

Linguistic Modal Conventionalism in the Real World

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Statement

This thesis is solely the work of its author. No part of it has previously been submitted for any degree, or is currently being submitted for any other degree. To the best of my knowledge, any help received in preparing this thesis, and all sources used, have been duly acknowledged.

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Abstract

This thesis examines the prospects for a theory of metaphysical modality according to which modal truth is determined by conventional rules governing the terms in a natural language. I label this theory ‘linguistic modal conventionalism’, or ‘LMC’. My focus is on articulating and responding to a specific objection to LMC: the objection that conventionalism about the modal features of objects and propositions leads to conventionalism about ordinary objects and non-modal truth.

The first part of the thesis sets out the theoretical background for LMC by describing its empiricist and naturalistic motivations, its historical background, and its modern variants. I argue that modern versions of LMC are able to respond to the Quinean and Krippean challenges that faced the theory’s positivist predecessors. The middle part of the thesis is devoted to describing the threat of object and truth conventionalism. I argue that the tight connection between an object’s conditions of existence and its modal properties means that conventionalism about modal properties leads to conventionalism about objects themselves. Similarly, the modal nature of a proposition’s truth conditions means that conventionalism about modal features of propositions leads to conventionalism about non-modal truth.

The final chapters of the thesis present a way for LMC to respond to these threats. I argue that the theory should do away with the problematic ontology by rejecting modal features of objects and propositions, and providing truth conditions for modal sentences in terms of linguistic rules directly. After describing the metaphysics and semantics of this position, I conclude by responding to a number of potential objections for LMC, and by arguing that it satisfies the empiricist and naturalist desiderata by which it is motivated.

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INTRODUCTION

Linguistic Modal Conventionalism: Promises and Threats

The nature of modality is a topic of ongoing interest to metaphysicians. This is fitting given the central role modal assertions play in the practice of philosophy itself. Often, the ‘armchair reasoning’ employed by philosophers involves consideration about what *would* hold in some hypothetical circumstance, or what follows from the *possibility* of some scenario. Descartes’ famous conceivability argument for dualism, for example, relies on the premise that the body and mind are *possibly* distinct to demonstrate that they are *actually* distinct. More generally, philosophical arguments involving thought experiments rely on the possibility of cases described. Even logical validity is sometimes construed modally, as when a valid argument is defined as one in which it is *necessary* that if the premises are true, the conclusion is true. Of course, modal reasoning is not just the province of philosophers; it also plays a significant role in everyday human reasoning. Reasoning with counterfactuals is particularly ubiquitous; an example is when you conclude that *if* you had left any later, you *would* have missed the train.

Given that we take modality for granted in our reasoning, we owe an account of what is said by modal sentences and what it takes for them to be true. By their very nature, modal claims are about how the world *might* be, or how it *must* be, rather than about how it in fact *is*. As such, they have been a source of worry for empiricists, who hold that knowledge should be gained primarily through empirical investigation and the use of the senses. After all, many empiricists have held, the investigations of science reveal how the world *is*, not how it might be or must be. Modal properties have also worried metaphysical naturalists, who wish to construct an ontology free of abstract objects and other ‘strange’ non-physical entities. Both troubling features of modality bear comparison with similar features of moral properties. J. L. Mackie puts the problem succinctly:

‘If there were objective values, then they would be entities or qualities or relations of a very strange sort, utterly different from anything else in the universe. Correspondingly, if we were aware of them, it would have to be by some special faculty of moral perception or intuition, utterly different from our ordinary ways of knowing everything else.’¹

The very same concerns apply to objective modality: for those inclined towards empiricism and naturalism, modal properties like necessity and possibility are somewhat mysterious. Like moral properties, modal properties cannot be detected using our senses,

¹ J. L. Mackie, *Ethics: Reinventing Right and Wrong* (New York: Penguin Books, 1977) p.38.

even through microscopes or telescopes. As a result, it is difficult to see how we can come to know about these properties, or what these properties are like.

Linguistic modal conventionalism (LMC) offers a way to account for modality within an empiricist and naturalist framework. On the one hand, LMC promises to fit modality into a naturalistic ontology by taking it to depend on conventional features of the way we use language. On the other hand, it promises that doing so will permit an empiricist explanation of modal knowledge, since familiarity with the conventions of language can be used to explain knowledge of modal truths. Modern versions of LMC, including those espoused by Alan Sidelle and Amie Thomasson, have their roots in the logical positivist theories of the early 20th century such as Ayer's and Carnap's.² The shared basic tenet of both historical and modern views is that necessity depends on or reduces to analyticity. As a first approximation, these theories hold that some sentences have the status of *being analytic*, and that all and only such sentences have the property of being true necessarily. While particular accounts of what's required to earn this status differ, they in general agree that a) analyticity is conventional, and b) a sentence owes its analyticity to its meaning.³ In fact, 'truth by convention' and 'truth in virtue of meaning' are both 'slogans' that have been associated with analyticity.

Since LMC takes modality to depend on analyticity, and analyticity itself is determined by a sentence's meaning, modality must also be dependent on meaning according to LMC. There are many ways this might be cashed out. For example, one might argue that a sentence is analytic when its meaning suffices for its truth, and that sentences with this property are also necessary. Alternatively, one might argue that a sentence is analytic and necessary when its truth is determined by semantic rules. Several such proposals will be discussed over the course of this thesis, in particular in chapters 1, 2 and 5. LMC also treats other modal properties of sentences, such as possibility, impossibility and contingency, as determined by a sentence's status as analytic or otherwise. As a first approximation, the theory endorses the following biconditionals:

- 'Necessarily, S' is true iff 'S' is analytic.
- 'Necessarily, not S' is true iff 'Not S' is analytic.

² See in particular Alan Sidelle, *Necessity, Essence and Individuation: A Defense of Conventionalism* (Ithaca: Cornell University Press, 1989), Amie L. Thomasson, *Ordinary Objects* (Oxford: Oxford University Press, 2007) and Amie L. Thomasson, 'Modal Normativism and the Methods of Metaphysics' *Philosophical Topics* Vol.35, Nos. 1&2 (2007): pp.135-160. Historical versions of the theory including Carnap's in Rudolf Carnap, *Meaning and Necessity* 2nd ed., (1956; repr., Chicago: University of Chicago Press, 1988) and Ayer's in A. J. Ayer, *Language, Truth and Logic*, 2nd ed. (London: Victor Gollancz Ltd, 1946), will be discussed in chapter 1.

³ Theories of analyticity and their implications for LMC will be discussed in detail in chapter 5 of this thesis. Historical accounts of analyticity will also be outlined in chapter 1, and some more recent theories will be discussed in chapter 2.

- ‘Possibly, S’ is true iff ‘Not S’ is not analytic.
- ‘Possibly, not S’ is true iff ‘S’ is not analytic.
- ‘Contingently, S’ is true iff ‘S’ and ‘Possibly, not S’ are true.
- ‘Impossibly, S’ is true iff ‘Necessarily, not S’ is true.

Read at face value as material conditionals, these biconditionals do not yet contain much information; they represent the bare bones of a theory that is fleshed out in different ways by different theorists. Each version of LMC is committed to a stronger relationship between necessity and analyticity than mere material equivalence; they say it is *because* a sentence is analytically true or false that it is necessary or impossible. The truth of these biconditionals should be viewed as reflective of a deeper and more complex dependency relation that holds between analyticity and necessity.⁴ Theories owe an account of the nature of the sentences whose modal status is explained, the nature of analyticity, and the nature of the dependency relation at issue.⁵ Ultimately, these biconditionals may even end up false once a more complex dependency relation between analyticity and necessity is described. For example, it should be noted that modern theories accept various counterexamples to the above biconditionals in the form of necessary synthetic sentences such as ‘Water is H₂O.’⁶

As noted above, the second feature generally attributed to analyticity is *conventionalism*. That is to say, whether or not a given sentence qualifies as analytic is treated as depending on conventional features of language use. For example, a sentence might qualify as analytic because of ‘our determination to use symbols in a certain fashion,’⁷ or due to ‘conventions we have adopted concerning how we will describe things.’⁸ This convention-dependence carries through to modal truths, according to LMC. Since necessity depends on analyticity, and analyticity depends on conventions, necessity depends on conventions too.

Despite its empiricist promise, LMC also faces some threats. Some of these threats are old, and considerable work to render them toothless has been done by recent defenders of linguistic approaches to modality. This applies particularly to the threat posed by Quine’s critique of the analytic / synthetic distinction, and to the threat posed by Kripkean

⁴ See section 8.2.2 for a discussion of the nature of the dependency relation that might hold between conventional features of a sentence and its modal status according to LMC.

⁵ For example, it is important to say whether LMC is interested in explaining the modal status of sentence types or tokens and whether the sentences are part of a natural language or an artificial language. These issues are addressed in section 2.4.7.

⁶ See Sidelle, *Necessity, Essence and Individuation* and Thomasson, *Ordinary Objects* for examples. These issues receive considerable attention in chapters 2 and 7 of this thesis.

⁷ Ayer, *Logic, Truth and Language* p.31.

⁸ Sidelle, *Necessity, Essence and Individuation* p.35.

necessary *a posteriori* truths. My project in this thesis is to argue for the existence of a less familiar threat to LMC, and provide a way for the theory to respond to that threat. The worry is that by treating modality as conventional, LMC may be committed to widespread conventionalism about ontology and truth, which is problematic in its own right and sits uncomfortably with the empiricist and naturalist motivations of LMC. In the course of constructing a theory that can avoid such widespread ontological conventionalism, I'll also build on the work done by others to incorporate necessary *a posteriori* truths into the framework of LMC.

The remainder of this introduction sets the groundwork for this project. Firstly, in section I, I elucidate the notion of modality that LMC seeks to explain. Sections II and III explain the epistemological and metaphysical motivations that make LMC worthy of defence, and section IV translates those motivations into some desiderata that the theory should aim to meet. Finally, section V provides a brief outline of the remaining chapters of the thesis.

I. Modality: the target of analysis

As outlined above, LMC takes modality to be determined in some way by conventional features of language or meaning. Modality, however, comes in a variety of flavours. For example, what's logically possible is what is compatible with the laws of logic. Similarly, what's physically possible is what is compatible with the laws of physics. An ethical theory will deliver a set of 'moral possibilities', or equivalently, a set of actions that are permissible according to the theory. While many actual actions contravene what's morally possible, no actual truths contravene what is logically possible or physically possible. One of the contributions made by Kripke was to popularise the notion of *metaphysical* modality. Metaphysical modality has been characterised in a number of ways.⁹ Broadly speaking, metaphysical possibilities are 'way things might be' in the most generous sense of the term. Often, it is accepted that the ways things might be are a proper subclass of the logical possibilities.¹⁰ For example, 'Some bachelor is married' is not a logical contradiction, but it also is not a metaphysical possibility; there is no way things might have turned out such that there were married bachelors. However, logical necessities such as 'If p then p' hold in every metaphysical possibility. On the other hand, we usually accept that there are *more* ways things might be than there are physical

⁹ For an overview, see Daniel Nolan, 'The Extent of Metaphysical Necessity,' *Philosophical Perspectives* Vol.25 (2011): pp.313-339.

¹⁰ Although Nolan notes that some logics will include theorems that are metaphysically contingent. For example, in some indexical logics 'I am here now' is a theorem, even though it is metaphysically possible for I, the speaker, to be located in a different place at a given time of utterance. (Ibid, p.314).

possibilities. While the laws of physics tell us that it is impossible for anything to travel faster than the speed of light, it remains a metaphysical possibility that the laws of physics might have been different such that things travel faster than light speed. Similarly, electromagnetism might have behaved differently, or magic might have been real, and so on.

The target of analysis for modern versions of LMC is generally taken to be metaphysical modality.¹¹ In line with those accounts, metaphysical modality, or modality ‘in the widest sense,’ will be my *analysandum* throughout the thesis. As such, unqualified uses of ‘modality’ should be read as referring to metaphysical modality unless otherwise stated. Similarly, unqualified uses of modal terms such as ‘necessity’, ‘possibility’ and so on should be read as referring to metaphysical necessity, metaphysical possibility, and so on. Nonetheless, it should be noted that any theory of metaphysical modality may provide the resources for an account of other modalities. The prospects of expanding the account in such a way are particularly good if other modalities are viewed as restricted forms of metaphysical modality. Physical possibility, for example, might be treated as what’s metaphysically possible holding fixed certain truths about the physical nature of the world. Potential concerns that arise for LMC given the relationship between metaphysical modality and other modalities are discussed in section 8.2.3 of this thesis.

II. Epistemological motivations

Despite the threats it faces, LMC is worthy of investigation due to a number of theoretical advantages that render it *prima facie* more attractive than its rivals in at least some respects. The first of these is epistemological. Put briefly, LMC seems to do better than prominent rivals at explaining how it is that we gain epistemic access to modal truths ‘from the armchair,’ or how *a priori* reasoning results in modal knowledge.¹² Accounts of our epistemic access to modal truths differ; yet it is commonly accepted that this

¹¹ In *Necessity, Essence and Individuation*, Sidelle often uses the phrase ‘metaphysical necessity’ to pick out the kind of non-conventional, worldly necessity he wants to *reject*. However, he makes clear that his account is of how things might be in the sense described above. Thomasson explicitly restricts her discussion to metaphysical modality in ‘Modal Normativism and the Methods of Metaphysics,’ p.135.

¹² References to worries about modal epistemology can be found in a number of sources. For examples see Stephen Yablo, ‘Is Conceivability a Guide to Possibility?’ *Philosophy and Phenomenological Research* Vol. 53, No. 1 (1993) pp.3-4 and Thomas Holden, ‘Hume’s Absolute Necessity,’ *Mind* Vol.123, No. 490 (2014) p.389. Sidelle argues at length that his theory does better than its rivals in terms of an explanation of modal knowledge. See Sidelle, *Necessity, Essence and Individuation* pp.86-104. Thomasson also cites epistemological worries for rival theories of modality. See ‘Modal Normativism and the Methods of Metaphysics’ p.136.

knowledge is not empirical in nature.¹³ Rather, acts such as imagining, conceiving or intuiting are widely cited as granting epistemic access to modal truths. Any metaphysician who wishes to accept that modal knowledge is acquired using this or similar methodology must be able to explain how the kinds of entities or facts she posits as the basis of modality are the kinds of entities or facts about which we could discover truths using this sort of mental act. Perhaps unsurprisingly, many metaphysical theories of modality struggle to provide such an explanation.

One widely cited mechanism for acquiring modal knowledge is *conceiving*. Stephen Yablo argues for an account according to which your conceiving that p involves p's being represented to you as possible.¹⁴ Given that representing p as possible is part of what it is to conceive that p in Yablo's sense, your state of conceiving is veridical, on Yablo's view, so long as p is in fact possible.¹⁵ He argues that any state of affairs that is conceivable is metaphysically possible; or at least, that conceivability in his sense is very good evidence for metaphysical possibility. In order to understand why this would be the case, however, we need a metaphysical theory of modality that can explain why acts of conceiving provide this epistemic access to possibility. What *is* possibility such that our ability to represent p as possible usually corresponds to the genuine possibility of p?¹⁶ This question is difficult to answer for a range of metaphysical theories of modality. David Lewis, for example, famously argues that modal facts are determined by goings on at concrete worlds that are isolated from us in space and time. It is possible on his view that there is a talking donkey, for example, if and only if a talking donkey exists in at least one such concrete world.¹⁷ It is somewhat mysterious, however, how mere acts of conceiving could grant us knowledge about the goings on at these isolated worlds. Plausibly, in order to know about talking donkeys there must be at least some causal chain, no matter how long, connecting them to us.¹⁸

¹³ At least, it isn't wholly empirical in nature. Knowledge of *a posteriori* necessities such as 'Necessarily, water is H₂O' plausibly requires empirical knowledge. However, empirical knowledge alone won't suffice even for knowledge of *a posteriori* modal truths. See chapters 2 and 7 of this thesis for further discussion.

¹⁴ Yablo, 'Is Conceivability a Guide to Possibility?' Discussion of this topic by a number of authors can be found in Tamar Szabó Gendler and John Hawthorne eds., *Conceivability and Possibility* (Oxford: Clarendon Press, 2002).

¹⁵ Yablo, 'Is Conceivability a Guide to Possibility?' pp.4-7.

¹⁶ Yablo himself notes that many authors have been sceptical about *why* we should think conceivability is a good guide to possibility.

¹⁷ David Lewis, *On The Plurality of Worlds*, (1986; reissued Malden: Blackwell Publishing, 2001). See especially sections 1.1 and 1.2.

¹⁸ A number of authors have criticised Lewis's modal metaphysics on the basis that it does not allow for an adequate modal epistemology. See for example Ross P. Cameron, 'Lewisian Realism: Methodology, Epistemology, and Circularity,' *Synthese* Vol.156, No.1 (2007): pp.143-159 and chapter 9 of John Divers, *Possible Worlds* (London: Routledge, 2002). Lewis's own defence of his modal epistemology can be found in *On the Plurality of Worlds* pp.108-115.

Things hardly seem better for those who analyse modal sentences as expressing claims about abstract, rather than concrete, possible worlds.¹⁹ After all, causal chains between us and abstract objects are just as mysterious as causal chains between us and spatiotemporally isolated concrete objects. George Bealer has posited a faculty of ‘intuition’ through which we learn about such entities.²⁰ However positing such a faculty does little to relieve the mystery of its operation. Similar worries arise for essentialist views such as Kit Fine’s and E.J. Lowe’s.²¹ Each of these philosophers posits the existence of ‘essences’ had by objects that can be used to provide an explanation of modality more broadly. However, knowledge of essences requires explanation just as knowledge of modality does.

