to insist on the likes of (M1) to (M5), whilst at the same time denying (R1) to (R5). Indeed, it is quite evidently a cornerstone of my thesis that apriority consists in rational necessity—and *mutatis mutandis* for aposteriority-rational contingency and conceivability-rational possibility. So there must be a sense in which (R1) to (R5) obtain, and so in which the (R) theses ‘parallel’ the (M) ones. Now is the time to fill out the details of that sense. Let me begin by making a distinction that will help clarify the ensuing discussion; that between ‘ideal’ rationality and ‘human’, or rather what I call ‘strict’ rationality. In terms of ideal rationality, as I have suggested several times throughout, I accept more or less unadulterated versions of all of (CT), (CON) to (IMP), and the (R) theses (the (M) theses, qua almost definitional of metaphysical modality, are not under dispute). That is, for an ideal reasoner, apriority entails necessity, aposteriority-contingency, conceivability-possibility, inconceivability-impossibility, and *vice versa*; the (ideal) rational is grounded in the metaphysical to the extent that they are coextensive—God (for example) would know all of the necessary truths on an *a priori* basis. Of course, even if this set of claims holds, it is perhaps extremely unhelpful; if we are interested in philosophical (and scientific) qua human reasoning from apriority to necessity (aposteriority to contingency) and conceivability to possibility or otherwise, ideal rationality is not going to be very enlightening as a definitive analysis. So with respect to ‘human’ or ‘strict’ rationality, in what sense, if any, do the (R) theses obtain?

In order to answer this question, it is necessary to resolve the alleged tension that I have been suggesting all along. So let us return to that issue, after

stating an interim position on the ‘strict’ (R) theses. For now then, let us assume that the (R) theses are ‘definitional’ of (strict) rational modality, in the same way as are the (M) theses for metaphysical modality. This being the case, let us assume, for present purposes, that I am even more committed to (R1) to (R5) than I am to the likes of (CT1\*) to (CT4\*); if (strict) apriority consists in rational necessity, then if  $p$  is rationally necessary (*a priori*), the negation of  $p$  is going to be rationally impossible (inconceivable)—and *vice versa*—i.e. (R1). In addition and contraposing, if  $p$  is conceivably not the case ( ${}^R\Diamond\neg p$ ), then  $p$  must be ‘not-*a priori*’<sup>316</sup> ( ${}^R\neg\Box p$ )—and *vice versa*—i.e. (R3). Similarly, if  $p$  is conceivable ( ${}^R\Diamond p$ ),  $\neg p$  must also be ‘not-*a priori*’ ( ${}^R\neg\Box\neg p$ )—and *vice versa*—i.e. (R2). Finally and by contraposition, if  $p$  is inconceivable ( ${}^R\neg\Diamond p$ ) then  $\neg p$  is *a priori* ( ${}^R\Box\neg p$ )—and *vice versa*—i.e. (R4). Regarding rational contingency, aposteriority and (R5), as with (M5) above, this would then be a conjunction of the negations of apriority (i.e.  ${}^R\neg\Box p$ ) and inconceivability ( ${}^R\neg\Diamond p$ )—or equivalently, a conjunction of ‘not-*a priori*’ and conceivability. Without a great deal of argument for now then, if I am committed to the likes of (CT1\*) to (CT4\*), I think I am even more clearly committed to (some versions of) (R1) to (R5); and this is what I take claims such as ‘the rational parallels the modal’ to entail. That said, as I indicate several times in the main body and notes, there is a lot more to be unpacked here, before a final endorsement of the (R) theses can be made. As mentioned above then, let us now turn to the resolution of the alleged tension in my position.

Putting all of the foregoing together, the tension is quite clear. Given a denial of (CT3) in the light of (GC), together with an acceptance of (CON) and especially (IMP), (GC) clearly appears to be not justifiable on *a priori* grounds, whereas  $\neg$ (GC) appears to be impossible and so, clearly, inconceivable. With the addition of (R1) however, if  $\neg$ (GC) is inconceivable, (GC) must be *a priori*; a problem. Now there are perhaps two initial ways of resolving this tension; either one could argue that  $\neg$ (GC) is inconceivable, (GC) is not *a priori* and that there is an incongruity in the relationships obtaining between what might be called ‘negative’, metaphysical impossibility and inconceivability on the one hand, and ‘positive’, metaphysical and rational modality on the other, or one

---

<sup>316</sup> See several of the foregoing notes, as well as the remainder of the main text.

could claim that (GC) is both metaphysically necessary and *a priori*—qua rationally necessary—in some (however convoluted) sense. The problem with taking the first fork is that such an incongruity might appear to be an *ad hoc* manoeuvre made solely to save a theoretical position; moreover, given my apparent, clear adherence to (R1) to (R5) above, this option would not even appear available. The problem with taking the second fork is that since (GC) is (by assumption) an unknowable proposition, such a claim seems deeply counter-intuitive—especially given that we are talking about strict, as opposed to ideal rationality. So, just what ought to be said about the apparent tension?

Well, I claim, the solution concerns the very notions of apriority, aposteriority and conceivability (i.e. rational modality in general, and what this consists in), and turns on the distinction between ideal and strict (or human) rationality I introduce above, or relatedly, that between knowable and unknowable (or conceivable and ‘undecidable’) propositions.<sup>317</sup> The point is, very much as I deny the original versions of (CT3) and (CT4) in the light of (GC) and (CGC) qua unknowable propositions, I think the right move here is to deny (CON) and (IMP) with respect to the negations of such unknowable propositions—what I shall call ‘undecidable’ propositions. That is, although (on the assumption that (GC) is necessarily true)  $\neg$ (GC) is impossible, it is only *ideally* inconceivable—only an ideal rational agent would be able to reason to the impossibility of  $\neg$ (GC)—and, importantly, of course, for such an agent, (GC) itself *would* be justifiable on an *a priori* basis (as well as being conceivable). So, as already indicated, for an extremely idealised notion of rational modality I would accept all of the original (CT1) to (CT4) and (CON) to (IMP), together with all of the rational, modal definitions (R1) to (R5). On this account (CT3) does obtain, as does (R1); (GC) is *ideally a priori* and  $\neg$ (GC) is *ideally* inconceivable. Of course however, such a notion of rationality (apriority, aposteriority and conceivability) is, quite clearly, going to be of little use for cognitively limited beings such as human beings. This being the case, instead of talking about ideal, rational modality, we should talk about strict apriority, aposteriority and conceivability; and, in terms of human rationality, (GC),  $\neg$ (GC) and similar are, with respect to the *a priori* and *a posteriori*, strictly,

---

<sup>317</sup> I am indebted to Yablo (1993, pp. 21-2) on ‘undecidability’.

unknowables (they are, strictly, neither *a priori* nor *a posteriori*), and, in terms of conceivability and inconceivability, they are ‘undecidables’ (they are, strictly, neither conceivable nor inconceivable). That is (as I suggest in ch. 3), even for *true* propositions, apriority/aposteriority are not exhaustive; some true propositions are justifiable on an *a priori* basis (knowable, necessary truths), some are *a posteriori* or ‘*not-a priori*’ (knowable, contingent truths) and some are ‘*non-a priori*’; neither *a priori* nor *a posteriori*/‘*not-a priori*’ (i.e. the unknowable necessary truths, such as (GC)). Now with respect to conceivability, such unknowables and their negations should be viewed as ‘undecidables’; just as with apriority then, there are conceivabilities (knowable possibilities), *inconceivabilities* (knowable impossibilities) and *non-conceivabilities* (unknowable (im)possibilities whose rational-modal status is undecidable; they are neither conceivable nor inconceivable). (GC),  $\neg$ (GC) and any necessary/necessarily false but unknowable proposition ( $\lceil$ there is a God $\rceil$  for potential example) will fit this pattern; they will be necessarily true/false but rationally undecidable—neither *a priori/a posteriori* nor conceivable/inconceivable.<sup>318</sup>

In summary then, if we are to employ a notion of rational modality that is to be of use for philosophers (and more generally), I urge that we adopt more or less unamended versions of the (R) theses as definitional of rational modality, but that we bear in mind that this is human or strict rational modality, which means that the categories of apriority-aposteriority and conceivability-inconceivability are not exhaustive, and that we must be careful with the placement of the negation sign in the relevant theses—and with respect to *a priori/conceivability* claims in general. What I mean here is that even for true propositions, *non-apriority* (or *non-conceivability*) is not the same as *not-apriority*—i.e. *aposteriority*—(or *inconceivability*). So, for true propositions, where  $\neg^R\Box$  (and  $\neg^R\Diamond$ ) might formalise the former, wider and more vague

---

<sup>318</sup> Unfortunately, of course, many central philosophical (qua putatively *a priori*-necessary or conceivable/possible) propositions that will also fit the pattern. One research question that is beyond the scope of this thesis is, ‘which are the decidable philosophical propositions?’—itself, presumably one of the undecidables. Which is, of course, the joy of philosophy.

Similarly, whether (GC) is knowable (or not), is a deeply complicated issue, being as it is embedded in the issue of whether (GC) is itself justifiable on an *a priori* basis. The point being, if (GC) is knowable, then a (successful) proof of the conjecture would be *both* a demonstration of (GC) *and* of the fact that it is knowable; i.e. both its apriority and its knowability are conditional on the *possibility* of its proof.

category,  $R\neg\Box$  (and  $R\neg\Diamond$ ) are better formalisations of rational-*not*-necessity—i.e. aposteriority—(and rational *impossibility*—i.e. inconceivability). As before then, some true propositions are rationally necessary/*a priori* (or rationally possible/conceivable), some are rationally or knowably *not*-necessary/*a posteriori* (or rationally impossible/inconceivable) and some are neither *a priori* nor *a posteriori* (or neither conceivable nor inconceivable), such as (GC), (CGC) and (GC)/ $\neg$ (GC), where (GC)/(CGC) are unknowable.

So, by ‘definitional’ of strict rational modality, what I mean is that just as with genuine, strict apriority and

$$(R1) \quad R\Box p \leftrightarrow R\neg\Diamond\neg p,$$

since  $p$ ’s apriority entails  $\neg p$ ’s rational impossibility/inconceivability, and *vice versa*, if  $p$  is genuinely, strictly conceivable, its negation must be *not-a priori*, and *vice versa*; i.e.

$$(R2) \quad R\Diamond p \leftrightarrow R\neg\Box\neg p.$$

Moreover, I would make precisely analogous claims for  $p$ ’s (genuine, strict) ‘not-apriority’ and  $\neg p$ ’s conceivability,  $p$ ’s inconceivability and  $\neg p$ ’s apriority, and  $p$ ’s aposteriority/‘not-apriority’ and conceivability; I accept all of

$$(R3) \quad R\neg\Box p \leftrightarrow R\Diamond\neg p$$

$$(R4) \quad R\neg\Diamond p \leftrightarrow R\Box\neg p$$

$$(R5) \quad R\Box p \leftrightarrow R\neg\Box\neg p \wedge R\Diamond p,$$

respectively—as long as the relevant assumptions concerning strict and genuine rationality are made.

With the (R) theses as definitional of rational modality then, and as substantiating the claim that the rational-modal is grounded in the metaphysical-modal, I also urge that we accept all of the relevantly amended versions of (CT), i.e. (CT1\*) to (CT4\*), as well as similarly amended versions of (CON) and (IMP), as follows:

- (CON\*) if  $p$  is a (genuinely) conceivable proposition, then  $p$  must assert a knowable/justifiable, metaphysically possible circumstance;<sup>319</sup>
- (IMP\*) if  $p$  asserts a knowable/justifiable, metaphysically impossible circumstance, then  $p$  must be an inconceivable proposition.

This just leaves the matter of (INC) and (POS), which I had adverted above as being similarly problematic as the original (CT3) and (CT4). Very much in line with the foregoing, I accept suitably amended theses, as follows:

- (INC\*) if  $p$  is a (genuinely) inconceivable proposition, then  $p$  must assert a justifiable, metaphysically impossible circumstance;
- (POS\*) if  $p$  asserts a justifiable, metaphysically possible circumstance, then  $p$  must be a conceivable proposition.

In this way, I both substantiate the claim that the rational parallels the metaphysical and resolve the issue of the alleged tension in my position. Moreover, I begin to suggest final analyses of apriority, aposteriority, conceivability and inconceivability. In the suitably qualified senses, apriority entails necessity, aposteriority-contingency and (in)conceivability-(im)possibility; moreover, (knowable/justifiable) necessity entails apriority, and similarly for contingency-aposteriority and (im)possibility-(in)conceivability.

---

<sup>319</sup> The parenthesised 'genuinely' is to suggest the same *prima* and *secunda facie* sub-theses as with (CT1\*). This applies *mutatis mutandis* to (INC\*), below.

# Chapter 7

## Rationality, Modality and Essence

### 1 Introduction

In this closing chapter I provide a brief discussion of the nature of modality; that it is grounded ultimately in the natures or essences of things most widely understood (§2). As shall become apparent, such topics are large and vexed, so many of my remarks here should be considered as promissory and as suggestive of areas for future research. I then offer a final summary of my position on rationality and modality (§3), before discussing potential issues with and objections to my position (§4)—such as fallibilism, circularity and two-dimensionalism (§4.1), and modal error (§4.2).

### 2 The nature of metaphysical modality

As I have indicated throughout, much of what I say hangs on my approach to modality. I now offer such a discussion, although, as there is insufficient space for a substantive account, my discussion is tentative and occasionally promissory—I indicate directions for future research where necessary. I begin with a critical introduction to the notion of ‘actual’ and ‘possible’ worlds (§2.1) followed by a discussion of ‘possibilism’ and ‘realism’ (§2.2). I then discuss

what is usually called ‘possible-worlds realism’ (but which I label ‘possibilism’—to cover both ‘ersatz’ and ‘genuine’ theories), as opposed to what I view as genuine modal realism, ‘modalism’ (§2.3).<sup>320</sup> I conclude with the most exploratory discussion; the grounding of modality in natures and essences (§2.4).

## 2.1 ‘Actual’ and ‘possible’ worlds

In earlier sections of the thesis, I claim that ‘actually’-based (and similar, indexical-involving), putative cases of the contingent *a priori* (e.g.  $\lceil p \leftrightarrow \mathcal{A}p \rceil$ , for a contingently true  $p$ ) and necessary *a posteriori* (e.g.  $\lceil \mathcal{A}p \rceil$ , for a true, *a posteriori*  $p$ ) are entirely artificial examples of the alleged phenomena. Occasionally I go on to claim that ‘actually’ (and cognates) should be viewed as a rhetorical device, as opposed to a genuine modal predicate—in the absence of any deep, metaphysical argument for the existence of the relevant *actual* (as opposed to possible) world(s), such that  $\mathcal{A}$  predicates a genuine, modal property. I make more of such claims with respect to the contingent *a priori* (as I deal with the issue there first) but during my discussion of the necessary *a posteriori*, I try to make it clear that similar conclusions apply.<sup>321</sup> In both places I make promissory comments with respect to providing further argument concerning the illegitimacy of both the  $\mathcal{A}$ -based problem cases and the (two-dimensional) possible-worlds framework in which it occurs. I now begin both of these tasks, focussing on ‘actually’ and  $\mathcal{A}$  presently and on possible worlds in the following sections.

As suggested above, there are two main ways of viewing ‘actually’; (i) as a rhetorical device stressing (for example) the commitment of the speaker to the relevant proposition or (ii) as a genuine predicate, introducing a real property of ‘being actual’ as distinct from mere possibility or contingency. In the present section I argue that there is no good case (especially not from—two-

---

<sup>320</sup> I explain all of the terminology below.

<sup>321</sup> See ch. 3, §3, ch. 4, §3.1 and ch. 5, n. 34.

dimensional—semantics to the metaphysics of modality) for (ii), thus  $\mathcal{A}$  should be viewed as a rhetorical/pragmatic marker, as opposed to being a more ontic operator that latches onto a genuine modal property—at least in the absence of good, metaphysical argument for the latter. No argument for (i) can be fully philosophical (involving as it would pragmatics and general, linguistic practice), thus my strategy here will be to argue that there are no good, existing arguments for (ii) and indeed, that there can be no such arguments, since the general strategy is to proceed from logico-semantic premises to modal, metaphysical conclusions—which, as I stress throughout, is the wrong order of explanation. In the following sections I then begin to offer more metaphysical arguments against the ‘actual’ and possible-worlds framework—and thus further against (ii).

A standard argument for a realist interpretation of ‘actually’ as per (ii) might proceed as follows.<sup>322</sup> There are natural language sentences that appear to resist formulation in a standard, quantified modal logic (QML)<sup>323</sup> for example,

(A) it is possible that everything that is actually red could have been shiny.<sup>324</sup>

According to the argument, (A) cannot be parsed as

(A1)  $\forall x \diamond (Rx \rightarrow Sx)$ ,

---

<sup>322</sup> Indeed one of the best, existing arguments is offered by Crossley and Humberstone 1977, pp. 11-13. Davies and Humberstone (1980) offer a further discussion of the logic of  $\mathcal{A}$  and necessity. I view the latter paper in large part as a formalisation of both Crossley and Humberstone 1977 and Evans 1979. Cf. Davies 2004, pp. 84-5 and Soames 2007a. Although Soames claims to offer “a theory of the metaphysics...of actuality and possibility” (p. 251), its key move concerns the *semantic* indexicality of “the rigidifying actuality operator” (p. 251; cf. pp. 255-6). Similarly, the ‘metaphysics’ and ‘epistemology’ (of pp. 256-60) looks decidedly two-dimensional, consisting of a combination of Stalnaker’s ‘possible worlds’ plus Carnap’s ‘state descriptions’.

<sup>323</sup> By which I mean a quantified, predicate logic enhanced with modal operators, as opposed to a modal, predicate logic that quantifies over possible worlds. I go into more detail on this issue below.

<sup>324</sup> Crossley and Humberstone 1977, p. 12; cf. Davies 2004, p. 84 (my phrasing and labelling). Soames (2007a, p. 253) offers the following example: “It could have been the case...that the...general who actually won...lost the battle”. To my mind this example is easily parsed as the following—without any  $\mathcal{A}$  operator:  $\lceil \exists x (Wx \wedge \diamond \neg Wx) \rceil$ . Hence I focus on Crossley and Humberstone’s initially more interesting example.

since the envisaged possibility is too restrictive. That is, the possibility that all red things are jointly shiny precludes the possibility of something shiny but not red, which is very much suggested by (A). Similarly,

$$(A2) \quad \forall x (Rx \rightarrow \Diamond Sx),$$

will not do, since this is (allegedly) the overly liberal possibility that *all* ('actual' and 'non-actual') red things are shiny, whereas (A) requires only the 'actual' red things to be shiny.<sup>325</sup> Thus, goes the argument, we should introduce an 'actually' operator and formalise (A) as

$$(A3) \quad \forall x \Diamond (\mathcal{A}Rx \rightarrow Sx),$$

which is the possibility (supposedly identical to that of (A)) that every 'actual' red thing is shiny but that not all possible red things are such.<sup>326</sup>

In response to the foregoing argument then, my general strategy will be to show that there is no need for the insertion of the  $\mathcal{A}$  operator; thus no 'actually'-involving modal conclusions can be drawn from the likes of (A) to (A3)—in the absence of the relevant metaphysical premises. In slightly more detail, I make the following three moves. First, I think that such arguments, as well as being so generally problematic (in aiming to move from semantics to metaphysics), are also specifically flawed, in making the assumption that everyday discourse concerns the 'actual' and 'possible worlds', such that operators such as  $\Box$ ,  $\Diamond$  and  $\mathcal{A}$  pick out genuine realms of necessary, possible and actual (real or 'ersatz') objects. Against this, I think we ought to begin with the more 'minimalist' assumption that natural language modal talk concerns the 'actual'<sup>327</sup> world and possibilities (necessities and contingencies) thereof. That is, let us assume (in the absence of compelling, metaphysical argument to the contrary—which logic and semantics alone cannot provide) that there is

---

<sup>325</sup> The scare quotes are to suggest that 'actual' here is used in a potentially question-begging manner. The point being, if there is no real, interesting class of *actual* red things (as opposed to just red things), the illiberality of (A2) might not be such an issue.

<sup>326</sup> Davies (2004, p. 85) puts this well.

<sup>327</sup> I.e. qua rhetorical device, on the assumption that there is, strictly, only one world.

just the one world, and that modal talk is about that world and its modal properties. Accordingly, without the relevant argument, the ‘actually’ in (A) should be viewed as rhetorical at best or redundant at worst.

Second, the ‘it is possible’ at the start of (A) is badly placed; the modal force of the example concerns the red and shiny things—it is *de re* not *de dicto*. Third then, and given the previous two points, the ‘could have been’ suggests that some of the ‘actual’ red things are not shiny; that is,

(A4) the red things (some of which are not shiny) could all have been shiny.

Third and finally (and as I begin to suggest already), the ‘everything’ in (A), or universal quantifiers in (A1) and (A2), need to be within the scope of the modal claim. That is, dropping the parenthesised qualification in (A4) (which is perhaps more a matter of conversational implicature), we have:

(A5) the red things could all have been shiny,

or, perhaps better (since the ‘all’ might now be similarly redundant),

(A6) the red things could have been shiny.<sup>328</sup>

In terms of formalisation, (A4) to (A6) are perhaps best parsed as follows:<sup>329</sup>

(A4p)  $\forall x [(Rx \wedge \exists y (Ry \wedge \neg Sy)) \rightarrow \diamond (Sx \wedge Sy)]$

(A5p)  $\forall x (Rx \rightarrow \diamond Sx)$ <sup>330</sup>

---

<sup>328</sup> I am very much indebted to Jonathan Lowe for discussion of this section. Lowe would add the following potential paraphrasing of (A): ‘the red things could have been *shiny*, red things’, depending on the disambiguation of (A). The point being, moving from the English (A) (or similar), to the logic/semantics of (A3) (and  $\mathcal{A}$ ), to the metaphysics of actuality, is entirely the wrong order of explanation. Instead, we should start with the metaphysics of modality, objects and attributes (as I do both here and in more detail below), and then turn to the logic and semantics.

<sup>329</sup> Very much bearing in mind the previous note. I.e. without the detailed metaphysics (to follow) not a lot rests on such formalisations.

<sup>330</sup> This formalises (A5) and (A6).

Of course, (A5p) is identical to the original (A2), which is perhaps neither surprising nor problematic. The key point being, the alleged problem with (A2) is that it is ‘too liberal’, in terms of failing to limit the possible shiny things to the ‘actual’ red things. As I argue throughout however, absent the required metaphysics of actual (and possible) worlds, there is no good reason to make such accusations. In order to interpret ‘actually’,  $\mathcal{A}$  (and  $\diamond/\square$ ) in terms of the ‘actual’ (and possible) world(s), some quite deep, metaphysical reasoning is required. As I suggest above (and argue more forcefully below), the metaphysics of the actual (and possible) world(s) are deeply problematic, and the semantics of natural language expressions and the ‘logic of ‘actually’’ cannot provide the relevant, metaphysics. Consequently, we should not attempt to make such ‘modal realist’ and substantive, metaphysical conclusions on the back of merely linguistic and logico-semantic premises; we ought not to conclude that  $\mathcal{A}$  is genuine; we ought instead to make the more ‘minimalist’ assumptions I outline above.

On such minimal assumptions, several entirely  $\mathcal{A}$ -free versions of (A) are available, so there is not even good, logico-semantic motivation for adding  $\mathcal{A}$  to the standard QML. The wider point being, logic is a mere analytic tool, designed (for example) to bring out (semantic and) metaphysical assumptions. Where those metaphysical assumptions are suspect (as per ‘actual’ and ‘possible worlds’) we should only accept them when there is independent, compelling reason to do so and we should reject them when there are clear, metaphysical problems—as I go on to argue that there are. As I have stressed throughout, in general there is no clear route from the semantics of natural language, via logical analysis, to metaphysical conclusions. In particular, there is no route from ‘actually’ via  $\lceil \mathcal{A}p \rceil$  or  $\lceil p \leftrightarrow \mathcal{A}p \rceil$ , to the necessary *a posteriori* or the contingent *a priori*.

## 2.2 Possible worlds, 'realism' and essentialism

Having thus discussed 'actual' and 'possible worlds' talk, I now turn to a more explicit discussion possible worlds and modality. First, let me repeat and emphasise a point I make throughout the thesis; following the likes of Fine, Lowe and Oderberg,<sup>331</sup> I am committed to the claim that what we are really interested in, in discussions of apriority, modality and essence, is *genuine* apriority, modality and, ultimately, *genuine* essence; *real* essentialism. This being the case, I now set out my position on the various modalities (and essentialism), as discussed by the likes of Plantinga (1974), Forbes (1985) and Lowe (1998). Beginning with logical modality, there are arguably three relevant species; strict, narrow and broad logical modality. I begin with broad logical or *metaphysical* modality, since this is what I have been most concerned with throughout.

Perhaps the standard understanding of metaphysical modality is in terms of the possible-worlds framework; metaphysical necessity is truth in all possible worlds, possibility is truth in some worlds and contingency truth in at least one world—a contingent truth is then a proposition that is true in the 'actual'<sup>332</sup> world. As I suggest above and shall now argue however, this understanding is both typical of the kind of semantics to metaphysics reasoning that I criticise throughout and, ultimately, is the wrong way of viewing modality. Metaphysical modality, I claim, should not be understood in terms of possible worlds; it should be understood in terms of the objects and attributes of this world and, crucially, their essences and accidents. So, a metaphysically necessary circumstance is an arrangement of objects and attributes that obtains of necessity in virtue of the relevant object's having the relevant attribute as part of its essence; a possible circumstance obtains when an object possesses an attribute accidentally (or essentially); and a contingent circumstance obtains when an object only accidentally has the relevant attribute.

With such an understanding of metaphysical (as the most basic) modality,

---

<sup>331</sup> Fine 1994; Lowe 1998, 2006, 2008b; Oderberg 2001, 2007 for example.

<sup>332</sup> I very much explain the scare quotes below—if their use is not clear from the foregoing.

other relevant modalities (including the rational) should then be viewed as grounded therein.<sup>333</sup> Strict (and narrow) logical modality is (metaphysical) modality in virtue of the laws and relata of logic (together with the non-logical definitions or concepts); e.g.  $p$  is strictly (or narrowly) logically necessary iff  $p$  is a law of logic (or iff  $p$  is entailed by the laws plus definitions);<sup>334</sup>  $p$  is possible iff it is a law or is consistent with the laws; and  $p$  is contingent iff  $p$  is merely consistent.

In this way, the strict and narrow logical are purely formal (i.e. analytic) necessities. As discussed explicitly in Chapter 4 then, rational modality cannot be identical to or coextensive with such modalities, since apriority (rational necessity) is not analyticity (strict/narrow logical necessity), for example. Similarly, rational modality cannot be a fully epistemic modality, since the latter is (as discussed in Chapter 4) a relatively subjective and, importantly, non-*modal* 'modality'. The point being, rational necessity and so apriority are, importantly, (i) knowledge that is independent of experience (which is not the case for epistemic necessity), (ii) arguably (given potential further rational correction), significantly closer to being alethic than is the merely epistemic, and (iii) as I suggest in Chapter 4, a more *modal* form of modality. This being the case, rational modality is best viewed as (metaphysical) modality in virtue of (human) rational capacities;  $p$  is rationally necessary (*a priori*) iff  $p$  is (humanly) knowably necessary;  $p$  is rationally contingent (*a posteriori*) iff  $p$  is knowably contingent; and  $p$  is rationally possible (conceivable) iff  $p$  is knowably, metaphysically possible.<sup>335</sup>

All of this being the case, what I am suggesting is that in order to understand modality, we need to make the following assumptions. First and foremost, we ought to begin on the relatively safe ground of there being an 'actual' world, consisting of objects, attributes and so on (depending on the correct ontology). Second and quite clearly, there is modal talk that stands in need of explanation; people say things like, 'I might see you next week', 'shares

---

<sup>333</sup> I am aware of a potential conflict with Fine 2002 here, depending on the nature of (e.g.) nomological necessity. This a clear area for further research.

<sup>334</sup> I leave the parenthesised insertions as tacit hereafter.

<sup>335</sup> There are, arguably, further species of modality such as the nomological and deontic, which might be categorised as (metaphysical) necessity in virtue of the natural laws and the right, respectively. As per n. 14, I am aware of deep issues here and leave such speculation for further research.

can go up as well as down' and, 'there is no way that could have happened'. Given these two assumptions, I take the correct starting question *not* to be, 'is possible-worlds discourse factive?' (or similar). The point being, I very much view possible-worlds discourse as a (more or less successful) philosophers' means of understanding and analysing the former and more basic, modal discourse. Thus, I take the correct question to be the more basic, 'is modal discourse factive?'<sup>336</sup>

As is clear from the foregoing (this section and previous chapters), I view a negative answer to this question (modal anti-realism), as deeply counter-intuitive and problematic; it appears to render all properties as 'contingent' (or 'necessary') *tout court*. To my mind, claims that there are (for example) no *a priori*, no non-revisable or (similarly) no necessary truths, come increasingly close to self-refutation; presumably, if  $\lceil \neg \exists p \Box p \rceil$  is 'contingent', it might have been false? For present purposes then, I ignore such clear anti-realisms.<sup>337</sup>

In terms of a positive answer then (i.e. 'modal realism'—although perhaps not all 'realist' positions are ultimately realist about modality, as I now explain), the next question to ask is, 'if modal talk is factive, what are (or what grounds) the relevant facts?' It is on this question that the remainder of §2 focuses. Very briefly, the main, pertinent options are reductionism and what I call 'modalism' (i.e. the view that modal properties are somehow basic).<sup>338</sup> The main options then being 'possibilist' reduction to concrete,<sup>339</sup> or 'ersatz', possible worlds

---

<sup>336</sup> Much contemporary philosophy (all that flows from possible-worlds semantics, for example) takes the first question as the right starting point. That said, even some 'modal primitivists' (such as McLeod 2001; cf. Chihara 1998, who has Lewis as a 'modal realist' in virtue of his realism about possible worlds) appear to start with the first question. For all of these reasons my terminology differs from McLeod's and Chihara's, as I explain below.

Kalhat (2008) begins from a similar stance on 'ordinary modal' versus 'possible-worlds discourse'. Although I am in broad agreement with Kalhat's conclusions (that possible-worlds talk gets both modal talk and the metaphysics of modality wrong), I note that he offers very little in place of possible worlds.

Shalkowski (1994, pp. 669-70) begins with the right questions; e.g. what is "the nature of the ontological ground of modality"? I also note approvingly both his discussion of Lewisian (and related—see especially pp. 685-8) reductionisms and his general, modal primitivism. Cf. Bueno and Shalkowski 2000.

<sup>337</sup> But this is a potential area for future research.

<sup>338</sup> For present purposes, I ignore more extreme eliminativisms such as (Forbes's 1985) 'modalism', as well as fictionalism (e.g. Rosen 1990; Divers 1999 but see also Divers's discussion in 2002, 2004 and 2006), which, to rearrange Russell, seem to involve a great deal of toil, without managing to thief much at all. Again however, these are areas for future work.

<sup>339</sup> Lewis 1968, 1986.

(maximal sets of states of affairs,<sup>340</sup> propositions,<sup>341</sup> properties<sup>342</sup> and so on)<sup>343</sup> versus the ‘modalism’ or ‘modal realism’ that takes modal properties as basic and grounded in the natures or essences of things—objects, attributes, kinds and so on. In what follows, I argue for the latter option; I maintain that the correct order of explanation moves from objects, kinds and their natures to (real) necessary, contingent and possible attributes. Nevertheless, such claims very much stand in need of defence and explanation. In the following subsections then, I first compare what I take to be the two leading options (possible-worlds ‘realism’ or ‘possibilism’, and the ‘modalism’ I allude to above), before moving on to discuss the grounding of modality in essence.

### 2.3 Problems with possibilism and merits of modalism

My strategy in this section is to undermine the main motivation for possibilism—that possible-worlds semantics (PWS) and so possibilism are the required semantics and ontology of everyday modal talk—by showing that simple, quantified modal logic (QML)<sup>344</sup> is sufficiently expressive; to provide separate argument against possibilism (that the relevant ontology is deeply paradoxical); then to conclude (albeit briefly) that modalism is perfectly tenable and, indeed, preferable.

The standard argument in favour of PWS (and so of possibilism) usually

---

<sup>340</sup> Plantinga 1974.

<sup>341</sup> Adams 1974.

<sup>342</sup> Stalnaker 1976.

<sup>343</sup> I view Lewis as a strict ‘possibilist’ (a ‘realist’ about other possible worlds) and ‘ersatzism’ as ‘actualist possibilism’ (‘realist’ about the actual and abstract possible-worlds). In addition to this, strict (and actualist) possibilism is very arguably anti- (or quasi-) realist about modality itself, since any stance that appears to reduce *real* modalities to additional ‘real’ worlds, is only questionably described as realist about modality. I am indebted to McGinn 1981 and McLeod 2001 here, and the former (as well as Chihara 1998 to some extent) throughout the following section.

As mentioned above, I note some confusion over terminology; McGinn (like me) has ‘actualism’ as a variety of possibilism, whereas McLeod has ‘actualism’ as a species of ‘modal realism’. As indicated in the main body, I prefer ‘possibilism’ as covering Lewisian and ‘ersatz’ or ‘actualist’, ‘realisms’ about *possible worlds*, and ‘modalism’ or ‘modal realism’ as realist about modality. (That said, I do note approvingly McLeod’s (2001, pp. 62-77) raft of arguments against various possibilisms—in my sense.)