Ultimately, it would be preferable if modal knowledge could be explained using familiar resources. LMC promises to do just that; it opens the way for an explanation of our armchair methods of modal discovery without recourse to mysterious faculties of intuition, or knowledge in the absence of causal connections. If modal facts depend on conventional features of language use, we as the instigators of the conventions can come to know the modal facts through familiarity with the rules of our own language. For example, if the truth of ‘Necessarily, all bachelors are unmarried’ is due to a conventional decision to abbreviate ‘unmarried man’ with ‘bachelor,’ my knowledge of the relevant convention can be used to explain my knowledge of the modal truth. Furthermore, this account offers an explanation for why modal knowledge is usually *a priori*. Armchair methods reveal modal truths because the tools required to work out what the rules of language mandate and permit, and therefore what is necessary and possible, are had by competent speakers in the armchair. According to LMC, my representation of some sentence as expressing a possibility is usually veridical because for S to be possible is just for S to be non-contradictory given its meaning.²²

One way to put this advantage had by LMC is in terms of a potential solution to a Benacerraf style dilemma posed for modal knowledge. Famously, Benacerraf argued that

¹⁹ For examples of such theories see Robert Merrihew Adams, ‘Theories of Actuality,’ *Noûs* Vol.8, No.3 (1974): pp.211-231, Alvin Plantinga, ‘Two Concepts of Modality: Modal Realism and Modal Reductionism,’ *Philosophical Perspectives* Vol. 1 (1987): pp.189-231 and Robert Stalnaker, *Ways a World Might Be: Metaphysical and Anti-Metaphysical Essays*, (Oxford: Clarendon Press, 2003). See also Divers, *Possible Worlds* Part III for discussion.

²⁰ See George Bealer, ‘The Philosophical Limits of Scientific Essentialism,’ *Philosophical Perspectives* Vol. 1, (1987): pp.289-365 and George Bealer, ‘Modal Epistemology and the Rationalist Renaissance,’ in Gendler and Hawthorne eds. *Conceivability and Possibility*.

²¹ Kit Fine, ‘Essence and Modality: The Second Philosophical Perspectives Lecture,’ *Philosophical Perspectives* Vol. 8 (1994): pp.1-16, E. J. Lowe, ‘Two Notions of Being: Entity and Essence,’ *Royal Institute of Philosophy Supplement* Vol. 62 (2008): pp.23-48, and E. J. Lowe, ‘What is the Source of Our Knowledge of Modal Truths?’ *Mind*, Vol. 121, No. 484 (2012): pp.919-950.

²² Of course, this account is not immune from objections. Objections concerning our knowledge of linguistic conventions are discussed in section 8.1 of this thesis.

there was no satisfactory way to adequately provide both a semantics and an epistemology for mathematical sentences.²³ He argued that what was required to fulfil both tasks was a set of truth conditions for mathematical sentences that a) say what must hold in order for mathematical sentences to be true, while b) accounting for how knowledge of their truth is possible. The first task involves providing a metaphysics for mathematics, since in order to state the conditions under which mathematical sentences are true, an account must be provided of what *makes* them true. However, the second task requires that the metaphysical account provided is compatible with our knowledge of mathematics. The issue raised by Benacerraf was that current theories seemed to succeed at the first task at the expense of the second. For example, Platonists about mathematical objects can provide an adequate semantics for mathematical language, but they struggle to explain our epistemic access to objects construed as abstract.

Christopher Peacocke has argued that Benacerraf-style problems arise in a number of areas of philosophy, suggesting a general ‘integration challenge’: for any discourse, a satisfactory account must provide a semantics that allows for a plausible epistemology.²⁴ Peacocke, along with Lewis and Stalnaker, has suggested that an integration challenge arises for modal claims.²⁵ An adequate account of modal sentences must be able to provide a metaphysical story about the conditions under which they are true, while also explaining our knowledge of their truth. The modal metaphysical views mentioned above (e.g. Lewis’s, Fine’s, etc.) tend to opt for an adequate semantics at the expense of a modal epistemology; they give truth conditions for modal sentences in terms of entities such as abstract or concrete possible worlds, but are unable to adequately explain our knowledge of when those truth conditions are fulfilled.²⁶ On the other hand, LMC has the potential to meet the integration challenge by fulfilling both of Benacerraf’s requirements; if modal truth depends on conventional meaning, knowledge of modal truth can be explained in terms of knowledge of meaning.²⁷

It might be objected that the purported epistemological advantage had by LMC is only an advantage insofar as you accept methodological naturalism or empiricism. If you think

²³ Paul Benacerraf, ‘Mathematical Truth,’ *The Journal of Philosophy* Vol.70, No.19 (1973): pp.661-679.

²⁴ Christopher Peacocke, *Being Known* (Oxford: Clarendon Press, 1999). See especially chapter 1.

²⁵ See Lewis, *On the Plurality of Worlds* pp.108-115, Stalnaker, *Ways a World Might Be* chapter 2.

²⁶ However, Peacocke (*Being Known*, chapter 4) himself argues that he has a solution to the integration challenge for modal sentences that avoids commitment to mind-dependent truth conditions. Also, Lewis notes that his view might be accused of failing to provide an integrated metaphysics and epistemology, and argues that in fact he can account for our modal knowledge, given his modal metaphysics. (Lewis, *On the Plurality of Worlds* pp.108-115.) See Stalnaker *Ways a World Might Be* chapter 2 for a reply to Lewis’s arguments.

²⁷ John Divers and Daniel Elstein have suggested that a promising anti-realist strategy is to reverse the order of explanation suggested by the integration challenge. If we start by looking at the function of our modal beliefs and the conditions under which we acquire them, we can then give an account of modality itself to suit. See J. Divers and D.Y. Elstein, ‘Manifesting Belief in Absolute Necessity,’ *Philosophical Studies* Vol. 158, No. 1 (2012): pp.109-130.

empirical investigation is a privileged way to discover truths, or that the methods of philosophy should be continuous with the methods of science, you may be sympathetic to the reasons cited above to favour LMC. On the other, if you take *a priori* investigation to be capable of revealing deep truths about the structure of reality you may remain unconvinced. Those who find a Bealer-style faculty of intuition unproblematic, for example, may take themselves to have a satisfactory explanation of our knowledge of entities such as abstract possible worlds or essences. Such a combination of views may provide a ‘rationalist’ solution to the integration challenge. Of course, LMC need not set out to convince *everyone* of its worth. Many philosophers in fact prefer naturalistic methodology over rationalism, and have good reasons to do so.²⁸ Those who fall into this category have need of an account of modality that fits their broader philosophical position. Given that popular modal metaphysical theories struggle to provide a satisfying naturalistic account of modal epistemology, other options are worth exploring for naturalists.

For those who don’t come to the debate with firm rationalist or empiricist commitments, it’s worth noting independent reasons to prefer the style of explanation for modal knowledge promised by LMC over a Bealer-style modal intuition. Firstly, LMC promises to provide an account of modal knowledge that is reductionist in that modal epistemology is explained in terms of pre-established means of knowledge acquisition. In doing so, the account is also parsimonious in that it allows for us to make do with fewer distinct ways of acquiring knowledge. If the line of explanation suggested on behalf of LMC proves fruitful, our knowledge of modality can be fully explained in terms of other kinds of knowledge; in particular, in terms of our knowledge of our own linguistic conventions. If so, there is no need to posit an extra faculty of intuition simply for the sake of explaining modal knowledge.²⁹

III. Metaphysical motivations

LMC also promises a number of metaphysical advantages over its rivals; by treating modal truth as determined by conventional features of language, LMC has the potential to be metaphysically naturalist, reductionist and parsimonious. Unsurprisingly, the latter of

²⁸ See Daniel Nolan, ‘Naturalised Modal Epistemology,’ in R. Fischer and F. Leon eds. *Modal Epistemology after Rationalism* (Springer, forthcoming) for an overview of the reasons to be attracted to naturalist epistemology, and in particular a naturalist modal epistemology.

²⁹ In *Modal Epistemology and the Rationalist Renaissance* Bealer argues that the faculty of intuition provides us with knowledge in a range of cases, not just in the modal case. However, those of a methodological naturalist persuasion may well think they can do without intuition in those cases too, at least in Bealer’s sense of ‘intuition’.

these two advantages are related. If LMC is able to reduce modal facts to facts about language use, it is also able to avoid commitment to *sui generis* modality. As with the epistemological advantages had by LMC, it is worth taking some time to note how rival theories do when it comes to these metaphysical desiderata. Interestingly, primitive modality of one kind or another is a common feature in a number of well-known theories of modality. For example, Plantinga analyses modal truths in terms of goings on at abstract ‘states of affairs’, but argues that an account of which states of affairs can obtain together must irreducibly make use of modal notions.³⁰ Similarly, Adams argues for ‘world-stories’ which are defined as maximal consistent sets of propositions; any proposition is taken to be possibly true if it is a member of at least one world-story.³¹ However, the modal notion of consistency is left as primitive. Finally, Stalnaker argues that modal sentences should be analysed in terms of quantification over possible worlds, and that propositions can be reduced to sets of possible worlds; however, the notion of a possible world once again remains primitive in his theory.³² These theories fail to be reductionist, and by the same token fail to be parsimonious; by requiring irreducible modal notions they commit themselves to extra primitives in their overall metaphysical theory.

Arguably, the essentialist views of Fine and Lowe also involve a commitment to unwanted primitives insofar as essence is left unreduced. Lowe provides an analysis of essence in terms of ‘real definitions’ of objects.³³ These definitions are not intended to be linguistic, but instead tell us ‘what a thing is’; they tell us about the properties that define an object’s identity. However, the notion of a ‘real definition’ could well be a modal notion in disguise; after all, the role of real definitions appears to be to tell us what properties something *must* have in order to retain its identity. If so, primitive modality remains in Lowe’s conception of an essence.

Lewis’s concrete realism has the advantage that it is genuinely reductionist, and thereby avoids commitment to primitive modality. If modal truth is determined by goings on at worlds just like our own physical universe, no primitive consistency relation or essence is required. Nonetheless, Lewis’s view fails to be parsimonious along a different axis; despite avoiding primitive modality, it is burdened by the ontological commitment incurred by the worlds themselves. Lewisian realism entails the existence of an infinite number of concrete universes where we thought there was just one. As such, his view

³⁰ Alvin Plantinga, ‘Actualism and Possible Worlds’ in Matthew Davidson ed., *Essays in the Metaphysics of Modality* (Oxford: Oxford University Press, 2003): pp.103-121.

³¹ Adams, ‘Theories of Actuality’.

³² Stalnaker, *Ways the World Might Be*, chapter 1.

³³ Lowe, ‘What is the Source of Our Knowledge of Modal Truths?’

avoids ontological commitment to extra *types* of entity only by taking on ontological commitment to an infinite number of *tokens* within a familiar type: concrete objects like tables, chairs, and so on.³⁴

By contrast, LMC has the potential to be reductionist while also remaining parsimonious along both axes; it avoids extra ontological commitment both among types of entity and within types of entity. As described above, LMC aims to provide an account of the truth of modal sentences in terms of the linguistic practices in which speakers engage. Unlike notions such as essence, conventions of language use earn their place in our picture of the world independently of whether they can be used to explain modality. As such, if LMC succeeds in its reduction it will qualify as genuinely parsimonious. Of course, it remains to be seen whether the details of LMC can be spelled out in such a way that primitive modality is avoided. As we'll see in chapter 2, one way to explicate the conventions of language that determine modal truth is in terms of *linguistic rules*. Genuine reductionism would then require an account of those rules that does not rely on modal notions. Whether such an account can be given is discussed in section 8.2.

A final metaphysical advantage had by LMC is its ability to meet the requirements of a demanding metaphysical naturalism. In the literature, accounts of which properties count as natural properties differ. One view is that a metaphysical naturalist ought to accept in her ontology all and only those objects and properties to which the ideal scientific theory is committed.³⁵ However, as Philip Pettit notes, there is substantial disagreement over which kinds of entities fall into this category. For some, entities such as universals, objective chances and even abstract possible worlds may count as natural. According to others, however, the only naturalistically respectable entities are space-time points, bits of matter, and physical properties had by space-time points and bits of matter.³⁶ Lewis's theory of possible worlds can retain naturalist credentials on both the stricter account of naturalism and the more permissive one.³⁷ On the other hand, many of the theories of modality discussed above will count as naturalistic only on the more permissive account,

³⁴ Joseph Melia has argued that Lewis's ontology is not even parsimonious when it comes to types of entities, since it is committed to a very large number of objects that are qualitatively unlike any actual objects (for example golden mountains and talking donkeys). See Joseph Melia, 'A Note on Lewis's Ontology,' *Analysis* Vol. 52, No. 3 (1992): pp.191-192. A reply on behalf of Lewis can be found in Divers, *Possible Worlds* p.155.

³⁵ Philip Pettit and Michael Rea both make this claim. See p.247 of Philip Pettit, 'The Nature of Naturalism,' *Proceedings of the Aristotelian Society* Vol.66 (1992): pp.245-266 and Michael Rea, 'Naturalism and Material Objects,' in William Lane Craig and J. P. Moreland eds., *Naturalism: A Critical Analysis* (London: Routledge, 2000) pp.110-132.

³⁶ See Pettit, (Ibid p.247) and Rea, (Ibid p.111) for two brief overviews of the kind of entities self-identifying naturalists have been willing to countenance.

³⁷ Lewis's ontology also includes sets, since entities like properties and propositions are defined as set theoretic constructions out of possible objects and worlds. However, any plausible version of LMC is also likely to require commitment to sets and so cannot claim advantage over Lewis's view in that regard.

insofar as they are committed to entities such as abstract possible worlds and essences. LMC promises to qualify as naturalistic relative to strict versions of naturalism as well as permissive ones. Plausibly, the facts about languages and the practices of language users that determine modal truth according to LMC themselves reduce to facts about physical goings on in the world.

IV. From motivations to desiderata

These epistemological and metaphysical advantages had by LMC provide it with sufficient motivation to render the project of defending the theory from various objections worthwhile. For the most part, these advantages will be taken for granted in this thesis, as my focus will be on LMC's threats, rather than its promises. However, any final version of the theory must at least show potential for living up to many or all of its motivations. With that in mind, I will loosely set out some desiderata for LMC that are derived from the advantages discussed above. These desiderata will be revisited in chapter 8, where the theory developed in chapters 6 and 7 is weighed in terms of its capacity to meet them.

Desideratum 1: The metaphysics of modality provided by LMC must be compatible with a plausible account of our knowledge of modal truths, thereby meeting the integration challenge posed by Benacerraf and Peacocke. Furthermore, LMC must be compatible with an empiricist, methodologically naturalistic account of our modal knowledge.

Desideratum 2: The metaphysics of modality provided by LMC must meet three conditions. It must be reductionist in that it avoids commitment to primitive or unreduced modal notions, and it must be parsimonious when it comes to both ontological types and tokens. The theory must also conform to a strict metaphysical naturalism.

Desideratum 3: LMC must be able to provide a satisfying response to prominent objections. This includes existing challenges such as Quine's critique of the analytic / synthetic distinction and the existence of necessary *a posteriori* truths, as well as the challenges described in chapters 3-5 of this thesis. This final desideratum will be the primary focus of the remainder of the thesis, beginning with a discussion of Quinean and Kripkean challenges in chapters 1 and 2.

V. A map of the thesis

I begin in chapter 1 with an overview of the historical background of linguistic modal conventionalism, beginning with the logical positivists and finishing with the challenges posed by Quine and Kripke. This chapter provides helpful context through discussion of why the theory was developed and why it lost favour. I will argue that the philosophical concerns that led many to reject LMC can be answered. In part, this task has already been tackled by defenders of LMC such as Sidelle and Thomasson; I will accept some aspects of their case, and argue that other parts need extra development. Doing so will be the task for chapter 2. There, I describe the positions of Sidelle and Thomasson in detail, paying particular attention to the way each theorist incorporates necessary *a posteriori* truths into a linguistic approach to modality. The two accounts of the necessary *a posteriori* are similar, and show promise. However, I argue that both depend on a notion of actual-world dependence that is left unexplained. Chapter 2 also provides a defence of analyticity in light of Quinean objections, making use of the work of Sidelle and Thomasson among others. Finally, it includes a brief overview of other conventionalist and / or deflationary modal theories, and sets up parameters that a theory must meet to qualify as LMC.

In chapters 3, 4 and 5 I present a new source of objection for LMC. Beginning in chapter 3, I argue that the theory is in danger of commitment to conventionalism about ordinary objects, and indeed, about any entities that possess modal properties. One such argument comes from Sidelle, who aims to demonstrate that LMC is incompatible with object realism insofar as in combination, the two views become committed to logical contradictions. Sidelle's preferred solution to the problem is to reject object realism and accept a conventionalist theory of objects. However, I argue that such a commitment is problematic in light of LMC's motivations and ought to be avoided if possible. I also present a second route from LMC to object conventionalism: given that the existence and identity conditions of objects are modal in nature, conventionalism about an object's modal properties leads to conventionalism about the object itself.