<sup>344</sup> As before, by ‘QML’ I mean a predicate calculus with modal operators, whereas ‘PWS’ should be understood as a predicate calculus that quantifies over possible worlds.

consists in an appeal to certain examples of everyday modal talk, which, broadly, exemplify certain complex modal claims.<sup>345</sup> For example,

(P1) there are many possible games of chess;

(P2) there could have been things other than there actually are;

and

(P3) your car could have been the same colour as mine.

As before, the possibilist idea here is that no such examples can be formalised in terms of standard QML; in order to capture such complex modalities, PWS is required. In response to this, let me first say that this is not at all the case—at least making some ‘minimalist’ assumptions as (or similar to those) I make in §2.1 above. For example, (P1) can be quite easily parsed as

(P1a)  $\exists x \exists y \exists z \dots [(x \neq y \wedge x \neq z \dots) \wedge (\Diamond Gx \wedge \Diamond Gy \wedge \Diamond Gz \dots)]$ .<sup>346</sup>

Similarly, assuming there is one (‘actual’) world, that everyday modal talk concerns this world (and its objects, attributes and their modal properties), and so (minimally) that there is no logico-semantic reason for holding that possibilities are *things*, (P2) would be better written as

(P2a)  $\exists x \exists y (Wx \wedge \neg Wy \wedge \Diamond Wy)$ ,

i.e. there are some things ( $x$ ) that are ‘actual’, ‘worldly’ or ‘world-inhabiters’ ( $W$ ) and some merely possible things ( $y$ ) that are not worldly but could have been.<sup>347</sup>

<sup>345</sup> Melia (2003, pp. 30ff.) offers this kind of argument. As Chihara (1998, pp. 120-5) points out, clear, ontological arguments for the existence of possible worlds are few and far between.

<sup>346</sup> Where ‘ $G$ ’ stands for ‘is a game of chess’.

<sup>347</sup> A slightly more complex example along the lines of (P2) is as follows:

(P2b) It is possible that person  $x$  who is not actual and who  $Ys$  but who might not have  $Yd$  (amended from McMichael 1983, p. 54.)

As before, making certain assumptions about the world and its modal talk, this can be formalised as

(P2c)  $\exists x [\neg Px \wedge \Diamond ((Px \rightarrow Yx) \wedge \Diamond \neg Yx)]$ .

The point being, the required situation is one where there is no ‘actual’ person but if there were, he would  $Y$  (contingently).

Finally and similarly, (P3) could be parsed as

$$(P3a) \quad \exists x \exists y (Mx \wedge Yy \wedge Fx \wedge \neg Fy \wedge \Diamond Fy),^{348}$$

Note here that I am not attempting to make a similar move (to those I criticise throughout) from logic and semantics to ontology; I am not arguing that since such sentences can be formalised in terms of a standard QML (with  $\Diamond$  and  $\Box$  representing basic, modal properties), there are just ‘actual’ objects, attributes and modalities. Instead, what I am suggesting is that there is no such clear argument from logic and semantics to possibilism (or modalism); hence the attempt to derive possibilism (or modalism) from such logico-semantic premises is illegitimate. Now of course, as I suggest, such an argument is not conclusive, either in terms of refuting possibilism or supporting modalism. This being the case, I now offer some further, general arguments against the existence of possible worlds and so in support of a more genuine, modal realism.

There is perhaps no single, clear conception of possible worlds, easily lending itself to straightforward, critical appraisal. Moreover, as has often been pointed out,<sup>349</sup> there are few (if any) clear and positive arguments for the existence of such entities. In addition and as already indicated, given that this section is relatively exploratory, I assume both some familiarity with the relevant accounts and the (existence of the) relevant positive arguments; I therefore focus on problems, dealing briefly with each of the leading accounts of possible worlds (mentioned towards the end of the previous section). The key distinction between each account being ontological (Lewisian, concrete possibilist realism; Plantinga and Adams’ state of affairs-based/propositional, abstract realisms; and Stalnaker’s property-based, abstract realism), I therefore focus on metaphysical and ontological problems.

Beginning with Lewisian, concrete possibilism, aside from the apparent incredibility of such a theory, let me note the following two, main and related objections. First, where we have  $\Diamond Fx$ , for example, there is the issue that what is

---

<sup>348</sup> Where ‘*M*’ and ‘*Y*’ stand for ‘is my car’ and ‘is your car’ respectively (ignoring complications about indexicality); and ‘*F*’ stands for ‘is of colour *F*’.

<sup>349</sup> For example by McGinn 1981, p. 148; cf. Chihara 1998 and Divers 2002.

presumably an additional, modal property of a possible circumstance,  $Fx$ , should be explicable in terms of further, non-modal circumstances.<sup>350</sup> That is, just how are possible and necessary properties explicable in terms of further non-modal arrangements of objects and attributes, in additional, concrete worlds? Now on its own perhaps, this objection is more suggestive than conclusive but, when conjoined with the related, second objection, the suggestion (that the relevant ontology is both bloated and ill-suited to the explanatory task at hand) becomes much more conclusive.

Second then, is the issue of the nature of the relevant ontology. In short, if possible worlds are real, concrete objects, then presumably they will have essences and criteria of identity and individuation. In terms of identity and essence, just what are the essential features of particular possible worlds? As McGinn notes,<sup>351</sup> unlike space and time (for example), which have fairly clear (basic) essences, such as position and order respectively, possible worlds are neither spatially nor temporally explicable; they are not spatially related to the actual world, nor are they clearly and linearly orderable. Moreover, if worlds are maximal (as is almost universally insisted), what occurs therein is surely all that is essential to them. But then of course,

“...one loses one’s grip on the idea that a particular world is distinct from the set of properties which characterize it.”<sup>352</sup>

The point being, possible worlds would seem not to have at all clear criteria of identity and essence.

Turning (briefly) to individuation (as I return to this with respect to all accounts of possible worlds, below), clear questions here are: ‘how many worlds are there?’, and ‘how do we count them?’ As we shall see below, the issue of the cardinality of (the set of) possible worlds leads to a clear, potential paradox—as this applies to all versions of possible-worlds realism however, I set this aside for now.

---

<sup>350</sup> Relatedly, there is the issue of ‘modal irrelevance’, as noted by Van Inwagen (1985, p. 199) and Jubien (1988, p. 305), for example. The issue being, how my non-identical counterpart’s non-causally-related to-ings and fro-ings have much to do with my modal properties.

<sup>351</sup> McGinn 1981, pp. 150-3.

<sup>352</sup> *Op. cit.*, p. 152.

Moving briefly on to state of affairs and proposition-based accounts of possible worlds, it is fairly clear that similar problems also beset such theories. Again, if *Fx* is possible, how is this explicable merely in terms of further states of affairs or propositions? Surely *Fx*'s possibility is a way or mode of *Fx*'s being, as opposed to being a further state of affairs or proposition. In effect, if states of affairs are identical to propositions, this line is very similar to the 'modal irrelevance' line suggested against Lewisian possibilism—the details of which I set aside for present purposes.<sup>353</sup> Similarly, precisely analogous problems of essence, identity and individuation also afflict such accounts of possible worlds; as I cover the first two of these above and as I return to individuation below, I also set these aside presently.

Finally then, turning to Stalnaker's account of possible worlds as sets of properties, although it is difficult to see how what appear, initially, to be objects, should be explained in terms of properties,<sup>354</sup> at least this theory seems to meet a tacit condition of the previous two objections; that *Fx*'s being possible is a mode or way of *Fx*'s being, rather than a concretum, state of affairs or proposition. So, is Stalnaker's position more acceptable than the previous two kinds of account? Well first, as I suggest against the previous, state of affairs/propositional account, there is a very potential issue of circularity;<sup>355</sup> if propositions are sets of possible worlds and possible worlds are to be explained in terms of properties, then propositions, which presumably consist of objects and properties, and possible worlds are looking extremely, explanatorily close. Again, setting this worry aside, there still remain precisely analogous issues as before; essence, identity and individuation. The time has come therefore, to turn (briefly) to the issue of the cardinality of possible worlds.

As stressed throughout, this section is only a brief and exploratory

---

<sup>353</sup> There are fairly clear and separate objections contingent upon the distinction of states of affairs and propositions; namely if possible worlds are states of affairs/propositions and yet if either of the latter is best understood in terms of sets of possible worlds, some intricate footwork is required to avoid circularity. As several pieces of 'intricate footwork' are available here, I very much leave this debate for future research.

<sup>354</sup> Fine makes a similar point with respect to several ersatzist positions: "...any possible state of affairs is possibly a state of affairs but no proposition is possibly a state of affairs..." and "...a possible world is possibly the world,... yet no way the world might have been is possibly the world..." (2003, p. 216); cf. Forrest 1986.

<sup>355</sup> As widely noted from (at least) McGinn (1981, p. 160) onwards.

discussion of some of the problems besetting standard, possible worlds-based accounts of modality. As I suggest, the main issues are identity, essence and now, individuation; specifically, the problem of the cardinality of the ‘set of all possible worlds’. Now, this issue is live, contentious and vexed; as I suggest then, my comments here are not to be taken as definitive—they are merely strongly suggestive that (in addition to the foregoing problems) possible-worlds accounts of modality might be less preferable than what I describe as the realist, ‘modalist’ approach.

The basic problem is as follows.<sup>356</sup> If  $T$  is the set of all truths,  $\{T_1, T_2, \dots\}$ , and  $P(T)$  the powerset of (all subsets of)  $T$ ,  $\{\emptyset, \{T_1\}, \{T_2\}, \dots, \{T_1, T_2\}, \dots\}$ , Cantor’s theorem states that the cardinality of  $P(T)$  is greater than that of  $T$ . Now, for each element,  $X$ , of  $P(T)$  there corresponds a further, distinct truth,  $T_n$ , such that  $T_n$  either is or is not a member of  $X$ . Accordingly, there are as many distinct truths,  $T_n$ , as there are elements of  $P(T)$ . Hence the set of all  $T_n$ s will be bigger than  $T$ . Thus,  $T$  cannot be the set of all truths (and neither can  $P(T)$ , given the possibility of  $P[P(T)]$ ); there can be no such set. Versions of this ‘paradox’ argument are employed against the set of all possible worlds,<sup>357</sup> the set of all truths (and maximal, consistent sets of propositions),<sup>358</sup> maximal sets of states of affairs (and propositions again)<sup>359</sup> and the set of all possible essences.<sup>360</sup>

Divers claims that the paradox argument(s) can be made to tell against all versions of actualist possibilism (i.e. Plantinga, Adams and Stalnaker-style theories), with the addition of the following premise:

(PW) “For every possible world, there is a corresponding maximal consistent set of propositions”.<sup>361</sup>

Combining the paradox with (PW), we get the result that there are no such sets

---

<sup>356</sup> Versions of this argument are presented by Davies 1981, Grim 1985 and Bringsjord 1985; cf. Menzel 1986.

<sup>357</sup> Davies 1981; although Davies relies on what Bringsjord (1985) describes as the “rather slippery notion of *thinking a proposition*”. Either way, a wider application of the Grim-Bringsjord argument (without Davies’s ‘thinkability’ of propositions) can be shown to apply to all versions of possible-worlds realism—as I explain below.

<sup>358</sup> Grim 1984.

<sup>359</sup> Bringsjord 1985 and Chihara 1998, pp.126-7.

<sup>360</sup> Chihara 1998, pp. 130-1.

<sup>361</sup> Divers 2002, p. 244, my labelling.

of propositions and so no such possible worlds.<sup>362</sup> Now, Divers also offers three potential ‘solutions’ to the paradox argument(s); ‘restriction’, ‘proper class’ and ‘non-maximalist’. As each reply is additionally contentious and as the details of each require “substantial work”,<sup>363</sup> I set aside thorough discussion at this point; suffice to say that each response limits possible-worlds responses to the paradoxes, to such a level that their initial, alleged explanatory power is further undermined.<sup>364</sup>

As I suggest then, although this section has been tentative and promissory, I still aim to support the following points; that the main arguments for an understanding of modality in terms of possible worlds are logico-semantic (and that this—as I urge throughout— is the wrong order of argument); that even if it were something like the right order of argument, no derivation of possible worlds is available from QML; and finally, and most importantly, that possible worlds are deeply problematic in terms of their identity and individuation. This being the case, the explanatory force of possible worlds is highly dubious and the consequent drive to the required, bloated, ‘realist’ ontology, deeply suspect.

## 2.4 The grounding of modality

Given what I have said so far, it is relatively clear that we need a different and *genuinely* realist account of modality. Accordingly, in this final section, I now begin the initial, tentative case in favour of an essence-based account of the grounding of metaphysical modality.<sup>365</sup>

---

<sup>362</sup> Divers (2002, p. 255) also claims that a Lewisian, concrete possibilism can avoid this argument given an assumption that there is a “maximal possible size for spacetime”. This claim is deeply contentious—and I do not share it—I think the paradoxes apply to all versions of possible-worlds accounts of modality. Again however, this is an area for further work.

<sup>363</sup> *Op. cit.*, p. 249.

<sup>364</sup> Although Chihara (1998) claims that the paradoxes also apply to ‘sets of all essences’, I do not think that they apply to my account of modality, since this does not involve a set of all essences and especially not *worlds* as reducible to such sets.

<sup>365</sup> With respect to Hale’s (1996, McFetridge 1990-influenced) argument that ‘broad’ logical necessity is absolute and ‘metaphysical’ necessity is either less strong than (and ‘relative’), or equivalent to, the former, I follow Lowe (1998, pp. 16-21) and Shalkowski (2004; cf. 1997) in viewing Hale’s ‘broad’ as mere, conceptual, formal (or, as per ch. 4, ‘narrow’) logical necessity. Additionally, as I explain throughout the present section (and further below), metaphysical necessity *is* ‘relative’; relative to the natures or essences of all objects and attributes. Consequently, the alleged equivalence of the metaphysical and the ‘broad’ qua conceptual is

In very brief detail, my argument is as follows. First, considerations such as those I make against the possible-worlds understanding above, suggest that possible worlds are not basic in terms of explaining modality and instead, that modality itself is the fundamental notion. This being the case, as I go on to suggest above, we should instead begin with a notion of the ('actual') world as basic, and of the objects and attributes of the world as determining the possibilities and necessities in virtue of their natures or essences. In addition to the anti-possible worlds considerations then, some argument is required for the claim that objects' and attributes' essences are what determine or ground modality. Admittedly, this argument is somewhat complex, but it is effectively one that is presented in a collection of papers due to Kit Fine.<sup>366</sup>

Second then, instead of possible worlds accounting for modality, I argue (following Fine to a large extent) that it is essence that does the relevant grounding work—metaphysical modality is a sub-species of essentialist modality; necessity, possibility and contingency in virtue of objects' and attributes' natures. So, against those who argue that essence is grounded in modality, instead, it is modality that is grounded in essence.

The details of this latter argument<sup>367</sup> are as follows. There are two, broad, modal accounts of essence, the categorical and the conditional, respectively;

(CAT)  $x$  is essentially  $P$  iff necessarily  $Px$

(COND)  $x$  is essentially  $P$  iff necessarily  $Px$  if  $x$  exists.<sup>368</sup>

The problem with both accounts concerns the sufficiency, rather than the

plainly mistaken and the 'relativity' of metaphysical necessity is not the problem Hale envisages.

<sup>366</sup> See Fine 1994, 1995a, 1995b and 2003.

<sup>367</sup> As presented most explicitly in Fine 1994.

<sup>368</sup> The separate accounts are intended to deal with issues surrounding contingent existence and 'weak necessity'; cf. McLeod 2008a—and the discussion of 'conditional', alleged examples of the necessary *a posteriori* in ch. 5, §2 (e.g. n. 11).

I am also aware of some issues in the 'logic of essence' here (hence the lack of a fully formal presentation). Specifically, the following are further ways of expressing both accounts:  $x$  is essentially such that  $P / P$  is an essential property of (or an essence of, or part of the essence of)  $x$  iff necessarily  $x$  is/has  $P$  (if  $x$  exists—i.e. *mutatis mutandis* for the two accounts). I follow Fine 1995a, 1995b, Correia 2007 and Lowe 2007b here. Additionally, the necessity is clearly intended to be *de re*.

The issues of the logic of essence and (relatedly) what 'essentially' and '□' modify are deep and in need of further research. See again McLeod 2008a, pp. 324-7, for good, initial discussion.

necessity of the analysans (since if  $P$  is essential to  $x$ , it is surely the case that  $\Box Px$ —at least, if  $x$  exists). Accordingly, there are several, clear, counter-examples to the right-to-left conditional versions of both theses. There is also a separate, brief—but conclusive—‘existential’ objection to (COND) alone; it suffers the terminal defect that it renders existence an essential property. As Fine writes,

“...it is necessarily the case that he [Socrates] exists if he exists. But we do not want to say that he essentially exists”.<sup>369</sup>

Setting aside issues of existence, properties and predication (which are shared assumptions of both (COND) and the ‘existential’ objection),<sup>370</sup> I take this argument to be pretty conclusive against the conditional, modal account of essence. Thus, I turn to the other three counter-examples as versus (COND) *and* (CAT).