Chapter 4 examines whether Thomasson's work, potentially in combination with Stephen Schiffer's work on 'pleonastic properties,' can be used to formulate a version of LMC that avoids object conventionalism. I argue that this avenue for defending the theory fails. In doing so, I argue for a dilemma facing LMC. On the one hand, there is a 'weak' version of the theory that avoids object conventionalism; however, its commitments are so minimal that the view fails to constitute a genuine theory of modality. On the other hand, there is a 'strong' version of theory that constitutes a genuine theory of modality, but is committed to object conventionalism. In chapter 5, I argue that a structurally isomorphic

dilemma can be established when it comes to modality and truth. Plausibly, LMC should treat the *content* of sentences (perhaps construed as propositions) as qualifying as metaphysically necessary, or contingent, and so on due to the conventions of language governing the sentences themselves. However, insofar as the truth conditions of propositions are modal, conventionalism about the modal status of those propositions leads to conventionalism about non-modal truth. On the other hand, weaker versions of LMC that avoid this commitment fail to constitute genuine theories of modality.

In chapters 6 and 7, I outline a strategy for LMC to respond to the objections set out in chapters 3, 4 and 5. I argue that both horns of the dilemma can be avoided by doing away with problematic ontology. In particular, that means denying the existence of modal properties had by objects, and of modal statuses had by propositions or sentence contents. Then, the truth conditions of both *de re* and *de dicto* modal sentences can be given without reference to such entities; instead they make reference directly to the features of language upon which LMC takes modality to depend. Chapter 6 describes the metaphysics of this account, and chapter 7 describes its semantics. Specifically, chapter 7 gives an overview of how possible worlds can be constructed within the context of LMC, and provides some basic truth conditions of modal sentences in terms of such worlds. In doing so, I return to the issue of the necessary *a posteriori* discussed in chapter 2 by providing an account of how LMC can make use of actual-world dependence to explain the necessity of sentences like ‘Water is H₂O.’

Finally, in chapter 8, I revisit the desiderata described in sections II and III of this introduction, and provide replies to a number of objections facing the version of LMC articulated in chapters 6 and 7.

CHAPTER 1

The Rise and Fall of Linguistic Modal Conventionalism

In order to assess the prospects for a modern linguistic modal conventionalist theory, it is helpful to begin by establishing the position's theoretical background. This chapter will provide that background in the form of an overview of the history of LMC, beginning with the logical positivists, continuing through Quine's critique of positivist theories, and ending with issues that arose for those theories in light of the work in the philosophy of language and metaphysics done by Kripke and Putnam. It will pave the way for in depth discussion and critique of two modern variants of the theory in the next chapter: those of Alan Sidelle and Amie Thomasson. The purpose of this chapter is to bring to light the specifics of certain historical theories and the issues that faced them, as well as to provide a sense of how and why attitudes to linguistic theories have changed over time. I will argue that the principal arguments against LMC that led to its loss of favour can be combated. Throughout, I'll draw attention to where historical instantiations of the theory stand in relation to the desiderata for LMC established in the introduction: empiricism, epistemological and methodological naturalism, reductionism and parsimony. I'll begin in section 1.1 with a broad outline of logical positivism and how the movement came to be associated with LMC. I'll then describe two positivist modal theories: those of Ayer and Carnap. Next, section 1.3 addresses Quine's influential rejection of the analytic / synthetic distinction and the consequences it had for Ayer and Carnap's views. I'll finish in sections 1.4 and 1.5 by discussing the work of Kripke and Putnam and its relevance for positivist LMC. Finally, I'll conclude by revisiting the desiderata established in the introduction, and in particular the final desideratum listed: a satisfactory linguistic theory must be able to withstand prominent critiques, such as those levelled by Quine, Putnam and Kripke. This will provide useful context for the discussion of Sidelle and Thomasson in chapter 2, both of whom focus on meeting the Kripkean challenge for their respective linguistic theories.

1.1 Logical positivism and early linguistic theories of modality.

In order to situate particular linguistic theories of modality endorsed by the logical positivists, it will help to begin with a broad discussion of the motivations and central tenets of the positivist movement, as well as the developments in science and philosophy that helped to bring it about. In particular, Einstein's general relativity theory was highly influential in the ideas of many of the philosophers who were associated with the Vienna

Circle and became known as logical positivists.³⁸ The influence of relativity theory derived from its apparent incompatibility with the traditional Kantian view of *a priori* knowledge. Kant had argued that a significant part of scientific knowledge was synthetic *a priori*, and gained via the use of ‘pure intuition’. In particular, this included Euclidian geometry, and the parts of Newtonian physics that describe space-time in terms of it.³⁹ However, the emergence of non-Euclidian geometries through the work of Helmholtz and others began to undermine this position; if coherent non-Euclidian systems of geometry could be constructed, it was difficult to maintain the position that Euclidian geometry was ‘true’ as revealed by pure intuition.⁴⁰ Einstein’s work finally rendered Kant’s position altogether untenable since it showed that the best scientific theory of space-time made use of non-Euclidian rather than Euclidian geometry.

The early logical positivists began as neo-Kantians who struggled to explain knowledge of geometry and its role in scientific theory. Ultimately, these philosophers concluded that a break with Kant was necessary and that the synthetic *a priori* had to be rejected. Two important figures in this process were Moritz Schlick and Hans Reichenbach. Both developed new ideas about the role played by geometrical theories in broader physical theories and our knowledge of them.⁴¹ While both Schlick and Reichenbach rejected the idea that geometry was synthetic *a priori*, neither replaced it with the view that geometry was *a posteriori* and straightforwardly subject to empirical experimentation.⁴² While empirical results such as Einstein’s clearly had bearing on which geometrical theory correctly describes space-time, the early positivists did not conclude that any geometrical system was testable on its own; rather, they took geometry to form part of a wider

³⁸ A good overview of the implications of general relativity for the positivists can be found in Michael Friedman, *Reconsidering Logical Positivism* (Cambridge: Cambridge University Press, 1999), introduction and ch. 3, and J. Alberto Coffa, *The Semantic Tradition from Kant to Carnap* (Cambridge: Cambridge University Press, 1991) chs. 1, 3 and 9.

³⁹ Immanuel Kant, *Critique of Pure Reason*, 2nd rev. ed., trans. J. M. D. Meiklejohn (New York: Wiley Book Co., 1943). Relevant sections include pp.97-112 (A148-A158), pp.38-39 (A46-A48). See Friedman, *Reconsidering Logical Positivism* ch. 3 and Coffa, *The Semantic Tradition* for analysis of Kant on analyticity, pure intuition and the *a priori*. Kant’s view of geometry as synthetic *a priori* is due, according to Coffa ch. 3, to his narrow conception of analyticity. For Kant, concepts have components, and the act of analysis involves breaking them down into those components. No sentence is analytic unless the predicate concept is literally a part of the subject concept. Geometrical sentences fail this test.

⁴⁰ Coffa ch. 3 includes discussion of the work of Helmholtz and the reaction of neo-Kantians.

⁴¹ See Hans Reichenbach, *The Theory of Relativity and A Priori Knowledge*, trans. University of California (Berkeley and Los Angeles: University of California Press, 1969), Moritz Schlick, ‘The Philosophical Significance of the Principle of Relativity’ and ‘Critical or Empiricist Interpretation of Modern Physics?’ in *Philosophical Papers* (Vol. 1), ed. Henk L. Mulder and Barbara F. B. van de Velde-Schlick, trans. Peter Heath (Dordrecht: D Reidel Publishing Company, 1979), pp.153-189, pp.322-334 and Moritz Schlick, ‘Are Natural Laws Conventions?’ in *Philosophical Papers* (Vol. 2), ed. Henk L. Mulder and Barbara F. B. van de Velde-Schlick, trans. Herbert Feigl and May Brodbeck (Dordrecht: D. Reidel Publishing Company, 1979), pp.437-445.

⁴² Friedman, *Reconsidering Logical Positivism* pp.6-7, p.60 argues that the positivists’ theory of geometry does not qualify as ‘empiricist’ in the tradition of Kant’s British empiricist opponents.

scientific theory that faced the test of experience as a whole.⁴³ Reichenbach argued that scientific theories include two kinds of posits that play distinct roles within the theory. On the one hand, he took there to be empirical posits that make predictions about the world and are testable via observation. On the other hand, however, in order for those posits to have any content or meaning, the concepts and terms involved had to be clearly defined. This was the role of the other posits in the theory. As such, Reichenbach argued that scientific theories include both ‘axioms of connection’ that are empirical and testable, and ‘axioms of coordination’ that are ‘constitutive’; they define the terms involved in the theory, and must be established before empirical investigation can begin.⁴⁴ Schlick agreed with Reichenbach on the need for constitutive principles but argued that they should be treated as conventions, ‘in Poincaré’s sense.’⁴⁵

Importantly, both Reichenbach and Schlick treated geometry as forming part of the conventional or ‘constitutive’ part of the theory.⁴⁶ Their central disagreement with Kant was over his treatment of geometry as *synthetic*. At first glance, the treatment of geometry as conventional or definitional may seem in conflict with the original motivation of these new views. After all, in order to accommodate the shift from Newton to Einstein, it must be the case that geometry can be revised in light of empirical evidence. However, no conflict arises because for Reichenbach and Schlick, geometry is subject to revision despite being definitional. Reichenbach in particular is famous for endorsing a *relative a priori*. Within a given theory, geometrical posits were treated as definitional of concepts such as ‘line’ and ‘point’; but empirical investigation could motivate moving to a new scientific theory, and therefore revising the definitional principles in such a way that these concepts were redefined.⁴⁷ This view was taken up and expanded by Carnap in his ‘The Logical Syntax of Language,’ and later, his ‘Meaning and Necessity.’ Carnap saw the matter of which sentences were definitional as relative to

⁴³ For example, Reichenbach, *The Theory of Relativity* p.59 says, ‘In the literature the problem of consistency has usually been discussed only with regard to individual principles... But in this way the question is not formulated correctly. The problem is not whether one individual principle can be retained but whether the whole *system* of principles can always be preserved.’

⁴⁴ See Reichenbach *The Theory of Relativity* pp.34-47, pp.52-55.

⁴⁵ Schlick, ‘Critical or Empiricist Interpretation of Modern Physics?’ p.333.

⁴⁶ For example, Reichenbach p.76 says, ‘Mathematics is indifferent with regard to the applicability of its theorems to physical things, and its axioms contain merely a system of rules according to which its concepts can be related to each other... Therefore, the axioms of geometry could not assert anything about the epistemological problem of physical space.’ And Schlick, ‘Are Natural Laws Conventions?’ p.437, says ‘Henri Poincaré developed the procedure of convention with reference to the propositions of geometry... by calling attention to the fact that those propositions in their application to the spatial properties of bodies are to be regarded as conventions.’

⁴⁷ An important difference between Reichenbach and Schlick is that for Reichenbach, one and the same posit can be *a priori* and analytic in one theory, but *a posteriori* and synthetic in the context of another theory. For Schlick, if a posit is conventional it is conventional in all theories. (See Friedman *Reconsidering Logical Positivism* pp.66-68 for discussion.)

a formal language; according to him, the rules of a language determine which sentences are analytic in that language.⁴⁸

The response taken by the positivists to relativity theory was therefore to conclude that there was no synthetic *a priori*. Rather, the posits of a scientific theory were treated as belonging to one of two camps: they must be either constitutive of meaning, or empirical. This view paved the way for the formation of the verificationist theory of meaning, according to which all meaningful sentences are either analytic or have direct observational consequences.⁴⁹ Verificationism is in direct opposition to the Kantian synthetic *a priori* since it denies that there are any meaningful, synthetic sentences that are only knowable *a priori*. Rather, any meaningful sentence that is knowable only *a priori* must be analytic. This combined emphasis on empirical methods and the logical analysis of language can justifiably be called the core of the positivist movement, which is often aptly termed ‘logical empiricism.’ The movement was strongly anti-rationalist, rejecting the ‘pure intuition’ of Kant and replacing it with a respect for the empirical methodology of science. However, it did not go so far as to require that all knowledge was empirical; rather, its proponents argued that some knowledge could be gained by the logical analysis of the language of science. While empirical investigation was the job of scientists, the task of the analysis of language was considered to be the job of philosophers.⁵⁰

It can now be made clear how and why the logical positivists came to endorse a linguistic theory of modal truth. In fact this position on modality is naturally suggested by the positivist position on *a priori* knowledge and the role of philosophy. Modal sentences make claims that are not about what is actually the case; rather they are about what *must* be the case or what *could possibly* be the case. Therefore, they are typical examples of claims the truth of which cannot be discovered empirically. In order to find out whether it is necessary that all bachelors are unmarried, doing a survey of bachelors won’t get you very far. You might discover that all bachelors are *actually* unmarried, but this alone is not sufficient to determine whether this is *necessarily* the case. Similarly, there are no experiments you can run in order to determine whether unicorns or talking donkeys are possible or impossible. All you’ll find is that *actually* there are none. If modal claims are

⁴⁸ Rudolf Carnap, *The Logical Syntax of Language*, trans. Amethe Smeaton (London: Kegan Paul, Trench, Trubner & Co. Ltd., 1937), Rudolf Carnap, *Meaning and Necessity* 2nd ed. See also Friedman, *Reconsidering Logical Positivism* ch. 7 for discussion.

⁴⁹ Ayer is perhaps most famous for endorsing a verificationist theory of meaning. See A. J. Ayer, *Language, Truth and Logic*, 2nd ed. pp.35-41.

⁵⁰ For example Carnap says in the foreword to ‘The Logical Syntax of Language’ (p.xiii) ‘That part of the work of philosophers which may be held to be scientific in its nature – excluding the empirical questions which can be referred to empirical science – consists of logical analysis... *Philosophy is to be replaced by the logic of science* – that is to say, by the logical analysis of the concepts and sentences of the sciences...’

not susceptible to empirical investigation, then they are of dubious standing according to the positivists unless their truth is somehow definitional. That is to say, the truth of modal sentences must be connected with the ‘constitutive’ or analytic parts of a theory. Luckily, there was a natural way for the positivists to take modal truths to depend on language. For a sentence to be true necessarily is for there to be a sense in which it cannot be false. As a result, a positivist treatment of modal sentences requires there to be a feature of language that guarantees the truth of some sentences. Of course, the positivists already made use of exactly such a feature: analyticity. At least relative to a theory, framework or language, any sentence that is analytic cannot be false in that language, and is therefore true necessarily.

For this reason, it made sense for positivists to treat any sentence that had the feature of analyticity as also having the feature of necessity. Given that the positivists already claimed that all *a priori* sentences were analytic, they tended to treat analyticity, *apriority* and necessity as co-extensional properties of sentences, with the latter two features being dependent on the former. The sentences that could be known in the absence of empirical investigation and were true necessarily were taken to be all and only those whose truth was guaranteed by the meanings of the sub-sentential terms. Hence, a linguistic theory of modality was adopted; modal sentences were taken to depend for their truth on the meanings of terms.

In summary, positivist linguistic theories of modality had their roots in a philosophy of science that arose due to the work of Einstein and the need to explain the role of geometry in general relativity. The posits of scientific theories were taken to be of two kinds: the conventional, analytic, *a priori*, necessary posits that define the terms of a theory, and the synthetic, *a posteriori*, contingent posits that are subject to scientific experimentation. Importantly, even the former can be given up in light of evidence if new definitions of terms are required.⁵¹ This is what the positivists took to have occurred in the shift from Newtonian physics with its Euclidian geometry to Einsteinian physics with its non-Euclidian geometry. The positivists took the analytic and *a priori* parts of scientific theory to provide a role for philosophy; the job of philosophers was to analyse the conventional, definitional posits of theory. Given that modal sentences are generally *a priori*, a linguistic treatment of modality became natural. Relative to a theory or

⁵¹ Different positivist theories have different commitments about the sense in which analytic / *a priori* posits can be ‘given up’. While Reichenbach can be read as claiming that one and the same sentence is *a priori* relative to one theory and *a posteriori* relative to another, Carnap is better represented as claiming that moving to new analytic posits involves a change in meaning. Also note that not all positivists would explicitly endorse the claim that *apriority*, analyticity and necessity are co-extensional. Ayer and Carnap are clear examples of positivists who do. (See sections 1.2 and 1.3 below.)

framework, the necessary sentences were taken to be all and only those that were analytic.

Logical positivism, along with its linguistic theory of necessary truth, remained popular up until the middle part of the 20th century. At this point however, the movement came under attack, leading to a change in philosophical orthodoxy which included a move away from positivism and LMC. On the one hand, the positivists failed to achieve some of their own stated goals. Perhaps most prominently, the attempt to create an adequate verificationist criterion of meaning was unsuccessful. On the other hand, positivist presuppositions were critiqued from a number of sources. Quine's critique of analyticity in 'Truth by Convention', 'Two Dogmas of Empiricism' and 'Carnap and Logical Truth' was influential in a widespread rejection of the analytic / synthetic distinction.⁵² Later, the work of Kripke and Putnam in the philosophy of language led to the adoption of semantic views that appeared to be in conflict with central claims made by positivist linguistic theories.⁵³ The next sections will outline the versions of LMC endorsed by Ayer and Carnap, as well as the critiques that followed.

1.2 A. J. Ayer

Ayer's is perhaps the name most closely associated with the logical positivist movement. He supported a wholesale verificationism about meaning, which is articulated in his 'Language, Truth and Logic'. Broadly, the verification principle says that a sentence is meaningful if and only if it is either a) tautological, or b) in principle verifiable on the basis of empirical observation. More precisely, Ayer argues that a sentence is in principle verifiable if some 'experiential proposition' can be deduced from it in conjunction with a set of premises when that proposition cannot be deduced from the set of premises alone.⁵⁴ An experiential proposition here is defined as a proposition that makes an assertion about some actual or possible observation. If a sentence is non-tautological and fails to meet

⁵² W.V. Quine, 'Truth by Convention,' in *Ways of Paradox and Other Essays* (New York: Random House, 1966) pp.70-99 W. V. Quine, 'Two Dogmas of Empiricism,' *The Philosophical Review* Vol. 60, No. 1 (1951): pp.20-43, W. V. Quine, 'Carnap and Logical Truth,' *Synthese* Vol. 12, No. 4, (1960): pp.350-374.

⁵³ Saul Kripke, *Naming and Necessity*, 2nd ed. (Malden: Blackwell Publishing, 1981), Hilary Putnam, 'Meaning and Reference,' *The Journal of Philosophy* Vol. 70, No. 19 (1973): pp.699-711, Hilary Putnam, 'The Meaning of "Meaning",' in *Mind, Language and Reality, Philosophical Papers, Volume 2*, (Cambridge: Cambridge University Press, 1975), pp.215-271.

⁵⁴ Ayer, *Language, Truth and Logic*, pp.38-39. Ayer recognised that this renders any sentence whatsoever meaningful according to the verification principle, since any experiential proposition E can be deduced from any sentence S in conjunction with 'If S then E', when 'E' cannot be deduced from 'If S then E' alone. This renders S meaningful on Ayer's criterion. In the introduction of the second edition of *Language, Truth and Logic* he amends his verification principle in light of this, restricting the kinds of sentences that can be conjoined with the sentence of interest to deduce the experiential proposition. Nonetheless, it is now widely accepted that attempts to produce a plausible verificationist criterion of meaning have failed.

Ayer's criterion for verifiability, there can be no empirical observation relevant for determining its truth, and it therefore lacks meaning on his view.⁵⁵ Ayer considers sentences of this kind to be 'pseudo-sentences' and argues that many of the assertions made in traditional metaphysics lack meaning in this way. It is clear then that Ayer takes seriously the divide between empirical and definitional posits discussed in the previous section; all meaningful sentences are either tautological or empirical in nature.

What then of the tautological sentences? Ayer treats *being tautological* as the same property had by sentences as *being analytic*. In order to gain a grip on Ayer's account of what it takes for a sentence to be analytic it is useful to consider some of the phrases he uses. He says of the analytic:⁵⁶

- '...a proposition is analytic if it is true solely in virtue of the meaning of its constituent symbols, and cannot therefore be either confirmed or refuted by any fact of experience.' (p.16)
- '...the reason why these propositions cannot be confuted in experience is that they do not make any assertion about the empirical world, but simply record our determination to use symbols in a certain fashion.' (p.31)
- (Of the analyticity of mathematics and logic) '...we cannot abandon them without contradicting ourselves, without sinning against the rules which govern the use of language, and so making our utterance self-stultifying.' (p.77)
- '...a proposition is analytic when its validity depends solely on the definitions of the symbols it contains, and synthetic when its validity is determined by the facts of experience.' (p.78)
- 'And this applies to all analytic propositions. They none of them provide any information about any matter of fact. In other words, they are entirely devoid of factual content. And it is for this reason that no experience can confute them.' (p.79)

These quotes make clear that for Ayer, analytic propositions are definitional in nature, and are devoid of factual content; they do not depend for their truth on any extra-linguistic facts. They are also treated by Ayer as conventional, as indicated by his assertion that they 'simply record our determination to use symbols in a certain fashion.'

Further analysis suggests that Ayer supported the idea that analytic sentences are true necessarily, and what's more, that they *owe* their necessity to their analyticity. He provides as an example the sentence 'A material thing cannot be in two places at once'

⁵⁵ Ibid, p.35.

⁵⁶ In text page numbers in the following paragraphs refer to Ayer's *Language, Truth and Logic*, 2nd ed.

(p.58). He says of this sentence that it is ‘linguistic’ rather than empirical and accepts that it expresses a necessary proposition, saying, ‘...it is necessary only because we happen to use the relevant words in a particular way’ (p.58). Later, he refers to propositions’ analyticity as ‘the sole ground of their necessity’ (p.84).⁵⁷ For Ayer, a linguistic approach to modality goes hand in hand with the rejection of the synthetic *a priori*. He says, ‘For while it is true that we have *a priori* knowledge of necessary propositions, it is not true, as Kant supposed, that any of these necessary propositions are synthetic. They are without exception analytic propositions, or, in other words, tautologies’ (p.84).

Ayer’s writing gives us insight into the kind of linguistic theory of modality he endorsed. He clearly argues that all *a priori* and necessary sentences are analytic. What’s more, both *apriority* and necessity are explained by analyticity. He also indicates a number of features that are had by analytic or ‘tautological’ sentences, and therefore by necessary ones. For example, they are definitional, conventional and independent of extra-linguistic facts. Unfortunately, however, Ayer does not offer an explicit theory of how conventional linguistic practices come to determine which sentences are analytic and which are not. For this reason, while it is clear that Ayer takes all and only necessary sentences to be analytic sentences, we are unable to establish much more detail for his version of LMC.

Nonetheless, Ayer’s positivist commitments suggest he would have considered his theory to satisfy some of the desiderata established for LMC in the introduction. In particular, Ayer would have embraced the value of providing an empiricist explanation of our modal knowledge. Indeed, doing so was a core project of the positivist movement in which he was a key player. Ayer’s belief that *a priori* knowledge can only be explained if sentences known *a priori* are tautological indicates his suspicion of rationalist epistemology. It is less clear that Ayer would have embraced the desiderata of metaphysical naturalism, parsimony or reductionism. In fact, unless claims about the relative parsimoniousness of theories, or about what reduces to what, are treated as analytic, they are just the kind of metaphysical claims of which Ayer would have been suspicious.

1.3 Rudolf Carnap

Like, Ayer’s, Carnap’s LMC centred on the claim that all and only necessary sentences are analytic sentences. Unlike Ayer, however, Carnap established a detailed theory of

⁵⁷ Nowadays we would be more careful to distinguish the necessity of a sentence from that of a proposition. (This distinction is of great importance for LMC, as we will see in chapter 5 of this thesis.) In Ayer’s writing, however, the content of a sentence is not clearly distinguished from the sentence itself.

what it takes for a sentence to be analytic in a language. Carnap's account of analyticity changed over time, beginning with a purely syntactic account in 'The Logical Syntax of Language', and evolving to a semantic account in 'Meaning and Necessity'. This semantic account was supplemented further in his 'Meaning Postulates' and 'Empiricism, Semantics and Ontology'.⁵⁸

The earlier syntactic theory of analyticity has in common with the later view that which sentences qualify as analytic is *relative* to the language in which they occur. In section 17 of his 'The Logical Syntax of Language', Carnap formulates his 'principle of tolerance', saying that 'it is not our business to set up prohibitions, but to arrive at conventions' and, 'in logic there are no morals'.⁵⁹ The idea expressed in the principle of tolerance is that the non-empirical part of a theory, which includes logic, is not a matter for discovery but instead is determined purely by the conventionally specified rules of the language. Which sentences are analytic is up to us as the speakers of the language. As noted above, analyticity in the 'Logical Syntax' is defined syntactically. The syntax of a language is given by a set of 'formation rules' determining which strings of symbols (sentences) are permissible, and a set of 'transformation rules' determining when one sentence can be derived from another sentence.⁶⁰ Carnap defines a notion of logical consequence which tells you when one sentence is derivable from another given the rules of a language. A sentence is analytic when it is a consequence of any sentence whatsoever.⁶¹

It is only later, when he develops his semantic theory of analyticity in 'Meaning and Necessity', that Carnap comes to treat necessity and analyticity as the same property. He offers his 'L-truth' as an explicatum for 'what Leibniz called necessary truth and Kant called analytic truth'.⁶² Carnap's description of analyticity, his explicandum, is 'truth based on logical reasons or meaning alone,' independent of 'the contingency of facts.'⁶³ As such, Carnap's account of L-truth is intended as an explication of analyticity: his aim is to make this concept precise. In order to do so, he makes use of the notion of a 'state description', which is defined as a class of sentences that contains for every atomic sentence expressible in a language either it or its negation and not both.⁶⁴ If a state description contains a sentence, it is treated as true at the state description. If a state description contains the negation of a sentence, it is false at that state description.

⁵⁸ Rudolf Carnap, 'Empiricism, Semantics and Ontology,' *Revue Internationale de Philosophie* Vol. 4, No. 11 (1950): pp.20-40 and Rudolf Carnap, 'Meaning Postulates,' *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* Vol. 3, No. 5 (1952): pp.65-73.

⁵⁹ Carnap, *The Logical Syntax of Language* pp.51-52.

⁶⁰ *Ibid.*, p.2.

⁶¹ *Ibid.*, p.39.

⁶² Carnap, *Meaning and Necessity*, p.8.

⁶³ *Ibid.*, p.10.

⁶⁴ *Ibid.*, p.9.

Complex sentences will also be true or false at each state description, and their truth values are determined as you would expect by those of the atomic sentences and the rules laid out in the classical truth tables. For example, if ‘S’ is true at a state description, ‘ \sim S’ is false. If ‘S’ and ‘T’ are both true at a state description, ‘S & T’ is true, and so on.⁶⁵

On Carnap’s view, there will be a state description for every maximal class of sentences that can all be true together in the language under consideration. That is to say, for each maximal, consistent class of sentences, there will be a state description at which all and only those sentences are true. For this reason, state descriptions play the role of what we refer to now as ‘possible worlds’. In fact, Carnap explicitly states that a state description gives a ‘complete description of a possible state of the universe’.⁶⁶ Using the notion of a state description, we come to a definition of L-truth: according to Carnap, a sentence is L-true if and only if it is true at every state description. Given that L-truth is intended as an explicatum for analyticity and necessity, it also holds on Carnap’s account that a sentence is analytic and necessary if and only if it is true at every state description.

Based on the rules for truth at a state description described above we can already see that some sentences count as L-true on Carnap’s view. Given how a state description is defined, for example, the law of the excluded middle must be true necessarily. Since every state description contains either ‘S’ or ‘ \sim S’, and ‘ $S \vee \sim S$ ’ is true at a state description so long as either ‘S’ or \sim S’ is true there, ‘ $S \vee \sim S$ ’ will be true at every state description. In fact, all the laws of classical propositional logic will be true at every state description and therefore necessary. Carnap also notes, however, that there will be cases of necessary truths that are not what we ordinarily classify as logical truths. For example, since according to Carnap ‘human’ and ‘rational animal’ are synonymous, ‘All humans are rational animals’ is L-true.⁶⁷ Carnap explicitly states that some sentences of this nature are L-true, but he does not elaborate in ‘Meaning and Necessity’ on what makes it the case that these sentences are true at every state description.⁶⁸ While we are told that analyticity and necessity are both equivalent to L-truth, and that L-truth is truth at every state description, the account cannot be complete until we are told exactly *which* truths are true at every state description, in addition to the logical ones.

⁶⁵ Ibid, p.11.

⁶⁶ Ibid, p.9.

⁶⁷ Ibid, p.9.

⁶⁸ Carnap does say that the sentence ‘All humans are rational animals’ is L-true because it can be ‘established without referring to facts by merely using the semantical rules of S_1 , especially 1-2’. (*Meaning and Necessity*, p.15) Here, S_1 is the language Carnap is discussing, and 1-2 is a set of rules of designation noting that ‘human’ and ‘rational animal’ ‘mean the same’. This suggests that synonymy has a role to play in determining what is true at every state description, but no further elaboration is provided.

This gap is filled in Carnap's later papers 'Empiricism Semantic and Ontology' and 'Meaning Postulates'. In the latter paper Carnap argues that *we make it the case* that certain non-logical sentences are true in every state description. For example, we make it the case that 'All bachelors are unmarried' is true at every state description and therefore necessary, by laying down a meaning postulate: $(\forall x)(Bx \rightarrow \sim Ux)$. By doing so, we guarantee that for every state description and for every constant *a* in the language, either '*Ba*' and ' $\sim Ua$ ' will both be true, or '*Ba*' will be false. Importantly, these postulates are stipulated according to Carnap, not discovered. He says of the rule cited above, for example, that it is 'not a matter of knowledge but of decision.'⁶⁹ Which sentences are true in every state description will therefore be determined by the rules for state descriptions combined with the meaning postulates. This story is supported by the arguments made in 'Empiricism, Semantics and Ontology', where Carnap expands on the notion of a linguistic framework by defining it is a system of language that can be introduced to describe a new domain. A framework comes with linguistic rules and meaning postulates that determine what is analytic according to the framework. For example, when introducing the framework of numbers, the rules will make it the case that sentences such as 'Five is a number' are analytic.⁷⁰

In summary, Carnap's LMC treats the necessary (analytic) truths as those that hold in every state description, which is itself determined by stipulated meaning postulates. A language will contain rules determining when one truth can be derived from another (such as the truth tables for the logical connectives), plus meaning postulates, which are stipulated. These will determine which sentences are true at which state description and therefore which sentences are true at all state descriptions, or in other words, are L-true. Since L-truth is equivalent to analyticity and necessity, we get the result that the modal status of a sentence is in fact a matter of *postulation*; it is determined by the meaning postulates that by convention, we have stipulated to hold.

Like Ayer, therefore, Carnap endorses a linguistic theory according to which all necessary sentences are analytic. In fact, he treats the properties of 'being analytic' and 'being necessary' as equivalent. Unlike Ayer, however, Carnap has a detailed theory of when a sentence gets to qualify as analytic. Carnap may well have embraced the epistemological desiderata set up in the introduction. He wishes to avoid reliance on rationalist epistemology, and his commitment to empiricism is made clear in a number of places. For example, in 'Empiricism, Semantics and Ontology' Carnap claims that all meaningful statements are either empirical or determined to be true or false by the rules

⁶⁹ Carnap, 'Meaning Postulates', p.68.

⁷⁰ Carnap, 'Empiricism, Semantics and Ontology', pp.21-25.

of the linguistic framework.⁷¹ As a key logical positivist, this guiding principle is central in Carnap's treatment of necessity as equivalent to analyticity. However, this principle also underlies a potential suspicion of the metaphysical desiderata set out in the introduction. Factors such as reductionism and parsimony would not be treated by Carnap as virtues of framework in their own right. Nonetheless, they may be thought to contribute to pragmatic considerations that warrant the choice of one framework over another.

1.4 W. V. Quine

Quine was a critic of the 20th Century empiricist movement from within. In three central papers, 'Truth by Convention', 'Two Dogmas of Empiricism' and 'Carnap and Logical Truth', Quine argues that the notion of truth by convention is incoherent, and that we ought to reject the analytic / synthetic distinction altogether. His criticisms are levelled in particular at analyticity as characterised by Carnap. If successful, Quine's case against analyticity has significant implications for LMC; if there is no special class of sentences that count as analytic, LMC has no way of distinguishing the necessary sentences from the contingent ones, the possible from the impossible, and so on. What's more, Quine's critique of analyticity has been highly influential, and is widely credited as decisive against analyticity.⁷²

Quine's attack on analyticity begins in 'Truth by Convention'. As noted above, being true by convention was a property that many of the positivists associated with analyticity. This is certainly the case for both Ayer and Carnap; Ayer treats analytic sentences as made true by stipulation, and for Carnap it is meaning postulates that determine which sentences are true in every state description. Quine's stated aim in 'Truth by Convention' is to 'question the sense' of the notion of a sentence's being true as a matter of convention.⁷³ He argues that stipulated definitions are incapable of grounding the truth of a sentence; they are only capable of expressing a sentence that's already true in a new way. For example, say that '1km' is stipulated to mean that same as '1000m'. According

⁷¹ Ibid, pp.22-23.

⁷² For example, J. A. Fodor and E. Lepore, 'Why Meaning (Probably) Isn't Conceptual Role,' *Philosophical Issues* Vol. 3 (1993) p.27 note that 'these days, practically everybody thinks that the a/s [analytic / synthetic] distinction is unprincipled.' They consider commitment to this distinction to be sufficient reason for rejecting a theory of meaning. And, Paul Boghossian, 'Analyticity Reconsidered,' *Noûs* Vol. 30, No. 3 (1996) p.360. notes 'This is what many philosophers believe today about the analytic / synthetic distinction: In his classic early writings on analyticity... Quine showed that there can be no distinction between sentences that are true purely by virtue of their meaning and those that are not.' See also Hilary Putnam, 'The Analytic and the Synthetic,' in *Mind, Language and Reality: Philosophical Papers, Volume 2*, pp.33-69.

⁷³ Quine, 'Truth by Convention', p.70.

to Quine, '1km = 1000m' is not true by definition. Rather, it expresses an antecedently true self-identity: '1000m = 1000m'. So, the first sentence is transformable into a logical truth by swapping synonyms for synonyms, but it owes its truth to whatever made the original logical sentence true. Unless the logical sentence '1000m = 1000m' is true by convention, '1km = 1000m' isn't either.⁷⁴

The remainder of the paper deals with the question of whether or not logic itself can be true by convention. Quine suggests that one way for logic to be true by convention would be if we were to stipulate the truth values that are to be had by logical sentences. In effect, this is the strategy adopted by Carnap. However, Quine argues that this strategy faces a dilemma. On the one hand, particular logical sentences are infinite in number, so it would be impossible to stipulate truth values for each one individually. (Assuming an infinite number of constants for sentences, we cannot stipulate the truth of ' $S \rightarrow S$ ', ' $T \rightarrow T$ ', and so on for all the logical sentences.) On the other hand, truth values for particular logical sentences could be derived from general, stipulated logical truths, for example, via truth tables. (For example, we could stipulate that all sentences of the form $\phi \rightarrow \phi$ are to be true.) However in order to derive the particular logical truths from the general ones, logic would need to be used, generating an infinite regress.