The three counter-examples involve set theory, necessary distinctness and necessary truths, respectively. Taking the first of these, consider Socrates and the singleton whose sole member is Socrates, namely {Socrates}. According to a standard, modal set theory,

(Soc) necessarily, if Socrates exists, he belongs to {Socrates},

which, according to (COND) entails

(Soc1) Socrates essentially belongs to {Socrates}.

Now, following Fine’s suggestion,<sup>371</sup> having conditionalised the relevant property, in (Soc), it also entails the following, via (CAT):

---

<sup>369</sup> Fine 1994, p. 6; cf. Correia 2007, p. 66.

<sup>370</sup> McLeod (2008a, pp. 319-20) adds several, similar problems to the conditional account; e.g. given the validity of a conditional with a false antecedent, non-existent objects (i) exist necessarily and (ii) have all properties *and their negations*.

<sup>371</sup> Fine 1994, p. 6; cf. Correia 2007, pp. 63-6. Whilst disputing Fine’s claim that there is no successful modal account of essence, he begins by accepting all four of Fine’s main objections to the conditional and categorical accounts.

(Soc2) Socrates essentially belongs to {Socrates}, if Socrates exists.

Thus, given (Soc)'s truth and the strong counter-intuitiveness of (Soc1) and (Soc2), the 'set theory' argument appears to refute both the conditional and categorical, modal accounts of essence.

Of course, some might find an objection based on set theory and abstracta problematic. This being the case, Fine presents two further counter-examples, as follows. Considering two distinct objects, Socrates and the Eiffel Tower, the following is true:

(D) necessarily, if Socrates exists, Socrates is distinct from the Eiffel Tower,

which, as before, entails

(D1) Socrates is essentially distinct from the Eiffel Tower

and

(D2) Socrates is essentially distinct from the Eiffel Tower, if Socrates exists,

via (COND) and (CAT), respectively. Similarly, considering any necessary truth,  $p$ , we have

(N) necessarily, if Socrates exists, Socrates is such that  $p$ ,

which, again as before, entails

(N1) Socrates is essentially such that  $p$

and

(N2) Socrates is essentially such that  $p$ , if Socrates exists,

via (COND) and (CAT), respectively. Again as before, with (D) and (N) being true, yet (D1), (D2), (N1) and (N2) being extremely counter-intuitive, the 'necessary distinctness' and 'necessary truth' arguments appear to refute both modal accounts of essence.

There are of course some potential, initial issues with all three types of counter-example; they involve set theory and abstracta, the contentious matter of necessary distinctness, and the potential problem that being 'such that  $p$ ' is arguably not a genuine predicate. As it happens, I am confident of the viability of all three objections, perhaps with decreasing strength in order of presentation. That said, even the 'degenerate predicate' response (versus the 'necessary truth' objection) can be countered by insisting that  $x$  is 'such that  $p$ ' involves a genuine predicate, even if it involves a 'degenerate property' of  $x$ .<sup>372</sup> All of this being the case, it is fairly clear that essence cannot be grounded in metaphysical modality and that, on the contrary, it is modality that is grounded in essence.

In very brief, final summary of my position on rationality, modality and essence then, I take the essences or natures of all things to be fundamental, with metaphysical (or 'broad logical') modality being necessity, possibility and contingency in virtue of objects', attributes' and so on (i.e. all—metaphysical—things') natures. As very much stressed in Chapter 4 (but also again in the present chapter), strict and/or narrow logical modality are then necessity, possibility and contingency in virtue of the natures of the 'logical things', i.e. the laws (whatever they might be), theorems, axioms, propositions, definitions and concepts, for example (and moving from the strict to the narrow). So far, so alethic. Epistemic modality on the other hand is an extremely subjective, non-

---

<sup>372</sup> As Fine suggests (1995a, pp. 53-5); cf. Correia 2007, pp. 63-4. There are some additional, slightly deeper, potential responses, such as the insistence on 'relevant' properties that 'really characterise' the objects apt for consideration (Gorman 2005), and Correia's (2007, pp. 67-83) alleged, alternative, 'Priorean', modal account of essence. In very brief response to both of these, I am slightly suspicious of the notion of 'relevance' here (as is Fine 1994, pp. 6-7); it is not at all clear that 'real characterisation' can occur without presupposing the relevant kind of essentialism. With respect to 'Priorean' modality, Correia's response relies on an account of 'global' and 'local' modality, where the latter appears to be very close (if not equivalent) to Finean essence—as Fine argues (2007). That said, the responses are interesting—so both are obvious areas for further research.

alethic modality; necessity, possibility and contingency in virtue of what a subject knows or believes. Finally then, rational modality, is a more intersubjective, fallible but (rationally) corrigible and, ultimately, *modal*, modality; necessity, possibility and contingency in virtue of, general, human (or similar, wider) rational capacities. As very much argued throughout then, with metaphysical modality so grounded in essence and, especially, with the rational grounded in the metaphysical, what is genuinely *a priori*, *a posteriori* and conceivable, is necessary, contingent and possible, respectively.

### 3 Thesis summary

My initial questions concern the nature of conceivability, possibility, and the relationship between the two—specifically, does conceivability ‘entail’ or is it a ‘guide to’ possibility? In the introductory chapter I offer a working understanding of conceivability in terms of ‘*a priori* possibility’. Thus, in order to answer the initial questions, it is first necessary to understand apriority and modality—and then the relationship between conceivability, apriority and modality. That is, what is the nature of the *a priori*, does apriority ‘entail’ necessity, and how are apriority, conceivability and modality related? This being the case, the thesis is split into two larger parts; one on apriority/aposteriority and modality (chs. 2 to 4), and another on conceivability, apriority/aposteriority (i.e. rationality) and modality (chs. 5 to the present).

I begin to consider the first main issue (in ch. 2) by discussing the *a priori* as traditionally understood in terms of negative (e.g. independence from experience) and positive accounts (e.g. rational intuition or insight into necessary truth). Finding problems with both kinds of explanation (negative accounts being dependent on the additionally problematic notions ‘independence’ and ‘experience’; positive accounts being potentially obscure, as well as further dependent on some unclarified notion of necessity), I nevertheless draw two lessons; (i) that some notion of necessity (specifically ‘rational necessity’) is involved in the claim that a proposition *p* is justifiable on an *a priori* basis (i.e. if *p* is justifiable *a priori*, *p* is rationally necessary); and

relatedly, (ii) that an *a priori* proposition is one that is, strictly, not defeasible by empirical evidence. I go into much more detail on (ii) via a discussion of Euclidean geometry (ch. 2, §5) but before commencing the main discussion of apriority and modality, I also admit that *a priori* reasoning and justification is intersubjective (ch. 2, §4) and fallible but collectively corrigible (ch. 2, §6—but continued throughout).

Turning to lesson (i), if apriority somehow ‘entails’ necessity and similarly for aposteriority and contingency, perhaps some form of coincidence thesis (CT) obtains. In Chapter 3 I use Goldbach’s conjecture (GC) and its ‘contingent equivalent’ (CGC), to disambiguate (CT) into the following four, putative, conditionals:

- (CT1) apriority entails necessity;
- (CT2) aposteriority entails contingency;
- (CT3) necessity entails apriority;
- (CT4) contingency entails aposteriority.

As well as thus clarifying (CT), I also claim that (GC) and (CGC) show that unqualified versions of (CT3) and (CT4) cannot stand, and that there is a fairly clear lack of coextensiveness between the rational and metaphysical domains; whilst all true propositions are either necessarily or contingently true, they are not all justifiable *a priori* or *a posteriori*. This being the case, (CT1) and (CT2) cannot be viewed as the relevant biconditionals that would generate (CT3) and (CT4); similarly, (CT4) and (CT3) cannot be viewed as clear contrapositives of (CT1) and (CT2), respectively. So perhaps the best one can do with respect to (CT3) and (CT4) is to endorse,

- (CT3\*) if  $p$  asserts a metaphysically necessary circumstance and if  $p$  is knowable, then  $p$  is an *a priori* justifiable proposition,

and

- (CT4\*) if  $p$  asserts a metaphysically contingent circumstance and if  $p$  is

knowable, then  $p$  is an *a posteriori* justifiable proposition.

Of course, following the work of Kripke, the main, current threat to any (attenuated) (CT) is the possibility of contingent *a priori* and necessary *a posteriori* propositions. This being the case, I spend some time on a detailed discussion of the contingent *a priori* (ch. 3), and the necessary *a posteriori* (ch. 5). Beginning with (CT1) and the contingent *a priori*, I argue that genuine apriority does entail necessity (ch. 3); indeed a proposition can only be justifiable on an *a priori* basis if it is (or rather asserts) a necessary circumstance. That is, I endorse

(CT1\*) if  $p$  is a genuinely *a priori* justifiable proposition, then  $p$  must assert a metaphysically necessary circumstance.

Returning to the theme of fallibilism, I admit that such a notion of ‘genuine’ apriority is highly idealised, so I also endorse fallibilist versions of (CT1\*):

(CT1p) if  $p$  is a *prima facie a priori* justifiable proposition, then  $p$  is a very weak guide to metaphysical necessity.

(CT1s) if  $p$  is a *secunda facie a priori* justifiable proposition, then  $p$  is a strong (but still fallible) guide to metaphysical necessity.<sup>373</sup>

A clear corollary of (CT1\*) is that strictly there can be no genuinely contingent *a priori* propositions. In line with this, I argue that apparently ‘contingent *a priori* sentences’ express (at least) two propositions, but these are (generally) either ‘widely’ contingent but justifiable on an *a posteriori* basis (if at all justifiable), or if justifiable *a priori* then ‘narrowly’, necessarily the case.<sup>374</sup>

Finally concerning the *a priori*, in Chapter 4 I summarise my position, returning to some of the problems of negative and positive accounts, and offering an analysis that underpins both; apriority should be understood in

---

<sup>373</sup> For ease of expression, I mainly focus on ‘genuine’ versions of the relevant theses in what follows. Throughout however, the reader is urged to bear in mind that similar fallibilist sub-theses also obtain.

<sup>374</sup> The parenthesis points back towards (GC) and (CGC); not all necessary/contingent propositions *are* justifiable.

terms of 'rational necessity'. This notion explains both the 'experience-independence' aspects of negative accounts and, as I suggest, positive explanations such as 'rational insight' or 'intuition'—whilst avoiding allegations of obscurantism and mysteriousness that can be levelled against the latter. Moreover, my position also avoids a potential regress problem (ch. 4, §2.1) that can be brought against traditional, positive accounts, whilst at the same time, being thoroughly fallibilist (a point I reinforce in ch. 4, §2.2).

As suggested throughout, apriority qua rational necessity (and rational modality in general) is not coextensive with, but is grounded in, metaphysical necessity (and modality). Again in Chapter 4, I go into more detail on such claims, arguing that rational necessity is not the same as epistemic or logical necessities, since epistemic necessity is entirely non-modal and subjective, whereas logical necessity is entirely formal and analytic. Apriority, on the other hand, is (at least) intersubjective and broadly modal, and it is not the same as narrow or strict, logical necessity, since the latter requires apriority (or rational necessity) for its explanation. With respect to the grounding of apriority (and rational modality in general) in metaphysical necessity (and modality), as this is perhaps the central topic of the thesis, I only introduce the discussion in Part I, leaving the final analysis until Part II, since a discussion of the necessary *a posteriori*, conceivability and possibility is required in order to draw the conclusion that rational modality is grounded in the metaphysical.

Turning to (CT2) and the necessary *a posteriori* then, as with the contingent *a priori*, I argue that there are no genuine cases; apparently 'necessary *a posteriori* sentences' in fact analyse out into (at least) two propositions, which assert either necessary circumstances justifiable on an *a priori* basis (if justifiable), or *a posteriori* justifiable but contingent circumstances. In this way, I claim that aposteriority does entail contingency, in that a proposition that is only or essentially justified on an *a posteriori* basis, must be a contingent proposition. That is, I endorse,

(CT2\*) if  $p$  is an *a posteriori* justifiable proposition, then  $p$  must assert a metaphysically contingent circumstance.

During my discussion of the necessary *a posteriori*, I begin to suggest that a discussion of the semantics and pragmatics of assertion and belief ascription is required for a more complete understanding of conceivability and possibility. This being the case, I deal with Frege and Kripke's puzzles, conceivability and possibility in Chapter 6. With respect to the two puzzles, I argue that they rest on a confusion of wide and narrow propositions asserted by a pair of original and apparently problematic sentences—or propositions. For example, although it appears possible for an entirely rational Peter to believe both that

(20) Paderewski has musical talent

and that

(21) Paderewski does not have musical talent,

at precisely the same time (assuming Peter has different 'guises' of 'Paderewski' for example), truly believing either proposition (widely) would result in the denial of the other, since (20) and (21) are contradictories. The point being, it is not possible for **Paderewski** to be both musical and not musical (at the same time), so it is not (widely) possible to believe (20) and (21); such a scenario would be rationally impossible or inconceivable. Narrowly, of course, Peter can believe both (20) and (21) (at the same time) since they are not narrow contradictories; it is entirely possible (for example) for two identically named but distinct things to have opposing properties; it is entirely conceivable that *m* is musical, *n* is not musical and *m* is not identical to *n*.

Finally then, turning to conceivability and possibility, given my position on Frege and Kripke's puzzles, and the necessary *a posteriori*, I hold that there is no real problem in reasoning from genuine conceivability to metaphysical possibility and, indeed, *p* is conceivable only if *p* is possible. Simply read then, I appear to endorse

(CON) if *p* is conceivable, then *p* is possible<sup>375</sup>

---

<sup>375</sup> Bearing in mind repeated points about fallibilism.

and its apparent contrapositive,

(IMP) if  $p$  is impossible,  $p$  is inconceivable.

I do however seem to question the related

(INC) if  $p$  is inconceivable,  $p$  is impossible

and

(POS) if  $p$  is possible, then  $p$  is conceivable,

suggesting that both limitations and exaggerations in reasoning abilities might allow there to be possibilities that are ‘inconceivable’ and ‘inconceivabilities’ that are in fact possible.<sup>376</sup>

In the final section of the previous chapter, I flag the issue of contraposition with respect to the relevant (CON) theses. As discussed, a simple acceptance of (CON) and (IMP) would appear to lead to a clear tension in my position, given an endorsement of (CT3\*) in the light of (GC), and especially given the acceptance of the rational-modal theses,

(R1)  $R\Box p \leftrightarrow R\neg\Diamond\neg p$

(R2)  $R\Diamond p \leftrightarrow R\neg\Box\neg p$

(R3)  $R\neg\Box p \leftrightarrow R\Diamond\neg p$

(R4)  $R\neg\Diamond p \leftrightarrow R\Box\neg p$

(R5)  $R\Box p \leftrightarrow R\neg\Box p \wedge R\Diamond p$

By way of avoiding this alleged tension, I argue that we should endorse all of (R1) to (R5), as definitional of rational modality but with the caveat that the ‘R’ superscript indicates ‘strict’ or ‘human’ rationality. With this caveat in place, there are two clear implications; (i) that apriority-aposteriority and

---

<sup>376</sup> As in the previous chapter and below, the issue of *non-* and inconceivability is very much up for discussion; hence the scare quotes here.

conceivability-inconceivability are not exhaustive (unlike necessity-contingency and possibility-impossibility); and (ii) that we must therefore be careful when we say that something is ‘not justifiable *a priori*’ (or ‘not *a posteriori*’), or that something is ‘not conceivable’ (or ‘not inconceivable’). What I mean by both (i) and (ii) is that there is a third category for the rational-modal domain; there are *a priori*, *not-a priori* (i.e. *a posteriori*) and *non-a priori* (neither *a priori* nor *a posteriori*, i.e. unknowable) propositions, and there are conceivable, inconceivable and *non-conceivable* (i.e. neither conceivable nor inconceivable; undecidable<sup>377</sup>) propositions. Simply put, just because a proposition is ‘not *a priori* justifiable’ (i.e. what I am calling *non-a priori*), this does not mean that it is justifiable *a posteriori*; and just because a proposition is ‘not conceivable’ or ‘inconceivable’ (i.e. what I am calling *non-conceivable*), this does not mean that it is genuinely inconceivable; some propositions’ (rational) modal status is unknowable or undecidable. In short, this is what I mean when I make such claims as that the rational is grounded in, or parallels, the metaphysical-modal.

Accordingly, (R1) to (R5) operate in more or less the same way as (M1) to (M5), except that rational modality is metaphysical modality in virtue of rationality; i.e. the nature of limited, cognitive agents’ rational abilities. Thus (R1) (in conjunction with the relevant, final version of (CT1)) defines an *a priori* proposition as a ‘rationally necessary’ proposition qua a strictly—i.e. human- (or similar)—knowably or justifiably, metaphysically necessary proposition. Similarly (R2) (plus the relevant, final (CON)) equates conceivability with (strictly) rationally justifiable, metaphysical possibility; (R4) (plus the relevant (INC)) analyses inconceivability as (strict) rational, justifiable impossibility; and (R5) (plus the relevant (CT2)) defines aposteriority as (strict) rational *not-necessity* (*not-apriority*) and rational possibility.

With this understanding in place, we can (i) outline the correct reading of the (CON) theses and (ii) determine whether (and if so how) the relevant (CON) theses are contrapositives. Very much in line with the amended (CT) theses then, the best versions of the (CON) theses are:

---

<sup>377</sup> I am indebted to Yablo (1993) for terminology here.

- (CON\*\*) if  $p$  is a conceivable (qua strictly rationally possible, so knowable/justifiable) proposition, then  $p$  must assert a metaphysically possible circumstance;
- (IMP\*\*) if  $p$  asserts a (strictly knowable/justifiable) metaphysically impossible circumstance, then  $p$  must be an inconceivable proposition;
- (INC\*\*) if  $p$  is an inconceivable (qua strictly rationally impossible) proposition, then  $p$  must assert a metaphysically impossible circumstance;
- (POS\*\*) if  $p$  asserts a (strictly knowable/justifiable) metaphysically possible circumstance, then  $p$  must be a conceivable proposition.

Taking (CON\*\*) and (IMP\*\*) first, on the amended readings and with due care over the 'strict' qualifications and the relevant negations, it is fairly clear that the two are contrapositives. Strict, justifiable metaphysical impossibility is the correct negation of the consequent of (CON\*\*), and since we are limited to strictly justifiable propositions (given the clear antecedent and what I say about (R) above), *inconceivability* is the correct negation of conceivability, and *vice versa*; so 'knowable', 'justifiable' impossibility does entail inconceivability after all. That is, (CON\*\*) and (IMP\*\*) are mutual contrapositives. Moving on to (INC\*\*) and (POS\*\*), again, the correct negation of a (justifiable) metaphysical impossibility is a metaphysical possibility and *mutatis mutandis* for (justifiable) inconceivability-conceivability, and *vice versa*; so (POS\*\*) and (INC\*\*) are also mutual contrapositives.

Looking back at the four original (CT) theses (as amended in line with (CON\*\*)) above,

- (CT1\*\*) if  $p$  is a genuinely *a priori* justifiable (qua strictly rationally necessary) proposition, then  $p$  must assert a metaphysically necessary circumstance;
- (CT2\*\*) if  $p$  is an *a posteriori* justifiable (qua strictly rationally contingent) proposition, then  $p$  must assert a metaphysically

contingent circumstance;

(CT3\*\*) if  $p$  asserts a (strictly knowable/justifiable) metaphysically necessary circumstance, then  $p$  must be justifiable on an *a priori* basis;

and

(CT4\*\*) if  $p$  asserts a (strictly justifiable) metaphysically contingent circumstance, then  $p$  must be justifiable on an *a posteriori* basis;

it is now clear that similar reasoning also applies here; for true propositions, (CT1\*\*) and (CT4\*\*) are mutual contrapositives, and *mutatis mutandis* for (CT2\*\*) and (CT3\*\*). As before, since we are talking about strictly knowable or justifiable propositions, then the negation of apriority is aposteriority, and contingency of necessity (and *vice versa*).

#### 4 Issues, objections and replies

There are, of course, several objections that can be levelled against the foregoing. For example, first, that much of what I say here ignores or perhaps contradicts what I say about fallibilism and justifiability elsewhere in the thesis. Second, that my account of the *a priori* and conceivability as ‘grounded in’ rational and, ultimately, metaphysical modality, places the analysans too close to the analysandum; i.e. that my account is circular. Third, is the allegation that, despite criticising two-dimensional semantics, my account is ultimately two-dimensional, in recognising two aspects of meaning and in conflating epistemic (qua rational) and metaphysical modalities. Finally, fourth (and returning to an issue first mentioned in ch. 3), is the objection that in offering such a close account of the rational and the metaphysical, I leave no room for modal error.

In what follows I deal with these objections in turn; fallibilism, justifiability, circularity and two-dimensionalism (in §4.1), and modal error separately (§4.2).

#### 4.1 Fallibilism, justifiability, circularity and two-dimensionalism

In terms of fallibilism, the detailed allegation is that I admit that *a priori* justification is thoroughly fallible (in ch. 2, §6 and elsewhere), yet presently I appear to claim that (genuine) apriority/(in)conceivability entails necessity/(im)possibility and so on. Now, I deal with the general issue of fallibilism in relevant sections of the thesis,<sup>378</sup> so I do not have a great deal to add here. All I would say is that first, my present conclusions are intended to bear in mind my previous points on fallibilism;<sup>379</sup> I focus on ‘genuine’ versions of (CT), (CON) and so forth, very much for ease of reference—if I were to qualify each thesis with *prima* and *secunda facie* versions, the thesis would become quite unwieldy. Second and more importantly, reminding the reader of my position on genuine, *prima* and *secunda facie* apriority, I would very much extend this to aposteriority and (in)conceivability. In much the same way that *a priori* justification is corrigible on further rational reflection (such that *e<sub>5</sub>*, for example, is *prima* but neither *secunda facie* nor genuinely *a priori*), a proposition such as ‘Eminem is distinct from Slim Shady’ might be *prima* but it is neither *secunda facie* nor genuinely (widely) conceivable—as per ch. 5.

With respect to justifiability, here the problem is that throughout the thesis (and especially in the previous section) I suggest that there are *a priori*, *a posteriori* and *non-a priori* (or conceivable, inconceivable and *non-conceivable*) propositions, yet towards the end of the previous section I claim that if *p* is necessary, it must also be *a priori* (and so on). In quite a simple response to this allegation, in the previous section I try to make it entirely clear, with various ‘strict’ (i.e. pertaining to human, or similarly, cognitively limited agents’, rational abilities) and ‘knowable’ or ‘justifiable’ insertions, that we are talking about (humanly and similar) *knowable* propositions; and for such propositions, aposteriority *is* the negation of apriority, and similar for (in)conceivability. So, where some *p* is strictly knowable/justifiable (i.e. for human beings and similar) and asserts a necessary (or contingent/possible/impossible) truth, such a *p* is *a priori* (or *a posteriori*/conceivable/inconceivable respectively).

---

<sup>378</sup> Notably, ch. 4, §§2 and 4—in addition to ch. 2, §6.

<sup>379</sup> As suggested several times above.

Ultimately, I am claiming that apriority (for instance) consists in rational necessity, which is grounded in metaphysical necessity;  $p$  is *a priori* iff  $p$  is rationally necessary iff  $p$  is strictly, knowably/justifiably metaphysically necessary. That is, (strict) rationality consists in what it is (strictly) necessary/contingent/possible/impossible to believe; i.e. what might be called metaphysical necessity in virtue of strict (i.e. human or similar) rationality; literally what we must, may or may not, can, or cannot know or be justified in believing.

Turning to the second of the main objections, the unconvinced might insist that the present account is either extremely close to being, or just is, circular. The alleged point being that if apriority (and so on) consists in rational necessity which is (more or less) metaphysical necessity in virtue of rationality, this is effectively what rational necessity (i.e. apriority) means, or is, in the first place. This kind of objection is perhaps not too far from the kind of general objection to ‘analytic philosophy’ that consists in something akin to the ‘paradox of analysis’; whereby either the analysans means the same as the analysandum, in which case the analysis is uninformative, or the analysans does not mean the same as the analysandum, in which case the analysis fails. Without going into great detail on responses to this kind of objection, let me say that one of its key assumptions is something akin to the idea that there is a single notion of meaning; and a good analysis must both correctly and informatively provide such a ‘meaning’. Of course, one of the central implications of this thesis is that there is no such clear, singular notion of ‘meaning’; meaning (for example, what a sentence expresses or asserts—on occasion of use or generally) is a highly complex issue, and it is very arguable that sentences can express (at least) two propositions, along the lines of what might be called ‘wide’ and ‘narrow’ meanings (as dependent on circumstances). In this way, the analysis of apriority (and rationality in general) that I am offering, is intended to provide a wide or ‘real’ definition (i.e. to provide real necessary and sufficient conditions),<sup>380</sup> as opposed to capturing all possible ‘narrow’ meanings or, perhaps, ‘senses’ of the relevant terms. That is, I intend to provide a wide analysis, along the lines of sameness of extension, as opposed

---

<sup>380</sup> I nod in the direction of Fine 1994 here.

to a 'narrow' analysis, in terms of sameness of 'narrow content' or 'grasped' meaning (or similar). This analysis is that the rational-modal is grounded in the metaphysical; hence both the need for, and explanation of, the proximity of analysans to analysandum. Having said this, I think it is fairly clear that I have left room for some distance between the rational and the metaphysical modal. As I stress above (and notably in Chapter 3), whilst all propositions are necessary or contingent, this is not the case for apriority, aposteriority and (in)-conceivability; some propositions are, for example, *a priori*, some are not *a priori* and some are 'non-*a priori*' (i.e. neither provable or disprovable on *a priori* grounds—i.e. unknowable or unjustifiable propositions). In this way, although the rational and metaphysical, modal domains are extremely explanatorily close, they are not identical; rational modality is not coextensive with the metaphysical.

Third then, is the claim that despite my criticisms of two-dimensional modal semantics, the present account is ultimately two-dimensional. In slightly more detail, the allegation is that in accounting for the contingent *a priori* and necessary *a posteriori* by way of sentences expressing two 'narrow' and 'wide' propositions, which are either contingent but *a posteriori* or necessary but *a priori*, my position is (i) deeply two-dimensional and (ii) conflates metaphysical and rational (qua epistemic) modalities. As with fallibilism, I deal with such points at several points in the thesis.<sup>381</sup> That said, there are two distinct points here, both of which require a little more attention. Beginning with (i), I have two responses, both of which I mention in previous chapters. First, I stress throughout Chapters 3 and 5 that relevant, candidate sentences can express *at least* two propositions, depending on context, pragmatics and, importantly, the relevant metaphysics—I explain the latter in a moment. Second and more importantly, my position is unlike two-dimensionalism in that it does not posit a systematic relationship from sentences to primary/A- and secondary/C-propositions,<sup>382</sup> involving clear semantic rules (and such constructs as 'dthat', † and  $\mathcal{A}$  operators);<sup>383</sup> it does not move from logic and semantics to

---

<sup>381</sup> Notably ch. 5, §3.

<sup>382</sup> As per Chalmers (various but especially 1996 and 2006a) and Jackson 1998, 2004 respectively.

<sup>383</sup> As per Kaplan 1978, Stalnaker 1978 and (Evans 1979 as formalised by) Davies and

epistemology and metaphysics. Instead, I argue that sentences can express (at least) two propositions given various semantic, contextual, pragmatic and, importantly again, metaphysical assumptions. That is, given that what we are really interested in is the modal and epistemic natures of certain propositions qua assertions of circumstances (qua arrangements of objects and attributes), we should try to understand the natures of the relevant objects and attributes in advance of deciding the semantics.

Turning to (ii), most importantly, my account is entirely distinct from a two-dimensional approach in that I most definitely do not conflate metaphysical and rational (and especially not rational-qua-epistemic) necessities—as I very much outline in Chapter 4, §3. One of the key criticisms of two-dimensionalism<sup>384</sup> is that it commits just such a conflation of apriority (qua epistemic/conceptual necessity) and conceivability (qua epistemic/conceptual possibility). As I indicate, I am very much in accord with such criticisms; I make it a cornerstone of my position that metaphysical is not identical to rational necessity and that neither is coextensive with epistemic necessity. Indeed, I urge throughout that such a conflation is the key failing of the two-dimensional approach.<sup>385</sup> Again as I urge throughout (and responding to both (i) and (ii)), I argue from metaphysics and epistemology to semantics and not *vice versa*; given the nature of propositions and circumstances and the necessity of object-identity (that I argue for throughout), if  $a = a$ , then necessarily so—and this must be justified (if justifiable) on an *a priori* basis (and *mutatis mutandis* for contingent circumstances and *a posteriori* justification).<sup>386</sup> So, if my position is

---

Humberstone 1980 respectively.

<sup>384</sup> Offered in ch. 1 of this thesis and by Yablo 1999.

<sup>385</sup> In this way I concur with Tom Baldwin (2001), when he suggests that meta-semantic two-dimensionalism (as offered by Stalnaker 2001 for example) undermines the *a priori* in offering an interpretation of Kripke as ultimately closer to Quine. Going further than this, if apriority is analysed in terms of epistemic/conceptual necessity (as it is by the likes of Chalmers 2006a and Jackson 1998), and if it is further described as ‘primary’ necessity, then both apriority and necessity are in danger of reducing to conceptual necessity (analyticity); thereby very much suggesting an assimilation of Kripke and Quine, with clear, negative results for both apriority and necessity. Much of this thesis is an argument against this kind of assimilation, in that I argue that apriority should not be understood in terms of epistemic or conceptual necessity, and that the metaphysical is the ‘primary’ modality.

<sup>386</sup> Wong (1996, 2006) also distances himself from two-dimensionalism in attacking a position similar to that of Tichý 1983. Wong’s attack depends on a ‘sentence-relative’ notion of apriority, which to my mind questions an assumption central to the discussion; namely that propositions are the bearers of knowledge, justification and belief. The point being, if I sincerely assert ‘Snow is white’ and my German counterpart similarly says ‘Schnee ist weiß’, although we might

remotely ‘two-dimensional’, it perhaps ought to be labelled ‘*metaphysical, multi-dimensional modal semantics*’.

## 4.2 The possibility of modal error

I now turn to the last main objection to my position; that it has little or no ability to explain modal error. If the rational and metaphysical-modal are more or less coextensive, how can we ever go wrong in reasoning from the *a priori* to the necessary and from conceivability to possibility?

Let me begin by first identifying four kinds of modal reasoning:

(MR1) from apriority to necessity,

(MR2) from aposteriority to contingency,

(MR3) from conceivability to possibility

and

(MR4) from inconceivability to impossibility,

More or less corresponding to each of these, will be different, particular errors, depending on the general kind of modal error under discussion. I now discuss the three kinds of error my position suggests, moving from the most basic to the most complex.

The first kind of modal error is fairly straightforward; it is, quite simply, that of mistaken proof or reasoning, which I call ‘mistaken rational status’, for reasons that will become apparent. This kind of error is exemplified by all kinds of failure (from the mundane to the complex) in calculation or reasoning about an original proposition  $p$ , which results in a false conclusion about the rational and so modal status of  $p$ . A prime (and reasonably complex) example of this is Euclid’s ‘fifth postulate’,  $p_5/e_5$ , as introduced in Chapter 2. The point being,

---

*narrowly* believe different things, *widely* there is something we jointly believe; namely that a certain stuff (**snow**) has a certain property (**whiteness**). The further point then being, a proposition is justifiable *a priori* or *a posteriori* but not, strictly, both. So for example, although I might come to know the necessary proposition  $\lceil h = p \rceil$  via the empirical ‘ $h$  and  $p$  are co-referential’ along with several *a priori* and essentialist claims, in being the same (wide) proposition as  $\lceil h = h \rceil$ ,  $\lceil h = p \rceil$  is justifiable on an *a priori* basis; it is the *a priori* essentialist claims that are doing the real justificatory work.

those who thought that  $p_5$  was justified *a priori* and thereby necessarily true, failed to reason correctly about either the proof of  $p_5$  or the existence of alternative, possible and contradictory propositions such as  $l_5$  and  $r_5$ . Had they carried out such additional reasoning, these thinkers would have realised that  $p_5$  was (justifiably) not *a priori*, and would therefore have concluded correctly that  $p_5$  is not necessarily true. Of course there is a plethora of potential examples of similar failures in more simple, everyday mathematical reasoning, the basic formula being: (a) if  $p$  is an *a priori* justifiable, mathematical proposition, it is both true and necessarily the case; (b)  $p$  is justifiable *a priori*, so (c)  $p$  is necessarily true. The mistake then concerns premise (b), where the reasoner has the proof, reasoning and so rational-modal status of  $p$  wrong. With (b) so wrong, the conclusion (c) clearly does not follow. Similar particular errors with respect to (MR3) and (MR4) concern ‘conceivabilities’ that are in fact inconceivable and *vice versa*; for example (again drawing from mathematics) that  $\lceil 2 + 2 = 5 \rceil$  is conceivable (when it is in fact impossible and therefore inconceivable), or that  $\neg p_5$  is inconceivable (on the—false—assumption that  $p_5$  is necessarily true).<sup>387</sup> The latter of course, being a justifiable, *contingent* truth (with respect to actual space), is both conceivable and justifiable *a posteriori*.<sup>388</sup>

The second kind of modal error is very much related to the first; it can perhaps be viewed as a sub-set of ‘rational status’ error in that it relates to cases such as Goldbach’s conjecture (GC), whose rational status is very much apt for being mistaken, in virtue of their being unknowable or ‘undecidable’ propositions. For this reason, I call this kind of error ‘mistaken *non*-rational status’ or ‘the confusion of undecidable with decidable propositions’. Although perhaps slightly more complex than the previous kind of error, the discussion here is fairly brief, since I cover some of the same ground in previous chapters.