In 'Two Dogmas of Empiricism' Quine takes a weaker notion of analyticity as his target. Some believers in analyticity do not require that there are sentences owing their truth to convention alone. Those falling into this camp want no more than what Quine himself appeared to countenance in 'Truth by Convention': that some sentences are analytic in the sense that they are transformable into a logical truth by substituting synonyms for synonyms.⁷⁵ Quine takes aim even at this form of analyticity in 'Two Dogmas of Empiricism'. His attack is two-pronged. Firstly, he argues that the notion of analyticity at issue cannot be explicated in a non-circular way. In order to specify when sentences are analytic in the sense outlined we would require an account of 'synonymy', a notion that Quine argues is no better understood than analyticity itself. More generally, Quine claims that semantic notions such as analyticity and synonymy are interdefined in such a way that none can be independently characterised, and as a result, that all should be rejected. This part of Quine's critique was taken up again in his paper 'Carnap and Logical Truth', where he argues that if an independently specified account of analyticity cannot be given, to say that a sentence is analytic amounts to little more than saying that it appears obviously true. However, he says, mere obviousness is unable to play the central role

⁷⁴ Ibid, p.71.

⁷⁵ This definition of analyticity is widely cited. Bohossian, ('Analyticity Reconsidered' p.366) attributes it to Frege. See section 3 of Gottlob Frege, *The Foundations of Arithmetic: A Logico-Mathematical Enquiry into the Concept of Number*, trans. J. L. Austin, 2nd ed (Oxford: Basil Blackwell, 1953).

assigned to analyticity by Carnap and others. Most relevantly for LMC, the mere obviousness of a sentence cannot explain its necessity. This prong of Quine's attack is rejected by some as failing to achieve its purpose, since many meaningful philosophical concepts are similarly interdependent.⁷⁶

Nonetheless, Quine's second main line of argument in 'Two Dogmas of Empiricism' has been extraordinarily influential.⁷⁷ In the final section of the paper, Quine argues persuasively for a holistic theory of verification. He argues that there is no distinction to be made in scientific theories between theoretical posits that are purely definitional or stipulative, and those that are up for empirical refutation or confirmation. Rather, he argues, scientific theories face evidence as a whole.⁷⁸ If the evidence does not fit with the theory, the theory must be adjusted to fit the evidence; but *any* theoretical postulate can in principle be revised. While some theoretical posits are less likely to be revised than others, none are altogether immune. This implies that sentences cannot meaningfully be divided, as both Ayer and Carnap suggest, into those that are empirically testable (the synthetic sentences) and those that are true in virtue of meaning (the analytic sentences). Quine's conclusion is that the analytic / synthetic distinction ought to be rejected altogether.

If Quine is right, there are no sentences that owe their truth to convention alone. What's more, there is no interesting distinction between analyticity and syntheticity, even in the sense of being transformable into a logical truth by substituting synonyms for synonyms. This conclusion had significant consequences for the positivist movement in general, which relies on the notion of analyticity in a number of ways. Firstly, if no sense can be made of the notion of analyticity, the positivists cannot use it to explain *a priori* knowledge in the context of an empiricist epistemology. And, most importantly for us, any theory that treats necessity as determined by or equivalent to analyticity, including the versions of LMC endorsed by Ayer and Carnap, must be rejected if there is no such thing as analyticity. If Quine is right, a sentence's necessity cannot be explained by its analyticity, since no sentence has the property of analyticity.

⁷⁶ See, for example Boghossian, 'Analyticity Reconsidered', Paul Boghossian, 'Analyticity and Conceptual Truth,' *Philosophical Issues* Vol. 5 (1994): pp.117-131, David J. Chalmers, 'Revisability and Conceptual Change in "Two Dogmas of Empiricism",' *Journal of Philosophy* Vol. 108, No. 8 (2011): pp.387-415.

⁷⁷ Chalmers' 'Revisability and Conceptual Change' and Putnam's 'The Analytic and the Synthetic' both cite Quine's argument from holism as influential in widespread rejection of analyticity.

⁷⁸ Note that this objection may not apply to all positivist views. For example, Reichenbach's relative *a priori* appears to allow that an *a priori* posit can be given up without a change in meaning.

1.5 Saul Kripke

The relationship between the notions of necessity and *apriority* is central in Kripke's 'Naming and Necessity'. One of the most influential features of the book is Kripke's argument, now widely accepted, that some sentences are true necessarily, but knowable only *a posteriori*. Kripke argues early on in the book that the notions should be distinguished in principle; after all, necessity is a metaphysical notion, to do with what can *be*, and *apriority* is an epistemological notion, to do with what we can *know*.⁷⁹ Later, however, Kripke argues the two notions are not just different in principle but also fail to be co-extensional in fact; he argues that there are at least some sentences that are necessary but are not knowable *a priori*. Among them Kripke includes identity statements between names, for example 'Hesperus is Phosphorus' and between natural kind terms, for example 'Water is H₂O', as well as some sentences ascribing properties to individuals and kinds.⁸⁰ The mere existence of necessary *a posteriori* truths is a threat to logical positivist views. Recall that for logical positivists such as Ayer, the analyticity of a sentence guarantees both its necessity and its *apriority*. And moreover, the only way for a sentence to be either necessary or *a priori* is by being analytic. In other words, analyticity is necessary and sufficient for both necessity and *apriority*. This means that necessity and *apriority* mutually guarantee each other too, which is straightforwardly incompatible with the existence of necessary *a posteriori* truths.

Of course, the core claim of LMC is that necessity is guaranteed by analyticity, and the existence of the necessary *a posteriori* is not incompatible with this claim considered in isolation. A quick fix to LMC's overall picture that preserved the core claim would be to deny that analyticity guarantees *apriority*; perhaps some sentences are analytic and therefore necessary, but knowable only *a posteriori*. Kripke's necessary *a posteriori* sentences, such as 'Water is H₂O', might be like this. However, this quick fix conflicts with the motivations of the logical positivist position. After all, one of the core tenets of logical positivism was that all true sentences belong to one of two kinds: the analytic ones, that are knowable *a priori*, and the empirical ones, that are knowable only *a posteriori*. The quick fix involves accepting that some sentences fall into a third category: analytic and *a posteriori*. The existence of this category would require explanation in terms agreeable to broader positivist principles. The reason the positivists took analyticity to entail *apriority* was that having the features associated with analyticity (truth by convention, independence from facts, and so on) was thought to be sufficient for having the features associated with *apriority* (knowability independent of experience). The quick

⁷⁹ Kripke, *Naming and Necessity* pp.34-38.

⁸⁰ *Ibid.*, pp.97-105, pp.116-129.

fix suggested above would require a principled explanation of why analyticity sometimes fails to guarantee *apriority* and other times succeeds.

What's more, it's difficult to see how the sentences that Kripke claims are necessary *a posteriori* could be viewed as analytic by the positivists discussed in this chapter. As we saw above, a sentence is analytic for Ayer when its truth is based on stipulated definitions. For Carnap, a sentence is analytic when it's true in all state descriptions, and this is also a matter of stipulation. But sentences such as 'Hesperus is Phosphorus' or 'Water is H₂O' are not plausibly true due to stipulated definitions. After all, in order to work out if they are true we have to go and investigate the world; mere analysis of our own language won't be enough. To make this point clearer, consider the following science fiction example. Say that our best current astronomical charts tell us that star A is distinct from star B. Suppose that in the future, however, astronomers discover that they are one and the same; there's just one star where we thought there were two. Currently, we believe that the sentence 'Star A is star B' is false. In the future, we discover that it's true. What's more, as an identity statement between names, we'll have discovered that it's *necessarily* true, according to Kripke. Given our beliefs now, however, it is absurd to suggest that the truth of 'Star A is star B' is stipulated or conventional. There is clearly no linguistic convention in place according to which 'Star A' and 'Star B' are to apply to the same objects. If there were such a convention, we'd be able to work out that 'Star A is Star B' is true without waiting for the observant astronomers' discovery.⁸¹

A second quick fix must also be rejected: LMC should resist the temptation to deny that necessary *a posteriori* sentences exist. Given that sentences like 'Water is H₂O' and 'Hesperus is Phosphorus' are clearly *a posteriori*, the way to resist Kripke's argument would be to deny that they are necessary. One way to do so would be to give up on the necessity of identity, thereby falling foul of Leibniz's Law. According to Leibniz's Law, if object A is identical to object B, A and B must share all of their properties. So if water is identical to H₂O, water must share all the properties of H₂O. However, if water and H₂O are only *contingently* identical, water has the property of being necessarily identical to water, but H₂O lacks that property. The second way to deny the existence of the necessary *a posteriori* is to deny that terms like 'water' pick out the same thing in every situation in which they refer at all, which is a key plank of Kripke's argument. This option will also be rejected, for reasons to be discussed shortly.

In large part, the deeper source of the conflict between Kripke and the positivist theories of *apriority* and necessity comes from different approaches to the semantics of names and

⁸¹ Essentially, this case mirrors the real life example of 'Hesperus is Phosphorus.'

natural kind terms. Kripke's rejection of the kind of semantic view that went hand in hand with linguistic theories of modality forms a significant part of his argument for the necessary *a posteriori*. To make this conflict clear, it will help to outline Kripke's view of the semantics of names and how it differs from Carnap's. A large part of 'Naming and Necessity' is devoted to arguing against what Kripke calls the 'Frege-Russell' view of meanings of names.⁸² This is the view that the meaning of a name is not just its referent; instead, these theories say that along with its referent, a name also has a descriptive meaning. For example, the meaning of 'Aristotle' might be 'the teacher of Alexander' and the meaning of 'Hesperus' might be 'the evening star'. Kripke argues that this view is wrong for a number of reasons. For one thing, if 'Aristotle' means the same thing as 'the teacher of Alexander', you would expect 'Aristotle was the teacher of Alexander' to be a necessary truth. But it seems that Aristotle could easily have chosen not to teach at all, or could have died before he had a chance to teach. As such, 'Aristotle was the teacher of Alexander' is contingent. Secondly, if names were synonymous with descriptions, you would expect people who counted as 'knowing the meaning' of those names to know that the thing referred to by the name had the properties expressed by the description. For example, someone who knew the meaning of 'Aristotle' must know that Aristotle taught Alexander. However, it seems that this is not the case either. Many people probably know nothing more about Aristotle than that he was a philosopher, and yet we do not accuse them of failing to grasp the meaning of the name.⁸³

Kripke argues that the Frege-Russell view should be rejected in favour of what he calls a 'Millian' conception of the meaning of names; a name should be taken to simply have its referent as its meaning, rather than a referent plus a description, or any other non-extensional meaning. On this view, a name is a 'mere tag'. So, the meaning of 'Aristotle' is just the man himself, and the meaning of 'Hesperus' is just the planet Venus. Kripke argues that this Millian conception of names motivates the claim that names are rigid designators.⁸⁴ He argues that a name picks out the same individual in every world at which it refers at all. So, if 'Aristotle' picks out Aristotle in the actual world, it will pick out Aristotle in every world, rather than say Plato or Alexander in other worlds. According to Kripke, the same applies to kind terms like 'water'. If names and kind terms are rigid designators, it follows straightforwardly that identity statements connecting them will be true necessarily. If 'Hesperus' and 'Phosphorus' co-refer, for example, they will co-refer in any world in which either refers at all, and so 'Hesperus is Phosphorus' must be necessary if true. This suggests another way for proponents of LMC to deny that

⁸² Ibid, p.27.

⁸³ Ibid, p.57.

⁸⁴ Ibid, pp.48-49, pp.127-144.

sentences like ‘Hesperus is Phosphorus’ and ‘Water is H₂O’ are true necessarily; they could deny that names and kind terms designate rigidly. However, to do so would be ill-advised. It seems wrong to suggest ‘Aristotle’ picks out Aristotle in some circumstances, but someone else in other circumstances – whoever happens to be the teacher of Alexander, for example. Rather, when we consider how ‘Aristotle’ might apply in counterfactual scenarios, we are considering what might be true of *Aristotle himself*.⁸⁵ Intuitive evidence for the rigid designation of kind terms like ‘water’ can be found in Putnam’s Twin Earth thought experiment, discussed in section 1.6

Carnap’s view of the semantics of names is not a version of descriptivism.⁸⁶ Nonetheless, it is similar in that it takes names to have two kinds of meaning: an intension and an extension. What’s more, Carnap’s account of name intensions results in the conclusion that sentences such as ‘Hesperus is Phosphorus’ will be contingent, rather than necessary. Recall that for Carnap, both analyticity and necessity are analysed as L-truth, and a sentence is L-true when its truth is guaranteed by the stipulated rules of the language. For Carnap, this is when it is true in every state description. Carnap uses this notion of L-truth in his account of when two linguistic expressions are synonymous, or in his terminology ‘L-equivalent’.⁸⁷ For Carnap, two expressions are L-equivalent when they express the same intension. In the case of names, the relevant intensions are what Carnap calls ‘individual concepts’.⁸⁸ So, two names will be L-equivalent when they express the same individual concept. Importantly, this condition is fulfilled for Carnap when and only when an identity sentence between the names is L-true. For example, if ‘A’ and ‘B’ are names, they will express the same intension, and therefore be L-equivalent, if and only if the sentence ‘A is B’ is L-true. This means that for Carnap, the names ‘Hesperus’ and ‘Phosphorus’ will both be associated with an individual concept, and these individual concepts will be identical if and only if ‘Hesperus is Phosphorus’ is L-true. However, ‘Hesperus’ and ‘Phosphorus’ do not express the same individual concept, and ‘Hesperus is Phosphorus’ is not L-true. As argued above, it is implausible given its *a posteriori* status that the sentence is true due to stipulated definitions alone.

For Carnap, the stipulated linguistic rules come first; the conventional matter of which sentences are L-true determines whether two names are synonymous. And, an identity statement using names in both positions is only necessary when the names are synonymous. Given that analyticity also guarantees *apriority*, this means that there will

⁸⁵ Note that the relevant sense of ‘how “Aristotle” might apply in different situations’ is the sense in which the name ‘Aristotle’ *as used by us* applies. We are not considering how a different population might have used the same sequence of letters.

⁸⁶ See Carnap, *Meaning and Necessity* pp.39-42.

⁸⁷ *Ibid*, pp.13-16.

⁸⁸ *Ibid*, pp.39-42.

be no necessary *a posteriori* identity sentences connecting names. By contrast for Kripke, any true identity sentence with names in both positions will be true necessarily. Given that often we don't know when two names co-refer, these particular necessary truths will often be *a posteriori*. If Kripke rather than Carnap is right about the semantics of names and the necessary truths that result, the consequence for the positivist theory of modality is momentous. Analyticity in the sense of Carnap or Ayer cannot in general be responsible for necessity, since mere co-reference of names will be sufficient for the necessity of identity sentences connecting those names, even though in many cases those sentences will fail to meet the conditions for analyticity set out by the positivists. What's more, it is now widely accepted that Kripke was right that names and kind terms are rigid designators, and that as a result, some sentences are necessary and *a posteriori*. In order to do justice to Kripke's philosophical breakthrough, room must be made for these phenomena within a modern version of LMC.

1.6 Hilary Putnam

Around the same time as Kripke's 'Naming and Necessity' lectures, Hilary Putnam was also putting forward semantic arguments that threatened LMC. Putnam's central contribution was to argue against semantic internalism: the view that the mental states of an individual fully determine the meanings of her terms. While LMC is not explicitly committed to internalism, parallel arguments can be constructed that suggest meaning is not determined by convention in the way required for analyticity to explain necessity. What's more, the arguments made by Putnam also provide an alternative route to rigid designation and the necessary *a posteriori*, which as we've seen, threatens LMC in itself.

Putnam's case against internalism is made using his famous Twin Earth thought experiment, as presented in his paper 'The Meaning of "Meaning"'. According to the story, there exists in another part of the universe a 'Twin Earth'.⁸⁹ This planet is just like Earth in almost every respect; it is an almost exact duplicate of Earth. In particular, it contains copies of all the people on Earth, precise even in their brain states and behaviour. The only difference between the two planets is the chemical composition of the stuff referred to as 'water' by inhabitants. While on Earth, 'water' refers to a substance composed of H₂O molecules, on Twin Earth it refers to a substance with a complicated chemical formula abbreviated by 'XYZ'. Importantly, the two substances are functional duplicates; they are both used for drinking, fall from the skies as rain, fill the lakes and

⁸⁹ Putnam, 'The Meaning of "Meaning"' pp.139-144.

oceans, and so on. Despite this, Putnam argues that ‘water’ has a different meaning on each planet. Specifically, its referent is different: on Earth it picks out H₂O, and on Twin Earth it picks out XYZ. Nonetheless, by hypothesis my duplicate on Twin Earth has the same mental states as me; when she says ‘This is water’, her mental states are the same as mine when I say ‘This is water’. Given that our mental states are the same but the referents of our terms are different, Putnam concludes that mental states don’t fully determine meaning. A similar argument can be constructed when it comes to the role conventions play in determining meaning at each planet. In Putnam’s story, the only difference between the two planets is the chemical composition of the substance referred to as ‘water’. That means that any linguistic conventions adopted by each community must be the same. As such, any conventional aspect of the meaning of ‘water’ must be the same for both communities.⁹⁰

An important feature of Putnam’s story is that we judge that ‘water’ *has a different meaning on Twin Earth*. We do not judge that ‘water’ as used by us means the same thing as ‘water’ as used by the Twin Earthians, and that both H₂O and XYZ are varieties of water. Putnam argues that the Twin Earth case suggests that our term ‘water’ *only* refers to H₂O; nothing with a different chemical composition, despite its functional similarity, counts as water.⁹¹ Putnam’s conclusion is that in cases like this, the external world plays a part in determining the reference of our terms in various actual and counterfactual scenarios. In particular, sameness relations holding between entities in the world help to determine the conditions under which a term correctly applies or fails to apply. For example, say I introduce the term ‘water’ by pointing to a glass of liquid and saying ‘This liquid is water’. According to Putnam, it is a matter of language-independent fact which liquids constitute the same liquid as the one I ostended. In this case, it will be all and only those liquids composed of H₂O molecules. The Twin Earth thought experiment suggests that ‘water’ applies only to stuff that’s the same as the stuff we actually use the term to pick out; ‘water’ designates rigidly. And, it’s a fact independent of language or convention that substances are the same as water if and only if they are composed of H₂O molecules. This fact about what constitutes the same liquid therefore combines with the fact that ‘water’ is a rigid designator to determine what counts as a correct application of ‘water’ for me, and the conditions under which my sentence ‘This is water’ is true.

⁹⁰ This parallel only holds if we are internalists about the content of the conventions themselves. This assumption is plausible, however, given the role of conventions. Plausibly, the role of convention is to govern human behaviour. If so, communities that behave identically cannot be said to have different conventions in place. But by stipulation, the communities on Earth and Twin Earth do behave identically.

⁹¹ Putnam, ‘The Meaning of “Meaning”’ pp.146-152.

If Putnam's example, as he suggests, shows that 'water' is a rigid designator, we have a new route to the necessary *a posteriori*. If the English term 'water' refers to H₂O in every possible circumstance, then 'Water is H₂O' will be true necessarily. We already know that the necessary *a posteriori* causes trouble for LMC. Putnam's Twin Earth story helps explain why. First of all, note that while 'Water is H₂O' is true necessarily in English as spoken by Earthians, 'Water is H₂O' will be *false* in the language spoken by Twin Earthians. After all for them, 'water' doesn't refer to H₂O at all; it refers to XYZ. Furthermore, according to Putnam's argument, 'water' will refer to XYZ in all possible circumstances in the Twin Earthian language. 'Water is XYZ' will be true necessarily for Twin Earthians. As noted above, however, the conventional linguistic rules that determine (according to Ayer and Carnap) which sentences are analytic will be held fixed across Earth and Twin Earth. By hypothesis, the *only* difference between the two planets is the chemical composition of the stuff filling the lakes and oceans. Languages governed by exactly the same linguistic rules must have the same analyticities, given that analyticity is a conventional feature of language use. So, if languages governed by the same conventions can result in different necessities, necessity cannot be fully explained by analyticity. We've already seen that it's implausible that 'Water is H₂O' is analytic in English. Even if it were, however, it would have to be analytic in Twin English too; but 'Water is H₂O' isn't even true in Twin English, let alone necessary.

The message from both Kripke and Putnam when it comes to the meaning of our terms is that the external world matters. Both argue for the existence of extra-linguistic facts about what constitutes the same natural kind or individual in different circumstances. Both add that our natural kind terms and names refer rigidly in that a natural kind term picks out the same kind in all circumstances and a name picks out the same individual in all possible circumstances. The Twin Earth case helps provide intuitive evidence for this; the fact that we do not judge the watery substance on Twin Earth to be water suggests that 'water' in English only refers to stuff of the same kind as water here. This is enough for sentences like 'Water is H₂O' to be true necessarily. But what explains the necessity of this sentence is not analyticity, according to the view endorsed by Kripke and Putnam. Instead, the natural position for them to take is that it's the features of the kind referred to by 'water' that are responsible for the necessity of 'Water is H₂O'. Kripke explicitly endorses this position in his acceptance of cross-world identity relations and essences. He argues that it's a language-independent feature of the world that nothing counts as the same kind as water unless it's composed of H₂O molecules. In other words, water is *essentially* H₂O. The semantic views of Kripke and Putnam therefore go hand in hand

with a view about modality that cannot be accepted by someone who thinks that modal truth fully depends on language.

The semantic and metaphysical work of Kripke and Putnam has been extraordinarily influential; the approach to the meaning of names and kind terms they endorse is now more popular than the Fregean alternative it was intended to replace.⁹² With it, approaches to modality according to which the external world, rather than language, is the source of modal truth have also risen to prominence. The arguments made by Kripke and Putnam represent what many have considered a devastating challenge to LMC as it was articulated by the logical positivists. Modern proponents of LMC have made it a primary objective to respond to these arguments and accommodate the existence of the necessary *a posteriori* into linguistic approaches to modality. Attempts to do this will be discussed in the next chapter, and taken up again in chapter 7 when truth conditions are provided for various modal sentences, including necessary *a posteriori* ones.

1.7 Conclusion: desiderata revisited

Logical positivism represented a radical shift in thinking among philosophers, most importantly in their epistemology and in the role they took philosophy to have in knowledge acquisition. The positivists rejected the ‘pure intuition’ that Kant had taken to be the basis of synthetic *a priori* knowledge, and claimed that knowledge could be gained by two methods only: empirically, or through the logical analysis of language. The former was treated as the task of empirical scientists, and the latter as the task of philosophers. The positivists took all *a priori* knowledge to fall into the second category. If a sentence was meaningful and knowable independently of experience, it must be analytic. That is to say, it must be true due to conventions of language. As outlined in section 1.1, this approach to *apriority* led naturally to a similar approach to modality. Given that modal sentences are non-empirical, the positivists took them to have their basis in analyticity. In particular, any sentence that was analytic was also treated as necessary within a language.

The aims and motivations of the positivists were therefore closely related to the epistemological desiderata set out for LMC in the introduction. Those desiderata were that the metaphysics of modality provided must be compatible with a plausible, naturalistic and empiricist account of how modal knowledge is acquired. The positivists

⁹² Evidence that this is the case can be found in the results of a survey of professional philosophers conducted by PhilPapers in 2014. See David Bourget and David J. Chalmers, ‘What Do Philosophers Believe?’ *Philosophical Studies* Vol. 170 (2014) pp.465-500. The authors found that 28.7% of target faculty respondents thought names were Fregean, while 34.5% thought they were Millian, and 36.8% endorsed some other view.

were aiming to provide exactly such a story. They thought that if conventions of language are what determine the modal truths, then our knowledge of them can be explained by knowledge of those conventions had by competent speakers of the language. Indeed, finding an empiricist explanation of *a priori* truth, including modal truth, was perhaps the primary goal of logical positivism.

It is less clear whether positivists such as Ayer or Carnap would have embraced the metaphysical desiderata of reductionism, parsimony and metaphysical naturalism. Of course, both philosophers were highly suspicious of traditional metaphysics, which they associated with untestable, unempirical claims. If claims about theoretical virtues of theories, or about whether they instantiate those virtues are ‘metaphysical’ in the problematic sense, they would have been rejected by the positivists as meaningless. Carnap, however, may have been satisfied with the standing of theoretical virtues such as parsimony or reductionism if they were treated as pragmatic reasons for theory choice, rather than as claims about which theory is more likely to be true.⁹³ Perhaps a simpler theory is more useful for some purposes, for example.

Whether or not the metaphysical desiderata would have been embraced by the positivists, we can see that they go a long way towards meeting them. If, as the positivists suggest, modal truth can be accounted for purely in terms of linguistic conventions, we have a promising route to avoiding the need for primitive metaphysical modality in our theory. While the positivist linguistic theories seem promising when it comes to epistemological desiderata, and perhaps even metaphysical desiderata, they fall short when it comes to the final desideratum mentioned in the introduction: being able to survive Quinean and Kripkean critiques. The positivist linguistic theories of modality cannot be considered adequate as they stand due to their inability to account for the existence of necessary *a posteriori* truths. What’s more, the use of the notion of analyticity must also be defended in light of Quine’s arguments against it. The task of making room for the necessary *a posteriori* within a linguistic theory of modality has been taken up by modern theorists such as Alan Sidelle and Amie Thomasson. These theories will be discussed in depth in the next chapter, as will their viability in light of Quinean arguments.

For the most part, positivist versions of LMC will not be discussed again in detail for the remainder of this thesis. Instead, the focus will be on articulating a version of LMC that is viable in a post-Kripkean philosophical world. By showing that the view can stand up to Kripkean and Quinean challenges, I hope to demonstrate that it remains a theory of

⁹³ See Carnap, ‘Empiricism, Semantics and Ontology’ pp.22-24 for discussion of the considerations that may be taken into account when choosing whether to adopt some framework or theory.

modality that is to be taken seriously. However, as we'll see in chapters 3 to 5, LMC faces challenges on other fronts. In particular, it is in danger of commitment to a widespread conventionalism about ontology and truth that will not be attractive to modern day empiricists. The majority of the thesis will be devoted to articulating this challenge, and providing a response on behalf of LMC.

CHAPTER 2

Modern Linguistic Modal Conventionalism and the Necessary A Posteriori

In recent decades, attempts have been made to revive linguistic approaches to modality. For the most part, these modern versions of LMC have been concerned with providing ways to respond to the objections raised in the previous chapter. On the one hand, this means defending the view from Quinean criticisms of analyticity. On the other hand, it means constructing a version of LMC that can account for the existence of necessary *a posteriori* truths. This chapter will describe two recent linguistic modal theories in detail: Alan Sidelle's modal conventionalism and Amie Thomasson's modal normativism.⁹⁴ Particular attention will be paid to the account of the necessary *a posteriori* provided by each theorist. I will argue that while Sidelle and Thomasson's approach is promising, both theories rely on a notion of actuality that remains to be explained within the context of LMC. The project of doing so will be delayed until chapter 7, where an account of actual-world dependence is provided using the framework of two-dimensional semantics. Sections 2.1 and 2.2 of this chapter describe Sidelle and Thomasson's theories and identify some of their shortcomings. Section 2.3 briefly addresses Quinean objections to analyticity, including the responses given by various authors. Finally, section 2.4 sets the parameters for LMC that will be used for the rest of the thesis, by stipulating what commitments a theory must embrace in order to constitute a version of LMC.

2.1 Sidelle's modal conventionalism

Sidelle's modal conventionalism is set out in his 1989 book 'Necessity, Essence and Individuation: A Defense of Conventionalism'. In line with the positivist theories discussed in chapter 1, his central thesis is that 'necessity is nothing beyond analyticity'.⁹⁵ Specifically, Sidelle holds that all analytic sentences are necessary, and that they owe their necessity to their analyticity. Sidelle's theory has a number of important features. Firstly, he holds that the claim that modality depends on analyticity is sufficient for modality to count as *conventional*, where 'convention' is a 'catchall for mind-based contribution'.⁹⁶ He sees *realists* as the opponents of conventionalists, characterising the central theses of realism as that 'modality is a real, mind-independent feature of reality,'

⁹⁴ See Sidelle, *Necessity, Essence and Individuation*, Thomasson, *Ordinary Objects* and Thomasson, 'Modal Normativism and the Methods of Metaphysics'. Note that Thomasson at times uses 'modal conceptualism' to refer to her theory. I will use 'modal normativism' throughout.

⁹⁵ Sidelle, *Necessity, Essence and Individuation* p.2.

⁹⁶ Ibid, p.2. Sidelle explicitly acknowledges that he has little to say about the nature of conventions in his footnote 23. However, he references David Lewis, *Convention: A philosophical Study* (Cambridge, Mass: Harvard University Press, 1969) as 'the best going account of convention'.

and that ‘the truths that are necessary are so because the states of affairs they depict are, as a matter of the way the world is, quite independently of the ways we talk and think about them, necessary.’⁹⁷ For Sidelle then, modality’s dependence on analyticity guarantees that it is both conventional and mind-dependent.

Unfortunately, Sidelle does not explicitly articulate a theory of analyticity. Nonetheless, his writing makes clear that he holds that there are conventional rules of use governing the terms in a language, and that he takes these to be what make some sentences analytic and therefore necessary. For example, he says, ‘Consider: I introduce the term ‘squg’ as short for ‘round and red’. It will then be a necessary truth that whatever is squg is red.’⁹⁸ Sidelle’s thought is that if it is a rule of use that ‘squg’ only picks out red things, this rule guarantees that whatever is squg is red. As a result, ‘Whatever is squg is red’ is analytic. Since for Sidelle all analytic sentences are necessary, this sentence will also be necessary. What’s more, the rule of use governing ‘squg’ is conventional; we could have adopted another rule for the term, or we might not have introduced the term at all. Sidelle’s view is that conventional rules of use governing terms, like the rule for ‘squg,’ are responsible for making sentences necessary.

The majority of Sidelle’s book is devoted to showing how a conventionalist theory of modality can account for the existence of necessary *a posteriori* truths.⁹⁹ For Sidelle, this means showing how the existence of the necessary *a posteriori* is compatible with the view that all necessity depends on analyticity. Sidelle takes for granted that it is unproblematic for *a priori* necessary truths to be analytic; providing ‘Bachelors are unmarried’ and ‘Two plus two equals four’ as paradigmatic examples.¹⁰⁰ His story about those truths will be similar to the one provided in the case of ‘squg’. He will posit conventional features of use or meaning for the terms ‘bachelor’, ‘unmarried’, ‘two’, ‘four’ ‘plus’ and so on, that make these sentences analytic. And, their analyticity is sufficient for their necessity. However, Sidelle accepts that *a posteriori* necessary sentences such as ‘Water is H₂O’ are not themselves analytic, and that a different account of them must be provided. The challenge presented by the necessary *a posteriori* is therefore to identify how analyticity can explain the necessity of these sentences given that they are not themselves analytic.¹⁰¹

⁹⁷ Ibid, p.5.

⁹⁸ Ibid, p.9.

⁹⁹ Ibid, especially chapters 2 and 3.

¹⁰⁰ Ibid p.2. At least, the analyticity of these sentences is unproblematic barring Quinean worries to do with the analytic synthetic distinction. Sidelle deals with these worries later in the book (pp.136-150).

¹⁰¹ See sections 1.5 and 1.6 of this thesis for a detailed account of how the necessary *a posteriori* threatens LMC.

Sidelle's strategy for solving this problem is to argue that the necessity of a *posteriori* truths such as 'Water is H₂O' is owed to the analyticity of a second sentence, which is in turn determined by rules of use. He argues that in typical Kripkean cases an analytic truth is combined with a synthetic, empirical truth to yield a synthetic, *a posteriori*, yet necessary truth. In these cases, Sidelle treats the necessity of the latter truth as owed entirely to the analyticity of the former truth from which it was partially derived. In order to make clear how this view works, it is helpful to begin with an example. Sidelle notes that the central feature of the necessary *a posteriori* is that empirical discovery is required before we can know the truth of the sentences in question.¹⁰² In the water case, we needed scientists to discover the chemical composition of water before we could know that 'Water is H₂O' is true, let alone necessary. Importantly, the fact that empirical investigation is required to discover that water is H₂O means that it is knowable only *a posteriori*. That means we can imagine that the empirical investigation might have turned up different results. For all we knew prior to doing the requisite science, the chemical composition of the stuff filling our lakes and rivers might have turned out to be XYZ, or something different altogether.

Putnam's twin earth thought experiment (as discussed in chapter 1) suggests that once we discover that water is composed of H₂O, we judge that a substance *must* be composed of H₂O in order to qualify as water. In other words, water is composed of H₂O necessarily. However, we would have made the same kind of judgment about water no matter what its chemical composition had turned out to be. If the chemical composition scientists discovered had turned out to be XYZ, Sidelle notes, we would have concluded that 'Water is H₂O' was false, and that 'Water is XYZ' was not just true, but necessary. This suggests we would have judged water to have its chemical composition necessarily, *whatever that composition turned out to be*. What's more, we can know this *a priori*; our judgments about water under various hypotheses about how the world might turn out to be can be done prior to any scientific investigation.¹⁰³

This suggests that while a sentence such as 'Water is composed of H₂O molecules' is only knowable *a posteriori*, there is a second, *a priori* truth in the vicinity. And, Sidelle argues, it's this *a priori* truth in the vicinity that guides us in our judgment that whatever the chemical composition of the substance in our lakes and water turns out to be, water has that chemical composition necessarily. The relevant *a priori* truth is something like:

¹⁰² Ibid, pp.30-33.

¹⁰³ Sidelle acknowledges that it may be implausible that it's *a priori* that water has its actual chemical composition. He suggests 'chemical composition' could be substituted with 'deep explanatory feature.' (Ibid, p.32, footnote 17) The key point is that it's not superficial properties such as being clear or drinkable that are essential to water, but rather the underlying physical properties that explain them; and, we know this *a priori*.

- (1) ‘For some substance to count as water, it must share the deep explanatory features of the substance that fills our lakes and rivers, whatever those features turn out to be.’