As I say, this kind of error derives from cases such as (GC) (and to a lesser

---

<sup>387</sup> I go into more detail on *inconceivability* and *non-conceivability* (and relatedly, Goldbach’s conjecture) separately, below.

<sup>388</sup> Particular cases of (MR2)-related, ‘rational status’ error are perhaps harder to come by (and overlap with what I say on the third kind of error, below). In short, I assume that there are no necessary *a posteriori* (nor contingent *a priori*) propositions and so no clear, related counter-examples to (MR2) (and (MR1)). Moreover, simple, (MR2)-related cases will be less prevalent since we are generally reasonably good at knowing whether propositions require *a posteriori* justification, whereas the *a priori* is, quite simply, more difficult. I hope to clarify all of this below.

extent (CGC)), where there is a clear, metaphysical-modal status but no such clear, rational-modal status—I am assuming, as before, that (GC)/(CGC) are necessarily/contingently true but unknowable. Given such an assumption, neither (GC) nor (CGC) could be considered even potential counter-examples to (MR1) and (MR2) (given their unknowability and so *non-apriority/aposteriority*); they are only relevant to the (MR3) and (MR4) modes of reasoning. Beginning with (MR4), as this is perhaps the simplest case, let us see which, if any of (GC), (CGC) and their negations are relevant, potential counter-examples. Now it might be argued that since all of (GC), (CGC) and their negations are unknowable, they are in some sense ‘inconceivable’; (GC), (CGC) and  $\neg$ (CGC) then being metaphysically possible, they would then invalidate (MR4). Of course, given what I say above and in the previous chapter, this must only be taken in the loosest sense—strictly, since the relevant propositions are unknowable, they are *non-conceivable* rather than inconceivable; such propositions are, with respect to rational (im)possibility, ‘undecidable’. That said, perhaps it is not that clear how often this particular case of the general kind of error would arise; it is highly arguable that no-one would really insist that (GC) and the like were *genuinely* inconceivable qua *a priori* impossible, given, for example, (GC)’s non-apriority, and both (GC) and (CGC)’s clear, modal status as metaphysically possible. That is, it is fairly clear that the relevant sense of ‘inconceivable’ here, is something akin to ‘not imaginably possible’.

Moving on to (MR3), a counter-example here needs to be a proposition that is conceivable but impossible. Given the foregoing assumptions, it is clear that the only relevant kind of candidate (and perhaps more strongly so than with (MR4)) is going to be a proposition akin to the negation of (GC). The point being,  $\neg$ (GC) is by assumption necessarily false (or impossible) and, perhaps, ‘conceivable’. Having said this of course, given that (GC) is unknowable,  $\neg$ (GC) is only ‘conceivable’ in the very weakest, epistemic sense. Strictly, if (GC) is unknowable, so is its negation; hence, I claim, both propositions are neither conceivable nor inconceivable—both propositions are rationally undecidable, or ‘open possibilities’.<sup>389</sup> Moreover, and as I stress several times in the discussion of (GC) qua unknowable metaphysical necessity, since it is just not

---

<sup>389</sup> On this point I am fairly close to Yablo 1993, pp. 31-2.

possible to entertain the genuine possibility of (GC)'s falsehood;  $\neg(\text{GC})$  qua metaphysically impossible is also rationally impossible or inconceivable. All of this being the case,  $\neg(\text{GC})$  is not a genuine counter-example to the (MR3) form of reasoning. The only potential modal errors in the region consist in (i) confusing an undecidable proposition, such as  $\neg(\text{GC})$ , with a decidable one, thereby resulting in an (MR3)-related error, and, less likely perhaps, (ii) reading various undecidables such as (GC), (CGC) and  $\neg(\text{CGC})$ , as inconceivable, thereby committing an (MR4)-related error. Hence my description of this kind of modal error as 'mistaken non-rational status' or 'the confusion of undecidable with decidable propositions'.

I now turn to the third and most complex kind of modal error, 'mistaken rational-metaphysical status', which I claim results in 'the confusion of epistemic with rational modality'. As I go on to explain, this kind of error is effectively based on the conflation of original sentences with two (or more) additional (narrow and wide) propositions; it is therefore perhaps best described in terms of 'the confusion of 'sentential' with narrow and wide (rational and metaphysical) modalities'—hence the shorter 'mistaken rational-metaphysical status' description. Examples of this kind of error are best exemplified by alleged contingent *a priori* and necessary *a posteriori* propositions (and their negations). Now since I deny, strictly, the existence of the contingent *a priori* and necessary *a posteriori*, my explanation of this kind of error will differ (in detail, but perhaps not in spirit) from the standard account. Before setting out those details then, let me give a summary of the standard position.

The standard, Kripkean account would have it that certain *a priori* propositions in fact assert contingent circumstances and certain *a posteriori* propositions assert necessary circumstances; for alleged, potential example,

(S) [stick *s* is one metre long at  $t_0$ ]

and

(*e*`) [I exist at  $t_0$ ]; [for the contingent *a priori*]

(1a)  $\lceil e = s \rceil$

and

(K1) if Aristotle exists, then Aristotle is a person.

[for the necessary *a posteriori*]

The point being, propositions such as (S) and ( $e''$ ) are allegedly counter-examples to (CT1\*\*) and (CT4\*\*), and so to the (MR1) form of reasoning. Following on from this, but as is often overlooked in the literature, on the assumption that the likes of (S) and ( $e''$ ) are justifiable *a priori*, presumably their negations would be justifiably false on an *a priori* basis; i.e. strictly, inconceivable on the present and on most accounts. Now, since the original propositions (S) and ( $e''$ ) are (allegedly) *a priori* but *contingently true*, the relevant negations would then be contingently false—i.e. not impossible. So, the negations would be metaphysically possible but inconceivable, thereby negating (INC\*\*) and (POS\*\*), and, especially now, invalidating the (MR4) form of reasoning.

Similarly, the traditional view of the likes of (1a) and (K1) is that they are, qua necessary *a posteriori* propositions, counter-examples to (CT2\*\*) and (CT3\*\*), as well as to the (MR2) form of reasoning. Moreover (as before), their negations ought not to be ruled out as impossible on an *a priori* basis; the negations ought to be 'conceivable' (on most accounts) even if they are metaphysically necessarily false (i.e. metaphysically impossible). So, the negations of (1a) and (K1) allegedly rule out (CON\*\*), (IMP\*\*) and especially now (MR3).

To summarise, if genuine, the contingent *a priori* and necessary *a posteriori* provide a clear, general account of modal error; contingent *a priori* propositions and their negations explain failures in (MR1) and (MR4) modal reasoning; necessary *a posteriori* propositions and their negations explain failures in (MR2) and (MR3) reasoning. In failing to note such special cases of *a priori* and *a posteriori* propositions, we can reach incorrect modal conclusions, with wide-ranging and clear, philosophical implications; for (alleged, potential)

example,  $\lceil I \text{ exist at } t_0 \rceil$  is an *a priori* but not a necessary truth (its negation then being ‘inconceivable’ but ‘possible?’), and  $\lceil e = s \rceil$  is an (allegedly) *a posteriori* but not contingent truth (its negation then being ‘conceivable’ but ‘impossible’).

As indicated above, since I dispute both the contingent *a priori* and the necessary *a posteriori*, I need to deal with such cases as are thrown up by the various, relevant discussions. By way of meeting this requirement, first let me say that Chapters 3 and 5 are an extended argument against the contingent *a priori* and necessary *a posteriori* respectively; if and where successful, these stand as rejections of such propositions as clear counter-examples to the (MR1) and (MR2) forms of reasoning. So far then, the only relevant, potential error in these kinds of reasoning is similar to that of the first kind discussed above but with the additional confusion in metaphysical-modal status; hence ‘mistaken rational-modal status’. That said, the alleged contingent *a priori* and necessary *a posteriori* examples do provide an interesting lesson for the (MR4) and (MR3) forms of reasoning; just perhaps not the apparent lesson I describe as the standard account, above. Let me now spell out what I take that lesson to be.

As I hint throughout, there is something about the negations of alleged, contingent *a priori* and necessary *a posteriori* propositions that, despite not invalidating (MR4) and (MR3), is instructive both in terms of providing examples of particular modal errors and elucidating the general form of the kind of error under discussion. Beginning with the contingent *a priori*, if  $p$  ( $\lceil I \text{ exist at } t_0 \rceil$  or  $(e'')$  for alleged example) is genuinely justifiable on an *a priori* basis but asserts a contingently obtaining circumstance, its negation ( $\lceil I \text{ do not exist at } t_0 \rceil$ ) ought to be inconceivable but only contingently false—thereby invalidating (MR4). As I argue in Chapter 3 however, it is very difficult to see how this pair of properties could be had by a single proposition/circumstance; if I do exist at  $t_0$  but might not have done, then it is entirely possible and conceivable that I might not have existed at  $t_0$ ; if on the other hand it is necessarily the case that I exist at  $t_0$  in virtue of uttering or thinking  $(e'')$ , then  $\neg(e'')$  is both impossible and so inconceivable. So, the ‘contingent *a priori* sentence’, ‘I exist’, expresses a wide, contingent but *a posteriori*, and a narrow, *a priori* but necessary (conditional) proposition. There is a particular modal error in the region of (MR4), but it does not derive from  $\neg(e'')$ ; rather it arises from

the conflation of the inconceivability of the negation of the narrow (necessary, *a priori*) proposition, with the possibility of the negation of the wide (contingent, *a posteriori*) proposition.

Similarly, if  $p$  ( $\lceil e = s \rceil$  for potential example) is *a posteriori* but necessary, its negation ought to be conceivable but impossible—invalidating (MR3). As I argue throughout Chapter 5 (and Chapter 6) however, if a (knowable, justifiable)  $p$  asserts a metaphysically impossible circumstance, strictly  $p$  cannot be conceivable; if  $e = s$ , then qua necessarily identical object(s), it is impossible and inconceivable that  $e$  is not self-identical (or not the same object as  $s$ ); it is just not possible to entertain this set of circumstances (as I suggest with respect to  $\neg(\text{GC})$  both above and several times earlier in the thesis). If on the other hand an object named ‘ $e$ ’ is identical to an object named ‘ $s$ ’, it is entirely possible and conceivable that ‘ $e$ ’ is not identical to ‘ $s$ ’. As with the contingent *a priori* then, there is a particular modal error in the region of (MR4) but this does not derive from the negation of the alleged, necessary *a posteriori* proposition; rather it consists in the conflation of the conceivability of the negation of the narrow (contingent, *a posteriori*) proposition, with the impossibility of the negation of the wide (necessary *a priori*) proposition.

Summarising my position on this third kind of error, we have four particular cases of erroneous reasoning, which although they do not undermine (MR1) to (MR4), do suggest a general kind of modal error. This is what I call ‘mistaken rational-metaphysical status’, or perhaps better, since this rests on a conflation of two propositions for one sentence, the ‘confusion of ‘sentential’ with narrow and wide (rational and metaphysical) modalities’. The ‘contingent *a priori*’ and ‘necessary *a posteriori*’ themselves provide neither examples nor a general account of modal error; instead it is the confusion of narrow and wide modalities that leads to the conflation of two propositions for one, original sentence, which does the trick. Moreover, that trick ultimately results in the confusion of rational and epistemic modality. The point being, with respect to the contingent *a priori* and its negation, ‘apriority’ and ‘inconceivability’ consist in *epistemic* necessity and impossibility respectively; and regarding the necessary *a posteriori* and its negation, ‘aposteriority’ and ‘conceivability’ consist in *epistemic* contingency and possibility. Now of course, if we take

apriority, aposteriority and (in)conceivability to be *epistemic* notions (qua grounded in *epistemic* modality), then propositions can be '*a priori*' but contingent, '*a posteriori*' but necessary, and 'conceivable' but impossible (and contrapositively); if we are talking of genuine, *rational* modality however, apriority entails necessity and ditto aposteriority-contingency and (in)conceivability-(im)possibility. That is, (MR1) to (MR4) stand and modal error is located in confusion of the epistemic, rational and metaphysical-modal status of relevant propositions.

In terms of positive lessons to take from the foregoing, I round off this section by reconsidering briefly the issue of corrigibility—I begin with the first and third kinds of modal error, as the second is slightly more complex. With respect to the first kind of error ('rational status'), *a priori*, *a posteriori* and (in)conceivability-based reasoning is, of course, corrigible; as per Riemannian and Lobachevskian responses to the '*a priori*' and 'necessary' *e*<sub>5</sub> (as discussed in Chapter 2). That said, we are, qua human beings, fallible, so it is a plain fact of the matter that we will continue to make mistakes in reasoning such that we will conclude that '*a priori*' propositions are 'necessarily' the case (and so on), when in fact they are not. Concerning 'rational-metaphysical status' (the third kind of error), exactly similar remarks apply, with the additional problem of the complexity of the reasoning required to disentangle allegedly contingent *a priori* (or necessary *a posteriori*) sentences into relevantly narrow/wide *a priori* and necessary or *a posteriori* and contingent propositions.

Regarding 'mistaken *non-rational* status' (the second kind of modal error), to some extent similar points apply but with perhaps more emphasis given to the problematic issues arising from the impossibility of correction in cases of absolutely unknowable propositions. The point being, if *p* is unknown but ultimately justifiable, then of course, *p* is justifiable on an *a priori* or *a posteriori* basis and  $(\neg)p$  is (in)conceivable (as appropriate), but it is an open question as to whether we will ever prove or correctly conceive of the relevant propositions. That said, if *p* is essentially unknowable then, as I argue above, *p* is not at all justifiable on an *a priori* or *a posteriori* basis, and *p* is neither conceivable nor inconceivable. In such a situation of course, there is no chance whatsoever of modal correction; no chance of establishing the rational and

metaphysical-modal status of the relevant  $p$ —even if we can correct the fallacious reasoning from ‘apriority’, ‘conceivability’ (and so on) to necessity, possibility (and so on). The rational status of  $p$  here is as unknowable as the proof, so questions that involve propositions such as (GC) (qua unknowable  $p$ ) are themselves going to be strictly undecidable or open.

In the final analysis then, my position on modal error, is that current, standard (and I include two-dimensional) understandings of rational notions, such as apriority and conceivability are very much cashed out in terms of *epistemic* modality (e.g. ‘apriority’ is epistemic necessity-for-all-I-know; ‘conceivability’ is something like ‘imaginability’—*viz* qualitatively, or epistemically identical situations). So where something is deemed epistemically necessary/possible and so ‘*a priori*’/‘conceivable’, this is only in the weakest, *epistemic* sense.<sup>390</sup> This kind of ‘apriority’ and ‘conceivability’ (‘weak apriority’ or ‘weak conceivability’) is an excellent guide to ‘epistemic modality’; but not to any genuine kind of genuine apriority or conceivability qua *rational* necessity and possibility; and, certainly not therefore to any real, metaphysical modality. The present account is that ‘strong’ conceivability should be understood in terms of *a priori* or rational possibility, with apriority itself then being understood in terms of rational necessity; rational modality then being a much more ‘objective’ modality, grounded, ultimately in the metaphysical itself. With this understanding in place,  $p$  is *a priori*/conceivable only if  $p$  is metaphysically necessary/possible. On this understanding then, the relevant kind of apriority entails real, metaphysical necessity and genuine conceivability is a very good guide to real, metaphysical possibility.

---

<sup>390</sup> I take Yablo’s (1993, p. 29) account (of the conceivability of  $p$  in terms of  $s$ ’s ability to imagine a world  $s$  takes to verify  $p$ ) to be a similarly and quite deeply, epistemic account. Clearly, Chalmers’s (2002) account of conceivability and possibility is both deeply epistemic and two-dimensional.

## Bibliography

- Adams, R. M. 1974. 'Theories of actuality'. *Noûs* 8: 211-31. Reprinted in M. J. Loux, ed. 1979.
- Aristotle. *Categories* and *Posterior Analytics*. In J. L. Ackrill, ed. *A New Aristotle Reader*. Oxford: Clarendon Press. 1987.
- Aristotle. *Prior Analytics*. Trans. R. Smith. Indianapolis: Hackett Publishing. 1989.
- Baldwin, T. 2001. 'On Considering a Possible World as Actual'. *Aristotelian Society Supplementary Volume* 75: 157-74.
- Barcan Marcus, R. 1961. 'Modalities and Intensional Languages'. *Synthese* 134: 303-322.
- Bealer, G. 1987. 'The Philosophical Limits of Scientific Essentialism'. In J. Tomberlin, ed. *Philosophical Perspectives 1, Metaphysics*. Atascadero, CA: Ridgeview Press.
- Bealer, G. 1993. 'A solution to Frege's puzzle'. In J. Tomberlin, ed. *Philosophical Perspectives 7, Language and Logic*. Atascadero, CA: Ridgeview Press.
- Bealer, G. 1996a. 'On the possibility of philosophical knowledge'. In J. Tomberlin, ed. *Philosophical Perspectives 10, Metaphysics*. Atascadero, CA: Ridgeview Press: 1-33.
- Bealer, G. 1996b. 'A priori knowledge and the scope of philosophy'. *Philosophical Studies* 81: 121-42.
- Bealer, G. 1998. 'Analyticity'. *Routledge Encyclopedia of Philosophy*, Vol. 1. London: Routledge and Kegan Paul.
- Bealer, G. 1999. 'A theory of the *a priori*'. In J. Tomberlin, ed. *Philosophical Perspectives 13, Epistemology*. Atascadero, CA: Ridgeview Press.
- Bealer, G. 2002. 'Modal epistemology and the rationalist renaissance'. In T. S. Gendler and J. Hawthorne, eds. 2002.
- Bealer, G. 2007. 'A definition of necessity'. In J. Tomberlin, ed. *Philosophical Perspectives 20, Metaphysics*. Atascadero, CA: Ridgeview Press.
- Benacerraf, P. 1973. 'Mathematical Truth'. *The Journal of Philosophy* 19: 661-79.
- Bird, A. 2008. 'Lowe on *a posteriori* essentialism'. *Analysis* 68, 4: 336-44.
- Boghossian, P. 1996. 'Analyticity Reconsidered'. *Noûs* 30, 3: 360-391.
- Boghossian, P. 1997. 'Analyticity'. In B. Hale and C. Wright, eds. 1997.
- Boghossian, P. and Peacocke, C. (eds.) 2000. *New Essays on the A Priori*. Oxford: Oxford University Press.
- Bonjour, L. 1998. *In Defense of Pure Reason*. Cambridge: Cambridge University Press.
- Bonjour, L. 2005. 'Is there *a priori* knowledge?', 'Reply to Devitt' and 'Last Rejoinder'. In E. Sosa and M. Steup, eds. 2005.
- Bostock, D. 1988. 'Necessary truth and *a priori* truth'. *Mind* 97, 387: 343-79.
- Braddon-Mitchell, D. 2004. 'Masters of our meanings'. *Philosophical Studies* 118: 133-52.
- Braun, D. 1998. 'Understanding belief reports'. *Philosophical Review* 107, 4: 555-95.
- Braun, D. 2006. 'Illogical, But Rational'. *Noûs* 40, 1: 376-379.

- Bringsjord, S. 1985. 'Are there set theoretic possible worlds?' *Analysis* 45, 1: 64.
- Brody, B. 1980. *Identity and Essence*. Princeton: Princeton University Press.
- Bueno, O. and Shalkowski, S. 2000. 'A plea for a modal realist epistemology'. *Acta Analytica* 15, 1: 175-93.
- Burge, T. 1973. 'Reference and Proper Names'. *The Journal of Philosophy* 70: 425-439.
- Burge, T. 1977. 'Belief *De Re*'. *The Journal of Philosophy* 74, 6: 338-362.
- Butchvarov, P. 1970. *The Concept of Knowledge*. Evanston, Ill: Northwestern University Press.
- Casullo, A. 1977. 'Kripke on the *A Priori* and the Necessary'. *Analysis* 37, 4: 152-159.
- Casullo, A. 2003. *A Priori Justification*. Oxford: Oxford University Press.
- Chalmers, D. 1996. *The Conscious Mind: In Search of a Fundamental Theory*. Oxford: Oxford University Press.
- Chalmers, D. 2002. 'Does Conceivability Entail possibility?' In T. S. Gendler and J. Hawthorne, eds. 2002. *Conceivability and Possibility*. Oxford University Press.
- Chalmers, D. 2006a. 'The Foundations of Two-Dimensional Semantics'. In M. Garcia-Carpintero and J. Macia, eds. 2006.
- Chalmers, D. 2006b. 'Two-Dimensional Semantics'. In E. Lepore and B. Smith, eds. *The Oxford Handbook of Philosophy of Language*. Oxford: Clarendon Press. 2006.
- Chalmers, D. Manuscript. 'Scott Soames' Two-Dimensionalism'. <<http://consc.net/papers/soames2d.pdf>> Accessed 9<sup>th</sup> June 2009.
- Chandler, H. 1975. 'Rigid designation'. *The Journal of Philosophy* 72: 363-369.
- Chellas, B. 1980. *Modal Logic: An Introduction*. Cambridge: Cambridge University Press.
- Chihara, C. 1998. *The Worlds of Possibility: Modal Realism and the Semantics of Modal Logic*. Oxford: Clarendon Press.
- Correia, F. 2007. 'Finean Essence and Priorean Modality'. *Dialectica* 61, 1: 63-84.
- Crimmins, M. 1992. *Talk about Beliefs*. Cambridge, MA: MIT Press.
- Crossley, J. N. and Humberstone, L. 1977. 'The Logic of 'Actually''. *Reports on Mathematical Logic* 8: 11-29.
- Davies, M. 1981. *Meaning, Quantification, Necessity*. London: Routledge.
- Davies, M. 2004. 'Reference, Contingency, and the Two-Dimensional Framework'. *Philosophical Studies* 118: 83-131.
- Davies, M. and Humberstone, L. 1980. 'Two Notions of Necessity'. *Philosophical Studies* 38: 1-30.
- DePaul, M. and Ramsey, W. (eds.) 1998. *Rethinking Intuition*. Lanham, Md: Rowman and Littlefield.
- DeRose, K. 1991. 'Epistemic Possibilities'. *Philosophical Review* 100: 581-605.
- Descartes, R. 1642. *Meditations*. In E. Anscombe and P. T. Geach, eds. *Descartes: Philosophical Writings*. London: Thomas Nelson. 1954.
- Devitt, M. 2005. 'There is no *a priori*' and 'Reply to Bonjour'. In E. Sosa and M. Steup, eds. 2005.
- Divers, J. 1999. 'A Modal Fictionalist Result'. *Noûs* 33, 3: 317-346.
- Divers, J. 2002. *Possible Worlds*. London: Routledge.
- Divers, J. 2004. 'Agnosticism about other possible worlds: a new antirealist programme in modality'. *Philosophy and Phenomenological Research* 69, 3.

- Divers, J. 2006. 'Possible-worlds semantics without possible worlds'. *Mind* 115, 458: 187-225.
- Donnellan, K. 1966. 'Reference and definite descriptions'. *Philosophical Review* 75: 281-304.
- Donnellan, K. 1977. 'The Contingent A Priori and Rigid Designators'. *Midwest Studies in Philosophy* 2: 12-27.
- Dummett, M. 1973. *Frege: Philosophy of Language*. London: Duckworth.
- Dummett, M. 1978. *Truth and Other Enigmas*. London: Duckworth.
- Dummett, M. 1981. *The Interpretation of Frege's Philosophy*. London: Duckworth.
- Dummett, M. 1991. *Frege and Other Philosophers*. Oxford: Oxford University Press.
- Eddington, A. S. 1919. *Report on the Relativity Theory of Gravitation*. London: The Physical Society of London, Fleetway Press.
- Einstein, A. 1916. 'The Foundation of the General Theory of Relativity'. In Lorentz, Einstein, Minkowski and Weyl, eds. *The Principle of Relativity*. New York: Dover. 1952.
- Elugardo, R. 2002. 'The Predicate View of Proper Names.' In G. Preyer and G. Peter, eds. *Logical Form and Language*. Oxford: Oxford University Press.
- Evans, G. 1973. 'The Causal Theory of Names'. In his *Collected Papers*. Oxford: Oxford University Press. 1985.
- Evans, G. 1979. 'Reference and contingency'. *The Monist* 62:161-89.
- Evans, G. 1982. *The Varieties of Reference*. Oxford: Oxford University Press.
- Fine, K. 1994. 'Essence and modality'. In J. Tomberlin, ed. *Philosophical Perspectives 8: Logic and Language*. Atascadero, CA: Ridgeview Publishing Co.
- Fine, K. 1995a. 'Senses of essence'. In W. Sinnott-Armstrong, ed. *Modality, Morality and Belief: Essays in Honor of Ruth Barcan Marcus*. Cambridge: Cambridge University Press.
- Fine, K. 1995b. 'The logic of essence'. *Journal of Philosophical Logic* 24: 241-273.
- Fine, K. 2002. 'The varieties of necessity'. In T. S. Gendler and J. Hawthorne, eds. 2002.
- Fine, K. 2003. 'The problem of possibilia'. In D. Zimmerman, ed. *Handbook of Metaphysics*. Oxford: Oxford University Press. (Page references to version in Fine 2005.)
- Fine, K. 2005. *Modality and Tense*. Oxford: Oxford University Press.
- Fine, K. 2007. 'Response to Fabrice Correia'. *Dialectica* 61, 1: 85-8.
- Fiocco, M. 2007. 'Conceivability and Epistemic Possibility'. *Erkenntnis* 67, 3: 387-399.
- Fitch, G. 2004. *Saul Kripke*. Chesham: Acumen.
- Forbes, G. 1985. *The Metaphysics of Modality*. Oxford: Oxford University Press.
- Forbes, G. 1989. *The Languages of Possibility*. Oxford: Blackwell.
- Forbes, G. 1990. 'The indispensability of *sinn*'. *Philosophical Review* 99: 535-63.
- Forrest, P. 1986. 'Ways worlds could be'. *Australian Journal of Philosophy* 64, 1: 15-24.
- Frege, G. 1884. *The Foundations of Arithmetic*. 2nd revised ed. London: Blackwell.
- Frege, G. 1892. 'On Sense and Meaning [Reference]'. In P. T. Geach and M. Black, eds. *Translations from the Works of Gottlob Frege*. Oxford: Blackwell. 1952.
- Frege, G. 1956. 'The thought: a logical inquiry'. *Mind* 65, 259: 289-311.

- Garcia-Carpintero, M. and Macia, J. (eds.) 2006. *Two-Dimensional Semantics: Foundations and Applications*. Oxford: Clarendon Press.
- Garson, J. 2006. *Modal Logic for Philosophers*. Cambridge: Cambridge University Press.
- Garson, J. 2008. 'Modal Logic'. *The Stanford Encyclopedia of Philosophy (Spring 2009 Edition)*. E. N. Zalta, ed. <<http://plato.stanford.edu/archives/spr2009/entries/logic-modal/>>.
- Geirsson, H. 1991. 'The Contingent A Priori: Kripke's Two Types of Example'. *Australasian Journal of Philosophy* 69, 2: 195-205.
- Geirsson, H. 2005. 'Conceivability and defeasible modal justification'. *Philosophical Studies* 122: 279-304.
- Gendler, T. S. and Hawthorne, J. (eds.) 2002. *Conceivability and Possibility*. Oxford: Oxford University Press.
- Gibbard, A. 1975. 'Contingent identity'. *Journal of Philosophical Logic* 4: 187-221.
- Gödel, K. 1931. 'Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme, I'. *Monatshefte für Mathematik und Physik* 38: 173-198. Reprinted and translated in Gödel 1986: 144-195.
- Gödel, K. 1986. *Collected Works I: Publications 1929-1936*. In S. Feferman, S. Kleene, G. Moore, R. Solovay and J. van Heijenoort, eds. Oxford: Oxford University Press.
- Goldman, A. 2007. 'Philosophical Intuitions: Their Target, Their Source, and Their Epistemic Status'. *Grazer Philosophische Studien* 74: 1-25.
- Gorman, M. 2005. 'The Essential and the Accidental'. *Ratio* 18: 276-289.
- Grice, P. and Strawson, P. 1956. 'In Defense of a Dogma'. *Philosophical Review* 65, 2: 141-58.
- Grim, P. 1984. 'There is no set of all truths'. *Analysis* 44, 4: 206-8.
- Grim, P. 1986. 'On sets and worlds: a reply to Menzel'. *Analysis* 46, 2: 186-91.
- Hacking, I. 1967. 'Possibility'. *Philosophical Review*. 76: 143-68.
- Hacking, I. 1975. 'All Kinds of Possibility'. *Philosophical Review*. 84: 321-37.
- Hale, B. 1996. 'Absolute necessities'. *Philosophical Perspectives* 10, *Metaphysics*. Atascadero, CA: Ridgeview Press.
- Hale, B. and Wright, C. (eds.) 1997. *A Companion to the Philosophy of Language*. Oxford: Blackwell.
- Hawthorne, J. 2002. 'Deeply Contingent A Priori Knowledge'. *Philosophy and Phenomenological Research* 65, 2.
- Heath, T. L. 1956. *Euclid: The Thirteen Books of The Elements*. 3 Volumes. New York: Dover.
- Hirsch, E. 1986. 'Metaphysical Necessity and Conceptual Truth'. *Midwest Studies in Philosophy* 11: 243-56.
- Horowitz, T. and Massey, G. (eds.) 1991. *Thought Experiments in Science and Philosophy*. Savage, Md: Rowman and Littlefield.
- Hossack, K. 2007. 'Actuality and modal rationalism'. *Proceedings of the Aristotelian Society* 107, 3: 433-56.
- Hughes, C. 2004. *Kripke: Names, Necessity and Identity*. Oxford: Clarendon.
- Hughes, G. E. and Cresswell, M. J. 1968. *An Introduction to Modal Logic*. London: Methuen.
- Hughes, G. E. and Cresswell, M. J. 1996. *A New Introduction to Modal Logic*. London: Routledge.

- Jackson, F. 1994. 'Armchair Metaphysics'. In M. Michael and J. O'Leary-Hawthorne, eds. *Philosophy in Mind*. Dordrecht: Kluwer.
- Jackson, F. 1998. *From Metaphysics to Ethics: A Defense of Conceptual Analysis*. Oxford: Oxford University Press.
- Jackson, F. 2004. 'Why We Need A-Intensions'. *Philosophical Studies* 118: 257-277.
- Jeshion, R. 2001. 'Donnellan on Neptune'. *Philosophy and Phenomenological Research* 58, 1: 111-35.
- Jeshion, R. 2002. 'Acquaintanceless *De Re* Belief'. In Campbell, O'Rourke and Shier, eds. *Meaning and Truth: Investigations in Philosophical Semantics*. New York: Seven Bridges Press.
- Jubien, M. 1988. 'Problems with possible worlds'. In D. F. Austin, ed. *Philosophical Analysis*. Dordrecht: Kluwer, pp. 299-322.
- Kalhat, J. 2008. 'Primitive Modality and Possible Worlds'. *Philosophy* 83: 497-517.
- Kant, I. 1781. *The Critique of Pure Reason*. V. Politis, ed. London: Everyman. 1993.
- Kaplan, D. 1969. 'Quantifying In'. *Synthese* 19, 1-2:178-214.
- Kaplan, D. 1978. 'Dthat'. In P. Cole, ed. *Syntax and Semantics: Pragmatics. Vol. 9*. New York: Academic Press.
- Kaplan, D. 1989. 'Demonstratives' and 'Afterthoughts'. In J. Almog, J. Perry and H. Wettstein, eds. *Themes from Kaplan*. Oxford: Oxford University Press.
- Katz, J. 1998. *The Metaphysics of Meaning*. Oxford: Oxford University Press.
- Kitcher, P. 1980a. 'A Priori Knowledge'. *The Philosophical Review* 89, 1: 3-23.
- Kitcher, P. 1980b. 'Apriority and necessity'. *Australasian Journal of Philosophy* 58, 2: 89-101.
- Kripke, S. 1971. 'Identity and Necessity'. In M. K. Munitz, ed. *Identity and Individuation*. New York: New York University Press, pp. 135-64.
- Kripke, S. 1972. 'Naming and Necessity'. In D. Davidson and G. Harman, eds. *Semantics of Natural Language*. Dordrecht: Reidel, pp. 253-355.
- Kripke, S. 1977. 'Speaker's Reference and Semantic Reference.' *Midwest Studies in Philosophy* 2: 255-76.
- Kripke, S. 1979. 'A Puzzle About Belief'. In A. Margalit, ed. *Meaning and Use*. Dordrecht: Reidel, pp. 239-83.
- Kripke, S. 1980. *Naming and Necessity*. Oxford: Blackwell.
- Kroon, F. 1987. 'Causal Descriptivism'. *Australasian Journal of Philosophy* 65: 1-17.
- Kroon, F. 2004. 'A-Intensions and Communication'. *Philosophical Studies* 118: 279-298.
- Lewis, D. 1968. 'Counterpart Theory and Quantified Modal Logic'. *Journal of Philosophy* 65, 5: 113-126. Reprinted in Loux 1979.
- Lewis, D. 1973. 'Counterfactuals and Comparative Possibility'. *Journal of Philosophical Logic* 2: 418-46.
- Lewis, D. 1986. *On the Plurality of Worlds*. Oxford: Blackwell.
- Lobachevsky, N. I. 1840. 'Geometrical investigations for the theory of parallel lines'. In R. Bonola, ed. *Non-Euclidean Geometry: A critical and historical study of its development*. Carlsaw, H.S. (trans.) New York: Dover. 1955.
- Loux, M. J. (ed) 1979. *The Possible and the Actual*. Ithaca: Cornell University Press.