Sidelle refers to principles like (1) as ‘principles of individuation’, and argues that they are *a priori* and analytic. These sentences demonstrate how something is ‘individuated’ in that they reveal what counts as identical to the thing in question in various hypothetical situations. For Sidelle, (1) is analytic because it reflects a conventional rule of use for ‘water’. Such conventional rules of use are ultimately responsible for the necessity of an *a posteriori* sentence like ‘Water is composed of H₂O molecules.’ His final formulation of how necessary *a posteriori* sentences are generated is that conventional rules of use for names and kind terms combine with empirical information to determine the necessary, *a posteriori* truths. Broadly, the rules stipulate that a term introduced for a particular kind of entity (a ‘K-kind term’) should be applied only where a property of a certain sort (a ‘p-property’) is instantiated. Empirical investigation is required to establish which property is the relevant p-property. An example is as follows:

- (2) If ‘x’ is a K-kind term, then if F is the p-property of the thing denoted by ‘x’, ‘x’ applies to something in any possible situation only if it has F in that situation.
- (3) ‘Water’ is a K-kind term.
- (4) *Being composed of H₂O molecules* is the p-property of the thing denoted by ‘water’. Therefore,
- (5) ‘Water’ applies to something in any possible situation only if it is composed of H₂O molecules.¹⁰⁴

Descending to the object language, the rule expressed in (2) results in the analytic ‘principle of individuation’:

- (6) If something is of kind K, then if it has property F of type p, it has property F in any possible situation in which it exists.

This combines with:

- (7) Water is of kind K, and
- (8) *Being composed of H₂O molecules* is the p-property had by water,

To result in:

- (9) It is necessary that water is composed of H₂O molecules.

¹⁰⁴ Ibid, pp.42-49. The wording in this argument is mostly Sidelle’s, but is pieced together from throughout this page range.

Here, Sidelle's position is that what makes something a K-kind term 'should depend fundamentally on the sorts of intentions with which we use the term, that is, on the rules that govern this use.'¹⁰⁵ In this instance, for something to be a K-kind term is for us to use it to track certain sorts of properties. The rules of use say that whichever of the 'p-properties' something turns out to have, if we introduce a K-kind term for that thing, the term must only be applied where the relevant p-property is instantiated. For example, a K-kind term may be a chemical kind term. Then, whichever chemical structure something turns out to have, if we introduce a chemical kind term for that thing, the term must only be applied where that chemical structure is instantiated. Of course, these rules of use for K-kind terms are entirely conventional and it's up to us whether some term is introduced as a K-kind term. As such, (2) and (3) are intended by Sidelle to be expressions of linguistic conventions. The result of descending to the object language yields analytic sentences in (6) and (7). On the other hand, (4) and (8) are empirical. Sidelle argues that the necessity expressed in (9) is due entirely to the analyticity of (6) and (7), which is in turn due to the conventional rules (3) and (4). However, the *aposteriority* of (9) is due to the *aposteriority* of (4) and (8); empirical investigation is required in order to work out which of the p-properties water instantiates.

Sidelle acknowledges that the view as it stands remains open to objections. First and foremost, he recognises that the schema exemplified in (2) – (9) may be able to generate necessary truths where there are none.¹⁰⁶ In (2), the phrase 'p-property' is intended to pick out some class of properties that may be had by K-kinds. However, there is no restriction on what terms can be used to designate p-properties. For that reason, certain contingent sentences will be treated as necessary by the theory. It is (probably) a truth, for example, that the phrase 'having the chemical composition most commonly mentioned in philosophy papers' picks out the p-property had by water (*being composed of H₂O molecules*). Therefore, the sentence '*Having the chemical composition most commonly mentioned in philosophy papers* is the p-property of the thing denoted by "water"' is true, and generates 'Necessarily, water has the chemical composition most commonly mentioned in philosophy papers' via steps (7) and (8). Of course, this last sentence is false; a different chemical composition could easily have been the one most commonly mentioned in philosophy papers.

Sidelle's solution is to require that the term picking out the p-property in (2), (4), (6) and (8) must be a rigid designator, in the sense described in chapter 1: it must be a term that

¹⁰⁵ Ibid, p.49.

¹⁰⁶ Ibid, pp.62-69.

refers to the same property in every world in which it designates anything at all.¹⁰⁷ Given that ‘the chemical composition most commonly mentioned in philosophy papers’ does not designate rigidly, it cannot be used to generate illicit necessary truths.¹⁰⁸ Of course, relying on rigid designation is problematic for a modal conventionalist, given that rigid designation is normally spelled out in a way that requires ‘real’, non-conventional relations of cross-world identity between actual objects and merely possible ones. Sidelle argues, however, that an account of rigid designation can be provided that does not presuppose modality in any problematic way. His suggestion is that cross-world identity itself should be considered conventional in nature. On his proposal, we as users of a language determine what counts as ‘the same thing’ in different possible worlds. With conventional cross-world identity relations in place, we can introduce a term as a rigid designator by restricting its use such that it picks out the same thing in every possible world.

Sidelle’s account of conventional cross-world identity relations is not articulated in any detail. What’s more, Sidelle’s theory alludes to the existence of possible worlds in a number of places but does not provide an account of how they might be constructed in the context of his modal conventionalism. Note that the rule expressed in (2) governs the use of ‘*x*’ in any *possible situation*. Given that Sidelle also relies on rigid designation, he needs an account of what qualifies as a possible situation in conventionalist terms, and an account of what counts as the same individual or kind in different possible situations.

What’s more, Sidelle’s theory as it stands still does not succeed in demonstrating that necessary *a posteriori* truth can be determined by analytic principles in combination with contingent empirical truths. Recall that the rule governing K-kind terms expressed in (2) generated the analytic truth (6): ‘If something is of kind K, then if it has property F of type p, it has property F in any possible situation in which it exists.’ This was to combine with the stipulated (7) ‘Water is of kind K,’ and the empirical (8) ‘Being composed of H₂O molecules is the p-property had by water’ to result in the truth of ‘It is necessary that water is composed of H₂O molecules.’ In its present form, therefore, Sidelle’s account makes the necessity of ‘Water is composed of H₂O molecules’ partly dependent on the supposed *contingent, empirical discovery* that being composed of H₂O molecules is a property had by water. However, that means the contingent feature of the world that helps explain the *aposteriority* of ‘Water is composed of H₂O molecules’ is itself made

¹⁰⁷ Ibid, pp 64-69.

¹⁰⁸ It might be thought that ‘having the chemical composition most commonly mentioned in philosophy papers’ rigidly designates the property *having the chemical composition most commonly mentioned in philosophy papers*. The important point here is that the phrase does not rigidly designate a p-property. Therefore, Sidelle’s solution may need to be modified to require that the term picking out the p-property rigidly designates the p-property, rather than simply that it rigidly designates some property or other.

necessary by linguistic conventions. Sidelle cannot claim that the rules are sensitive to which contingent empirical truth about water happens to hold if they also determine that water has the discovered feature necessarily. Go to a world w in which the scientists discover that the substance filling the lakes and rivers is composed of XYZ. Is it true or false at w that water is composed of H₂O molecules? On the one hand, it seems that Sidelle is committed to saying that it is *false* that water is composed of H₂O molecules at w . Otherwise, he cannot maintain that the rules governing ‘water’ are sensitive to contingent, empirical discoveries. On the other hand, Sidelle is committed to saying that ‘Water is composed of H₂O molecules’ is *true* at w . After all, he accepts that the sentence is a necessary truth.

One way to fix this problem is to require that ‘water’ only be applied to substances sharing the *actual* chemical composition of the substance denoted by ‘water’. Then (2) becomes:

- (10) If ‘ x ’ is a K-kind term, then if F is the actual p-property of the thing denoted by ‘ x ’, ‘ x ’ applies to something in any counterfactual situation only if it has F.

And (6) becomes:

- (11) If something is of kind K, then if it actually has property F of type p, it has property F in any counterfactual situation in which it exists.

And an instance of this schema is:

- (12) If water is a chemical kind, then if it is actually composed of H₂O molecules, it is composed of H₂O molecules in every counterfactual situation in which it exists.

Then the chemical composition of the substance at w is not relevant for determining whether the ‘nested’ antecedent (...if it is actually composed of H₂O molecules...) in (12) is satisfied, even at w . Whether or not water is composed of H₂O molecules at w will depend on its chemical composition at the *actual* world, rather than at any world considered merely as counterfactual. This makes sense of Sidelle’s thought that empirical discoveries *here* speak for the nature of water at all worlds. What’s more, there is still a sense in which water could have turned out to have a different chemical composition, and that can be captured by our judgments about water at other worlds *considered as actual*. However while this approach helps to capture Sidelle’s thought that different empirical discoveries could lead to different necessary truths, the empirical premise remains necessary rather than contingent, insofar as all truths of the form ‘Actually, S’ are

necessary. This problem, as well as discussion of how LMC can use the notion of a world considered as actual to account for necessary *a posteriori* truths, will be pursued further in chapter 7.

Another point of clarification for Sidelle's theory is to do with what is meant when he claims that necessary *a posteriori* truths are 'derived from' or 'generated by' rules of use in combination with empirical truths. One option for Sidelle is to claim that the rules of use in combination with some empirical claim are *sufficient* for the necessity of the relevant *a posteriori* truth. As Yablo points out in his 1992 review of Sidelle's book, however, the fact that this relation of sufficiency holds is not enough to demonstrate that the rule of use is what makes the necessary *a posteriori* truth necessary.¹⁰⁹ Rather, it could be the *necessity* of the object language expression of the rule (Sidelle's analytic 'principles of individuation') that is responsible for the necessity of the *a posteriori* truth. On one way of looking at the case discussed above, the analyticity of a principle like (6) merely coincidentally corresponds to its necessity. Perhaps it is, independently of language, a feature of K-kinds that they have their p-properties essentially. If so, it is because chemical kinds have their chemical compositions essentially that the empirical information that water is composed of H₂O molecules can be combined with (6) to explain the necessity of 'Water is H₂O'. Yablo's objection is that a sufficiency relation between rules governing terms and modal truths expressed in those terms is not enough to rule out the existence of 'real' (non-conventional) modal properties or essences.

While Yablo is right that the existence of a rule like (2) is *compatible* with a modal realist position, Sidelle's account does not need to rule out the viability of all other positions in order to itself be viable.¹¹⁰ If the existence of some rule of use (or the analyticity of some principle of individuation) in combination with an empirical truth is sufficient for the necessity of an *a posteriori* truth, enough has been done to show that analyticity *can* be what's responsible for necessity in these cases. The main challenge presented by the necessary *a posteriori* for LMC was that it drew necessity apart from analyticity in such a way that conventional linguistic rules appeared to have no bearing on which sentences count as necessary. Sidelle reintroduces the possibility of a linguistic treatment of necessity by showing that for every necessary *a posteriori* truth there is an analytic sentence in the background that is at least capable of explaining the necessity of the *a posteriori* truth in question.

¹⁰⁹ Stephen Yablo, Review of *Necessity, Essence and Individuation: A Defense of Modal Conventionalism*, by Alan Sidelle, *The Philosophical Review* Vol. 101, No. 4 (1992): pp.878-881.

¹¹⁰ Sidelle does however make a case for modal conventionalism over its rivals in chapter 4 of *Necessity, Essence and Individuation*.

Still, Yablo is right to point out that much more detail is required on the relation of dependence that Sidelle takes to hold between linguistic conventions and modal truths. As you would expect, sufficiency is not a strong enough relation to do the required work. After all, there is a sense in which *any* truth is sufficient for every necessary truth, given that necessary truths hold no matter what. More likely, the relation between the rules and the modal truths should be a metaphysical dependence relation like grounding or truth-making. However, making use of such dependence relations will only help if they themselves are not spelled out modally, on pain of risking circularity. I discuss this worry in more detail in section 8.2 of this thesis.

In summary, while Sidelle's modal conventionalism offers helpful insight into how to incorporate the necessary *a posteriori* into LMC, it is missing important details. Firstly, it relies on a theory of analyticity that Sidelle has not explicitly stated. Secondly, Sidelle requires an account of possible worlds in conventionalist terms, including an account of cross-world identity relations, rigid designation and actual-world dependence. Finally, more detail is needed on the dependence relation that is posited between the linguistic rules and the modal truths they are taken to generate.

2.2 Thomasson's modal normativism

Amie Thomasson's modal normativism fills in many of the gaps left by Sidelle's conventionalism. Most importantly, Thomasson provides a detailed account of the nature of linguistic rules and how they generate analyticities, including an argument for why we should believe in such rules in the first place.¹¹¹ Thomasson bypasses the problem of explaining the dependency relation between rules and modal truths by explicitly denying that there is one. As we'll see, Thomasson treats modal sentences as *expressions* of linguistic rules, rather than as being made true by linguistic rules. Thomasson's account of the necessary *a posteriori* is brief, and is similar to Sidelle's in its basic structure. As such, it faces similar pitfalls; like Sidelle, Thomasson relies on a notion of actual-world dependence that is not elucidated in her theory.

2.2.1 Linguistic rules and why we should believe in them

The central thesis of Thomasson's modal normativism is that metaphysical modality is explained by semantic rules governing the use of terms. More specifically, she argues that

¹¹¹ Thomasson's account of linguistic rules and analyticity can be found primarily in chapters 2 and 3 of *Ordinary Objects*. See also her 'Modal Normativism and the Methods of Metaphysics' pp.138-145 as well as Amie L. Thomasson, *Ontology Made Easy* (Oxford: Oxford University Press, 2015) chapter 2.

referring terms such as names are associated with sortals, and that sortals come with ‘application conditions’ and ‘coapplication conditions.’¹¹² The term ‘sortal’ is used by Thomasson to refer to a particular kind of general term; it is a category term that tells you about the existence and identity conditions for objects that fall under the sortal, via its application and coapplication conditions.¹¹³ The application conditions of a sortal determine what properties something must have if it is to count as belonging to the sortal. Its coapplication conditions specify when a referring term associated with the sortal counts as being applied again to one and the same entity, rather than to another entity of the same type. For example, the application conditions for ‘person’ might require that a name associated with ‘person’ can only pick out humans. And, the coapplication conditions for ‘person’ might require that if ‘Madeleine’ is associated with ‘person’, and has been successfully applied once, ‘Madeleine’ can only be reapplied to persons spatially continuous with the original referent. Thomasson notes that sortals can be distinguished from adjectives and other non-categorical general terms because the latter come only with application conditions, while sortals also have coapplication conditions; for example, ‘same wet’ is nonsensical because ‘wet’ lacks coapplication conditions.¹¹⁴

Application conditions and coapplication conditions are expressed using semantic rules. For example, an application condition for ‘dog’ might say, ‘Apply “dog” only where “canine” applies,’ or ““Dog” may be applied where “excited” applies, but not where “feline” applies.’ In general then, application conditions governing sortals connect the use of one sortal term to the use of other terms, stipulating that the first may only be applied if the second is applied, or alternatively, that it is permissible to apply the first if the second is applied. In some cases, the fulfilment of application conditions for one sortal will be guaranteed so long as the application conditions of some second sortal are fulfilled. In these cases, the successful application of the second sortal is sufficient for the successful application of the first. For example, if the application conditions for ‘dog’ are met in some situation, the application conditions for ‘animal’ will also be met. Given that this is the case, Thomasson argues we can establish hierarchies of sortals.¹¹⁵ In the case under discussion, ‘animal’ is a ‘genus’ sortal with respect to ‘dog’, which is a ‘species’ sortal. ‘Parrot’ and ‘insect’ are two more species sortals with respect to ‘animal’. The application conditions of a genus sortal are guaranteed to be met in some situation

¹¹² Thomasson, *Ordinary Objects* pp.39-42.

¹¹³ The term ‘sortal’ came into regular use in modern times following Strawson’s use in P.F. Strawson, *Individuals: An Essay in Descriptive Metaphysics* (London: Methuen & Co Ltd, 1959), pp.167-173. According to Strawson, a sortal ‘supplies a principle for distinguishing and counting individual particulars which it collects’ (p.168). As with Thomasson then, he takes the central function of sortals as being to provide conditions under which the objects that belong to the sortal exist and are identical / non-identical to one another.

¹¹⁴ Thomasson, *Ordinary Objects* p.40.

¹¹⁵ *Ibid* pp.41-42.

provided the application conditions of any of its species sortals are met. This has an important implication when it comes to coapplication conditions. If the coapplication conditions for a species sortal (say ‘dog’) allow that two applications qualify as picking out the same entity, the coapplication conditions for the genus sortal must also be met. So, ‘same dog’ implies ‘same animal’, for example, as does ‘same parrot’ or ‘same insect.’

Given that coapplication conditions determine whether a second use of a sortal is for the same object, Thomasson argues that they fix the identity conditions for the objects to which they refer. When a name is associated with a sortal, she says,

‘...the coapplication conditions for terms of the category associated with the name also fix the truth-conditions for any identity claims made using the relevant names, and so fix (frame-level) identity conditions governing the objects (if any) referred to by those names. Indeed, what I above have been calling “coapplication conditions” are typically simply called “identity conditions” in the previous literature.’¹¹⁶

Thomasson is quick to maintain, however, that her view does not entail that the identity conditions of objects themselves are in any way linguistic; she argues that coapplication conditions simply determine truth conditions for identity *sentences* using the language the relevant linguistic rules govern. In chapters 3 and 4, I return to issues raised by the link between linguistic rules and the identity conditions of objects in the context of discussing the threat of object conventionalism faced by LMC.