- Lowe, E. J. 1982. 'On the alleged necessity of true identity statements'. *Mind* 91: 579-84.
- Lowe, E. J. 1998. *The Possibility of Metaphysics: Substance, Identity and Time*. Oxford: Clarendon Press.
- Lowe, E. J. 2002. *A Survey of Metaphysics*. Oxford: Clarendon Press.
- Lowe, E. J. 2005. 'Identity, vagueness and modality'. In J. L. Bermudez, ed. *Thought, Language and Experience: Themes from the Philosophy of Gareth Evans*. Oxford: Oxford University Press.
- Lowe, E. J. 2006. *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*. Oxford: Clarendon Press.
- Lowe, E. J. 2007a. 'Does the descriptivist/anti-descriptivist debate have any philosophical significance?' *Philosophical Books* 48, 1: 27-33.
- Lowe, E. J. 2007b. 'A problem for *a posteriori* essentialism concerning natural kinds'. *Analysis* 67, 296: 286-292.
- Lowe, E. J. 2008a. 'Reply to Bird on *a posteriori* essentialism'. *Analysis* 68, 4: 345-7.
- Lowe, E. J. 2008b. 'Two notions of being: essence and entity'. *Philosophy* 83: 23-48.
- Mackie, P. 2002. 'Deep contingency and necessary *a posteriori* truth'. *Analysis* 62, 3: 225-36.
- Mackie, P. 2002. *How things might have been: Individuals, Kind and Essential Properties*. Oxford: Clarendon.
- McDowell, J. 1977. 'On the Sense and Reference of a Proper Name'. *Mind* 86: 159-85.
- McFetridge, I. 1990. 'Logical necessity: Some issues'. In McFetridge, I. *Logical Necessity and other Essays*. Aristotelian Society Series, Vol. 11. J. Haldane and R. Scruton, eds. London: Longdunn Press. 1990.
- McGinn, C. 1981. 'Modal Reality'. In R. Healey, ed. *Reduction, Time and Reality*. Cambridge: Cambridge University Press.
- McGinn, C. 1999. 'A Priori and A Posteriori Knowledge' and 'Postscript...'. In McGinn, C. *Knowledge and Reality*. Oxford: Oxford University Press. 1999. (Main article originally published as 'A Priori and A Posteriori Knowledge'. *Proceedings of the Aristotelian Society* 76: pp. 195-208.)
- McKay, T. 1991. 'Representing *de re* beliefs'. *Linguistics and Philosophy* 14: 711-739.
- McKay, T. and Nelson, M. 2008. 'Propositional Attitude Reports'. *The Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*. E. N. Zalta, ed. <<http://plato.stanford.edu/archives/fall2008/entries/prop-attitude-reports/>>.
- McLeod, S. 2001. *Modality and Anti-Metaphysics*. Aldershot: Ashgate Publishing.
- McLeod, S. 2006. 'Why essentialism requires two senses of necessity'. *Ratio* 19, 1: 77-91.
- McLeod, S. 2008a. 'How to reconcile essence with contingent existence'. *Ratio* 21, 3: 314-28.
- McLeod, S. 2008b. 'Knowledge of Necessity: Logical Positivism and Kripkean Essentialism'. *Philosophy* 83: 179-91.
- McMichael, A. 1983. 'A problem for actualism about possible worlds'. *Philosophical Review* 92, 1: 49-66.
- Melia, J. 2003. *Modality*. Chesham: Acumen.

- Mellor, D. H. 1977. 'Natural Kinds'. In *Matters of Metaphysics*. Cambridge: Cambridge University Press, pp. 123-35.
- Mendelsohn, R. L. 1979. 'Rigid designation and informative identity statements'. *Midwest Studies In Philosophy* 4: 307-20.
- Menzel, C. 1986. 'On set theoretic possible worlds'. *Analysis* 46, 2: 68-72.
- Menzies, P. 1998. 'Possibility and conceivability: a response-dependent account of their connections'. *European Review of Philosophy* 3. Stanford, CA: CSLI.
- Michael, M. 1998. 'Tichý on Kripke on *a posteriori* necessities'. *Philosophical Studies* 92: 113-2.
- Nelson, M. 2002. 'Descriptivism defended'. *Noûs* 36, 3: 408-35.
- Oderberg, D. 2001. 'How to Win Essence Back from Essentialists'. *Philosophical Writings* 18: 27-45.
- Oderberg, D. 2007. *Real Essentialism*. London: Routledge.
- Peacocke, C. 1992. *A Study of Concepts*. Cambridge, MA: MIT Press.
- Peacocke, C. 2000. 'Explaining the *A Priori*: The Programme of Moderate Rationalism'. In P. Boghossian and C. Peacocke, eds. 2000.
- Perry, J. 1977 'The Problem of the Essential Indexical'. *Noûs* 13, 1: 3-21. Reprinted in Perry 1993.
- Perry, J. 1993. *The Problem of the Essential Indexical and Other Essays*. New York: Oxford University Press.
- Perry, J. and Crimmins, M. 1989. 'The prince and the phone booth: Reporting puzzling beliefs'. *Journal of Philosophy* 86, 12: 685-711. Reprinted in Perry 1993.
- Pettit, P. 2004. 'Descriptivism, Rigidified and Anchored'. *Philosophical Studies* 118: 323-38.
- Plantinga, A. 1974. *The Nature of Necessity*. Oxford: Clarendon.
- Pollock, J. 1974. *Knowledge and Justification*. Princeton: Princeton University Press.
- Priest, G. Routley, R. and Norman, J. (eds.) 1989. *Paraconsistent Logic: Essays on the Inconsistent*. München: Philosophia Verlag.
- Prior, A. N. 1955. *Formal Logic*. Oxford: Clarendon Press.
- Prior, A. N. and Fine, K. 1977. *Worlds, Times and Selves*. Cambridge, MA: University of Massachusetts Press.
- Pryor, J. 2006. 'Hyper-Reliability and Apriority'. *Proceedings of the Aristotelian Society* 106, 3: 327-44.
- Putnam, H. 1970. 'Is Semantics Possible?' *Metaphilosophy* 1: 189-201.
- Putnam, H. 1975. 'The Meaning of "Meaning"'. In K. Gunderson, ed. *Minnesota Studies in the Philosophy of Science* 7: 131-193. University of Minnesota Press.
- Putnam, H. 1978. 'There Is at Least One 'A Priori' Truth'. *Erkenntnis* 13: 153-170.
- Putnam, H. 1983. "'Two dogmas' revisited'. In *Realism and Reason: Philosophical Papers*, Vol. 3. Cambridge: Cambridge University Press.
- Putnam, H. 1990. 'Is water necessarily H<sub>2</sub>O?' In Putnam, H. *Realism with a Human Face*. London: Harvard University Press.
- Quine, W. v. O. 1951. 'Two dogmas of empiricism'. *Philosophical Review* 60, 1: 20-43.
- Quine, W. v. O. 1962. *Mathematical Logic*. New York: Harper and Row.
- Quine, W. v. O. 1963. *From a Logical Point of View*. Cambridge, MA: Harvard University Press.

- Recanati, F. 1993. *Direct Reference: From Language to Thought*. Oxford: Blackwell.
- Reimer, M. 2002. 'Ordinary Proper Names'. In G. Preyer and G. Peter, eds. *Logical Form and Language*. Oxford University Press.
- Reimer, M. 2004. 'Descriptively introduced names'. In Bezuidenhout and Reimer, eds. *Descriptions and Beyond*. Oxford: Oxford University Press.
- Rescher, N. 2005. *Epistemic Logic: A Survey of the Logic of Knowledge*. Pittsburgh: University of Pittsburgh Press.
- Rey, G. 1998. 'A Naturalistic A Priori'. *Philosophical Studies* 92: 25-43.
- Rey, G. 2003. 'The analytic/synthetic distinction'. *The Stanford Encyclopedia of Philosophy (Fall 2003 Edition)*. E. N. Zalta, ed. <<http://plato.stanford.edu/archives/fall2003/entries/analytic-synthetic/>>.
- Richard, M. 1990. *Propositional Attitudes: An Essay on Thoughts and how We Ascribe Them*. Cambridge: Cambridge University Press.
- Riemann, B. 1854. 'On the hypotheses that lie at the foundations of geometry'. In M. Spivak, ed. *A Comprehensive Introduction to Differential Geometry*, Vol. 2. Berkeley: Publish or Perish. 1990.
- Rosen, G. 1990. 'Modal Fictionalism'. *Mind* 99, 395: 327-354.
- Russell, Bertrand. 1902. 'Letter to Frege'. In J. van Heijenoort. *From Frege to Gödel*. Cambridge, MA: Harvard University Press. 1967, pp. 124-125.
- Russell, Bertrand. 1905. 'On denoting'. *Mind* 14, 56: 479-93.
- Russell, Bruce. 2008. 'A Priori Justification and Knowledge'. *The Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*, E. N. Zalta, ed. <<http://plato.stanford.edu/archives/fall2008/entries/apriori/>>.
- Salmon, N. 1981. *Reference and Essence*. Princeton: Princeton University Press.
- Salmon, N. 1986. *Frege's Puzzle*. Cambridge, MA: MIT Press.
- Salmon, N. 1987. 'How to Measure the Standard Metre'. *Proceedings of the Aristotelian Society* 88: 193-217.
- Salmon, N. 1989. 'The logic of what might have been'. *Philosophical Review* 98, 1: 3-34.
- Salmon, N. 1992. 'Reflections on reflexivity'. *Linguistics and Philosophy* 15: 53-63.
- Salmon, N. 2003. 'Naming Necessity and Beyond'. *Mind* 112, 447: 475-92.
- Salmon, N. 2006. 'The Resilience of Illogical Belief'. *Noûs* 40, 1: 369-75.
- Schiffer, S. 1978. 'The Basis of Reference'. *Erkenntnis* 13: 171-206.
- Schiffer, S. 2006. 'A problem for a direct reference theory of belief reports'. *Noûs* 40, 1: 361-8.
- Searle, J. 1983. *Intentionality: An Essay in the Philosophy of Mind*. Cambridge: Cambridge University Press.
- Shalkowski, S. 1994. 'The ontological ground of the alethic modality'. *Philosophical Review* 103, 4: 669-88.
- Shalkowski, S. 1997. 'Essentialism and Absolute Necessity'. *Acta Analytica* 12, 2 (19): 41-56.
- Shalkowski, S. 2004. 'Logic and absolute necessity'. *Journal of Philosophy* 101, 2: 55-82.
- Sklar, L. 1974. *Space, Time and Spacetime*. London: University of California Press.
- Soames, S. 2002. *Beyond Rigidity: The Unfinished Semantic Agenda of 'Naming and Necessity'*. New York: Oxford University Press.

- Soames, S. 2005. *Reference and Description: The Case Against Two-Dimensionalism*. Princeton, NJ: Princeton University Press.
- Soames, S. 2006a. 'Kripke, the Necessary *A posteriori* and the Two-Dimensionalist Heresy'. In M. Garcia-Carpintero and J. Macia, eds. 2006.
- Soames, S. 2006b. 'The Philosophical Significance of the Kripkean Necessary *A posteriori*'. *Philosophical Issues* 16, 1: 288-309.
- Soames, S. 2007a. 'Actuality'. *Proceedings of the Aristotelian Society Supplementary Volume* 81: 251-77.
- Soames, S. 2007b. 'The Substance and Significance of the Dispute over Two-Dimensionalism'. *Philosophical Books* 48, 1: 34-49.
- Sorensen, R. 1992. *Thought Experiments*. Oxford: Oxford University Press.
- Sosa, D. 1996. 'The import of the puzzle about belief'. *Philosophical Review* 105, 3: 373-402.
- Sosa, E. and Steup, M. (eds.) 2005. *Contemporary Debates in Epistemology*. Oxford: Blackwell.
- Stalnaker, R. 1976. 'Possible worlds'. *Noûs* 10. Reprinted in Stalnaker 2003.
- Stalnaker, R. 1978. 'Assertion'. In P. Cole, ed. *Syntax and Semantics* 9. New York: New York Academic Press: 315-32.
- Stalnaker, R. 1990. 'Narrow Content'. In C. A. Anderson and J. Owens, eds. *Propositional Attitudes: The Role of Content in Logic, Language and Mind*. Stanford: CSLI, pp. 131-146.
- Stalnaker, R. 1997. 'Reference and Necessity'. In B. Hale and C. Wright, eds. 1997. Reprinted in Stalnaker 2003.
- Stalnaker, R. 2001. 'On Considering a Possible World as Actual'. *Aristotelian Society Supplementary Volume* 75: 141-56. Reprinted in Stalnaker 2003.
- Stalnaker, R. 2002. 'What is it Like to be a Zombie?'. In T. S. Gendler and J. Hawthorne, eds. 2002. Reprinted in Stalnaker 2003.
- Stalnaker, R. 2003. *Ways a World Might Be: Metaphysical and Anti-Metaphysical Essays*. Oxford: Oxford University Press.
- Stalnaker, R. 2004. 'Assertion Revisited: on the Interpretation of Two-Dimensional Modal Semantics'. *Philosophical Studies* 118: 299-322.
- Stanley, J. 1997. 'Names and Rigid Designation'. In B. Hale and C. Wright, eds. 1997.
- Teller, P. 1972. 'Epistemic Possibility'. *Philosophia* 2: 303-30.
- Tichý, P. 1983. 'Kripke on necessity *a posteriori*'. *Philosophical Studies* 43: 225-41.
- Tidman, P. 1994. 'Conceivability as a test for possibility'. *American Philosophical Quarterly* 31, 4: 297-309.
- Torretti, R. 2008. 'Nineteenth Century Geometry'. *The Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*. E. N. Zalta, ed. <<http://plato.stanford.edu/archives/fall2008/entries/geometry-19th/>>.
- Vaidya, A. 2008. 'The epistemology of modality'. *The Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*. E. N. Zalta, ed. <<http://plato.stanford.edu/archives/fall2008/entries/modality-epistemology/>>.
- Van Cleve, J. 1983. 'Conceivability and the Cartesian Argument for Dualism'. *Pacific Philosophical Quarterly* 64: 34-45.
- Van Inwagen, P. 1985. 'Plantinga on trans-world identity'. In J. Tomberlin and P. van Inwagen, eds. *Alvin Plantinga*. Dordrecht: Reidel, pp. 101-20.
- Van Inwagen, P. 1997. 'Modal epistemology'. *Philosophical Studies* 92: 67-84.

- Warenski, L. 2009. 'Naturalism, fallibilism and the a priori'. *Philosophical Studies* 142: 403–426.
- White, A. R. 1975. *Modal Thinking*. Oxford: Oxford University Press.
- Wiggins, D. 2001. *Sameness and Substance Renewed*. Cambridge: Cambridge University Press.
- Williamson, T. 1986. 'The contingent *a priori*: has it anything to do with indexicals?' *Analysis* 46, 3: 113-7.
- Williamson, T. 2004. 'Armchair Philosophy, Metaphysical Modality and Counterfactual Thinking'. *Proceedings of the Aristotelian Society* 105: 1-23.
- Williamson, T. 2008. *The Philosophy of Philosophy*. Malden, MA: Wiley-Blackwell.
- Winstanley, P. 2005. 'Conceivabilities and possibilities'. *The Proceedings of the Durham-Bergen Postgraduate Philosophy Seminar*, III. Durham: Departments of Philosophy, Durham and Bergen.
- Winstanley, P. 2007. 'Conceivability, Possibility and Two-Dimensional Semantics'. *Percipi* 1: 18–31. <[http://www.personal.ceu.hu/percipi/archive/200701/03\\_winstanley.pdf](http://www.personal.ceu.hu/percipi/archive/200701/03_winstanley.pdf)> Accessed 9<sup>th</sup> June 2009.
- Wong, K-Y. 1996. 'Sentence-relativity and the necessary *a posteriori*'. *Philosophical Studies* 83: 53-91.
- Wong, K-Y. 2006. 'Two-dimensionalism and Kripkean *a posteriori* necessity'. In M. Garcia-Carpintero and J. Macia, eds. 2006.
- Yablo, S. 1993. 'Is Conceivability a Guide to Possibility?' *Philosophy and Phenomenological Research* 53: 1-42.
- Yablo, S. 1999. 'Concepts and Consciousness'. *Philosophy and Phenomenological Research* 59: 455-63.
- Yablo, S. 2000. 'Textbook Kripkeanism and the Open Texture of Concepts'. *Pacific Philosophical Quarterly* 81, 1: 98-122.
- Yablo, S. 2002. 'Coulda, Woulda, Shoulda'. In T. S. Gendler and J. Hawthorne, eds. 2002.
- Yablo, S. 2007. 'Soames on Kripke'. *Philosophical Studies* 135: 451-60.
- Zemach, E. 1976. 'Putnam's Theory on the Reference of Substance Terms'. *The Journal of Philosophy* 73, 5: 116-127.