Thomasson acknowledges that according to at least one popular theory of reference, the causal theory, there is no need for application conditions associated with names. According to that view, the reference of names is secured by the causal relationships in which they stand to objects in the world. However, the causal theory faces some well-known problems, and Thomasson argues that the solution to those problems is to accept that there are rules of use associated with referring terms.¹¹⁷ Firstly, causal theories face the ‘*qua*’ problem, according to which there are simply too many objects causally related to our use of a term for reference to be fixed to any single one. When I introduce the name ‘Josephine’ for example, I am causally related to both a person and a group of conjoined body parts. I’m also causally related to each of those body parts individually, to a collection of atoms, to a temporal part of a person, and to many other things. Thomasson argues that causal relations alone are not enough to secure my reference to the *person* rather than to any of the other candidate referents. The problem dissolves,

¹¹⁶ Ibid, p.56.

¹¹⁷ Ibid, pp.38-44.

however, if the name is associated with a sortal directly (in this case ‘person’), and if that sortal comes with a set of application and coapplication conditions. If ‘Josephine’ is introduced as a name for a person, for example, the other objects to which my use of the name is causally related are ruled out as the name’s referent. The application conditions and coapplication conditions for ‘person’ are what guarantee that ‘Josephine’ picks out the entity with the conditions of existence, persistence and identity we intend.

The second well-known problem facing the causal theory of reference is that it lacks a straightforward account of how nonexistence claims can be true.¹¹⁸ According to most causal theorists, the meaning of a name is its referent. If a referent is lacking then, the name ought not be meaningful. Given that ‘Sherlock Holmes’ doesn’t refer, for example, the name ought to lack meaning according to the causal theory. In that case, the sentence ‘Sherlock Holmes doesn’t exist’ won’t be meaningful either, and we are left without an explanation for its apparent truth. On the other hand, if the name *is* meaningful, it must refer to some object, in which case the sentence will come out false even though it should be true. Thomasson acknowledges that one solution to this problem, suggested by Keith Donnellan, is to adopt an approach according to which the nonexistence claim is true if and only if the history of use of the relevant name ends in a ‘block’.¹¹⁹ This will occur when there is no object that stands in an appropriate causal connection to our usage of the name. This ‘metalinguistic’ account apparently avoids the problem because the conditions given for when a nonexistence claim is true only *mention* the non-referring name, rather than *using* it. However, here the *qua* problem re-arises. Thomasson argues that in most cases of true nonexistence claims, there *are* objects that are causally related to uses of the term. Uses of ‘Sherlock Holmes’ will be causally related to a work of fiction, for example, and plausibly also a fictional character. In order to rule out these entities as the referent of the name, the name must be associated with application conditions and coapplication conditions that determine what it picks out.¹²⁰

Thomasson sees the ‘*qua*’ problem and the problem of nonexistence claims as sufficient motivation for her commitment to application conditions and coapplication conditions. However, she does not advocate returning to a descriptive theory of reference according to which the reference of terms is determined *purely* by their associated rules. Instead, she suggests adopting a ‘hybrid’ theory of reference similar to one outlined by Devitt and

¹¹⁸ Ibid, pp.45-48.

¹¹⁹ Ibid, p.46. Thomasson’s reference is to Keith S. Donnellan, ‘Speaking of Nothing’ *The Philosophical Review* Vol. 83, No. 1 (1974): pp.3-31.

¹²⁰ Of course, causal theorists have made replies to the problems Thomasson discusses. See for example Nathan Salmon, ‘Nonexistence,’ *Noûs* Vol 32, No. 3 (1998): pp 277–319, and Richard B. Miller, ‘A Purely Causal Solution to One of the Qua Problems,’ *Australasian Journal of Philosophy*, Vol. 70, No. 4 (1992): pp.425-434. See Manuel García-Carpintero and Martí Genoveva eds., *Empty Representations*, (Oxford: Oxford University Press, 2014) for discussion.

Sterelny, according to which both semantic rules and causal factors play a role in determining reference.¹²¹

2.2.2 *Using linguistic rules to construct a theory of modality*

Having argued for their existence, Thomasson is in a position to show how application conditions can form the basis of analyticity and metaphysical modality. As noted above, application and coapplication conditions are storable in the form of rules governing the use of terms. For example, given that ‘bachelor’ is a species term with respect to the genus term ‘person’, ‘Apply “bachelor” only where “person” is applied’ will be a semantic rule governing the use of ‘bachelor’. Similarly, ‘Apply “philosopher” only where “person” applies’ will be a rule governing ‘philosopher’. Thomasson argues that such rules are all we need in order to establish the existence of analyticities. Specifically, she claims that analyticities are simply indicative mood, object language expressions of linguistic rules. In order to make her case for this view, she appeals to an analogy with the way rules are expressed in the context of games.¹²² Thomasson notes that while the rules of games are sometimes stated in the imperative mood they are often also stated in the indicative mood. For example, a rule in the imperative mood might be ‘If you roll a six, take another turn.’ However, the indicative mood works just as well: ‘If a player rolls a six, he or she takes another turn.’ Stating a rule in the indicative mood often makes for ease of expression. ‘The youngest player starts,’ for example, is more natural than ‘If you are the youngest player, start’ or ‘Youngest player: start.’ Similarly, Thomasson suggests, the semantic rules discussed above can be stated in the indicative mood. The indicative formulation of ‘Only apply “bachelor” where “person” applies,’ for example, is “‘Bachelor” only applies where “person” applies.’

Note that both the imperative and indicative mood formulations of the semantic rules for ‘bachelor’ were stated in a metalanguage. Thomasson points out, however, that the use of a metalanguage is rare outside the formal study of language. She argues that instead, semantic rules are often stated in the *object* language in everyday contexts. According to Thomasson, indicative mood, object language expressions of rules are simply analytic sentences. The object language expression of “‘Bachelor” only applies where “person” applies,’ for example, is the analytic sentence ‘All bachelors are people.’ She argues that this view of the role of analytic sentences is supported by linguistic evidence. For

¹²¹ See Michael Devitt and Kim Sterelny *Language and Reality* 2nd ed. (Cambridge: MIT Press, 1999). Using a hybrid theory may allow LMC to avoid problems associated with ‘global descriptivism.’ One objection to such a theory is that if the reference or extension of all terms are fixed by description, there is no way to ‘anchor’ the system in the real world. See David Lewis, ‘Putnam’s Paradox’, *Australasian Journal of Philosophy* Vol. 62, No. 3 (1984): pp.221-236 for discussion of this problem. The problem as it arises for LMC is also revisited in section 6.4 of this thesis.

¹²² Thomasson, ‘Modal Normativism and the Methods of Metaphysics’ pp.138-140.

example, she suggests that if a child asks ‘Is Aunt Dora a bachelor?’ the response ‘All bachelors are men’ is more natural than ‘The word “bachelor” only applies to men.’ Moreover, Thomasson notes that while analytic sentences are often used to correct linguistic mistakes like this one, they are hardly ever used to state worldly facts, or to describe regularities. For example, if someone was to say, ‘John is a bachelor, and he’s unmarried,’ she could rightly be accused of violating the Gricean maxim of relevance by being uninformative. After all, the information that John is unmarried was already contained in the assertion that John is a bachelor.¹²³

Granting that analytic sentences are object language, indicative mood statements of semantic rules, Thomasson argues that the addition of a modal adverb serves to make explicit that the sentence is functioning to express a rule, rather than to describe a merely contingent regularity. Again, an analogy with the case of games is useful. Suppose the rules of a game state, ‘At the end of each turn the player counts his or her score.’ In the context of a game’s rulebook, it will usually be clear that the indicative mood sentence expresses a rule, rather than a mere observation about the habits of players. However, adding the modal verb ‘must’ can function to make explicit that what’s expressed is a rule in less clear contexts: ‘At the end of each turn the player *must* count his or her score.’ Thomasson notes that while in rules expressing requirements the modal is often optional, it is usually essential in rules expressing permissions because in such cases, there is no English indicative mood expression of a rule without the modal verb. ‘A player skips his or her turn,’ for example, cannot be used to provide the same information as ‘A player *may* skip his or her turn.’¹²⁴

Thomasson’s argument is that metaphysical modal adverbs play an analogous role when it comes to semantic rules governing terms. In the metalanguage, modal verbs like ‘must’ and ‘may’ help to make explicit that indicative mood descriptions of how terms are applied are rules. For example, we can say “‘Bachelor’ *must* only be applied where “unmarried” is applied.’ When descending to the object language, we can add modal adverbs to analytic sentences to achieve the same goal. The modal equivalent of ‘All bachelors are unmarried,’ for example is ‘Necessarily, all bachelors are unmarried.’ As with the case of games, adding a modal is usually indispensable for expressing permissions. ‘Bachelors *can* be tidy,’ or ‘A bachelor *might* be tidy’ can be used to express the rule “‘Bachelor’ may be applied where “tidy” is applied,’ but there is no non-modal,

¹²³ Ibid, p.142.

¹²⁴ There are *some* indicative mood sentences that can be used to convey rules but lack modals. Eg, ‘A player is permitted to skip his or her turn (by the rules).’ Plausibly, however, such sentences are descriptions of rules, rather than expressions of them in Thomasson’s sense.

object language expression of the same rule; ‘Bachelors are tidy,’ for example, will not do the job.

As expressions of semantic rules, Thomasson stresses that analytic sentences and their modal counterparts do not need truth-makers in that their truth ‘does not depend on any empirical fact’s obtaining.’¹²⁵ After all, their function is prescriptive, rather than descriptive. In their role as expressions of rules, analytic truths are not even truth apt, and therefore are not the sort of sentences that can be made true or false by worldly entities or states of affairs. Nonetheless, it is undeniable that analytic sentences can be used to express truths. As Theodore Sider says, analytic truths are just as much ‘about the world’ as any other sentences.¹²⁶ ‘All bachelors are unmarried’ states a truth about bachelors, for example. Thomasson accounts for this fact by arguing that a single sentence can be used to perform more than one kind of speech act.¹²⁷ While the primary function of analytic sentences is prescriptive, they can sometimes be used descriptively, and in those cases they express truths. When used descriptively, she argues, the truth of analytic sentences is guaranteed by the linguistic rules they serve to express. The linguistic rule ‘Apply “bachelor” only where “unmarried” applies,’ for example, sets application conditions for ‘bachelor’ and ‘unmarried’ such that successful application of the former term requires successful application of the latter. As a result, every time ‘bachelor’ applies to an individual, ‘unmarried’ will also apply, which in turn guarantees that ‘All bachelors are unmarried’ will be true. Therefore, the semantic rule alone is sufficient to guarantee the truth of the analytic sentence. Similarly, modal sentences may be taken to be true or false in what Thomasson calls a ‘deflationary’ sense depending on whether or not they accurately reflect the linguistic rules.¹²⁸ False modal sentences are inaccurate attempts at expressions of linguistic rules, while true ones are accurate.

So far, the cases discussed have been cases of *a priori* necessities, but Thomasson argues that modal normativism can be extended to also account for necessary *a posteriori* truths.¹²⁹ Her strategy for dealing with these cases is similar to Sidelle’s. She argues that some rules are ‘schematic’ in nature, and require empirical details to be filled out in order to obtain more specific conditions of application governing a term. Once again, the case can be made by analogy with the rules of a game. Often, a rulebook will provide information about who should have the first turn; for example, they might say ‘The

¹²⁵ Thomasson, ‘Modal Normativism and the Methods of Metaphysics’, pp.147-149, and *Ordinary Objects* pp.67-72.

¹²⁶ Theodore Sider, ‘Reductive Theories of Modality,’ in M. J. Loux and D. W. Zimmerman eds., *The Oxford Handbook of Metaphysics* (Oxford: Oxford University Press, 2003) p.204.

¹²⁷ Thomasson, *Ordinary Objects* p.69.

¹²⁸ Ibid, p.70, and ‘Modal Normativism and the Methods of Metaphysics’ p.148.

¹²⁹ Thomasson, *Ordinary Objects* p.62 and ‘Modal Normativism and the Methods of Metaphysics’ pp.144-146.

youngest player starts.’ Alone, however, this is not enough information to work out which course of action to take in order to follow the rule. First, some empirical investigation must be done in order to work out who is the youngest player. Suppose that the investigation reveals that Elliot is the youngest player. Then, ‘The youngest player starts’ can be combined with ‘Elliot is the youngest player’ to generate ‘Elliot starts.’ Despite the fact that the rules do not specify that Elliot is to start directly, it is still mandated by the rules that in this game, Elliot is to start. Thomasson argues that semantic rules generate *a posteriori* necessities in an analogous way. In some cases, the semantic rules governing a term must be combined with empirical information to create rules that are only knowable *a posteriori*. For example, she suggests that the term ‘water’ may be governed by the rule ‘Whatever the actual chemical composition of this stuff turns out to be, apply “water” only where there is stuff of that chemical composition.’¹³⁰ An expression of the rule in the object language is the analytic sentence ‘Whatever the actual chemical composition of this stuff turns out to be, water has that chemical composition.’ Finally, the modal version is ‘Necessarily, whatever the actual chemical composition of this stuff turns out to be, water has that chemical composition.’ However, empirical information is required before we can work out which chemical composition is the right one. When it is discovered that the relevant chemical composition is H₂O, that information can be combined with the rule to generate: ‘Apply “water” only where “H₂O” applies.’ The object level, indicative form of the rule is then ‘Water has the chemical composition of H₂O,’ and the modal form is ‘Necessarily, water has the chemical composition of H₂O.’

Thomasson’s account of the necessary *a posteriori* is brief, and she intends it to be a mere sketch rather than a detailed theory. However, it is clear that she recognises that actual-world dependence will be required in order to make sense of how empirical discoveries can combine with linguistic rules to generate *a posteriori* necessities. After all, her suggested rule for ‘water’ restricts its application to the *actual* chemical composition of ‘this stuff.’ As with Sidelle’s theory then, Thomasson’s approach requires some account to be given for how modal truths can depend on the nature of the actual world. Thomasson’s sketch also falls prey to the problem identified by Sidelle when it comes to non-rigid descriptions being used to pick out properties.¹³¹ Say, for example that ‘The actual chemical composition of this stuff is the chemical composition most commonly mentioned in philosophy papers’ expresses a truth. Given what Thomasson has said, it appears that her view entails that ‘water’ is to be applied only where ‘the chemical

¹³⁰Thomasson, ‘Modal Normativism and the Methods of Metaphysics’ p.145.

¹³¹ See section 2.1 above for discussion of problems facing Sidelle’s theory.

composition most commonly mentioned in philosophy papers' is applied. Fixing this problem may require Thomasson, with Sidelle, to appeal to a notion of rigid designation.

The second issue Sidelle's theory faced was that an account was required for how analyticity 'generates' necessity. As noted above, Thomasson's theory avoids this problem altogether. Given that modal sentences are simply object language expressions of linguistic rules, they do not require truth-makers according to Thomasson. She argues that modal sentences usually do not perform a descriptive function; instead they are disguised instructions or commands. As such, no explanation is required for how necessity is 'generated' from rules. Nonetheless, Thomasson can still maintain that modal sentences express truths: they are true when they accurately reflect the existence of a genuine linguistic rule, and false otherwise.

2.3 Defending analyticity

The second major objection to LMC raised in the previous chapter was Quine's rejection of the analytic / synthetic distinction.¹³² Prodigious work has been done by others to defend the notion of analyticity, and I will take for granted that these attempts have been sufficiently successful to render the commitment to analyticity incurred by LMC harmless. Here, I will briefly outline some of the key lines of defence raised in the literature.

One influential response to Quine's 'Two Dogmas of Empiricism' comes from Grice and Strawson, who argue that the circularity in definitions of concepts like 'analyticity' and 'synonymy' is not vicious.¹³³ Graham Priest makes a similar point, arguing that many important concepts are definable only using circular terms.¹³⁴ While it may be impossible to elucidate concepts such as 'meaning', 'synonymy', 'analyticity' and so forth in purely non-semantic terms, they argue, that does not mean we ought to reject the concepts as nonsensical. Plausibly, for example, logical concepts such as 'consequence' and 'validity' are also definable only relative to each other. Grice and Strawson also argue that it is possible to accept Quine's view that any belief can be revised in light of empirical information while maintaining the analytic / synthetic distinction. They argue that while every belief can be revised, some such revisions constitute changes of definition, and

¹³² Here, my focus is on responses to Quine's arguments in 'Two Dogmas.' The arguments in 'Truth By Convention' are discussed in chapter 5.

¹³³ H. P. Grice and P. F. Strawson, 'In Defense of a Dogma,' *Philosophical Review* Vol. 65 (1956): pp.141-158.

¹³⁴ Graham Priest, 'Two Dogmas of Quineans,' *The Philosophical Quarterly* Vol. 29, No. 117 (1979): pp.289-301.

some consist in merely ‘admitting falsity.’¹³⁵ The former kind of change is what occurs when we revise analytic principles. This response is reminiscent of the positions espoused by the early positivists discussed in chapter 1. Recall that Reichenbach also held that our system of beliefs faces experience ‘as a whole,’ and that principles only count as *a priori* relative to a theory. As a result, he argued that any principle could be rejected in light of new evidence. However, a distinction was still maintained between definitional principles and experiential ones since some revisions constituted changes of definition, as in the case of the shift to new geometrical principles in light of the theory of relativity.

Priest offers a second sort of response to Quine’s argument from holism. He argues that if we are to update our beliefs in light of new evidence, our system of beliefs as a whole must be governed by rules of inference. These rules determine, for example, when there is a conflict in the system and when there isn’t. And, Priest says, the rules that govern the system can be stated as conditionals which are members of the belief set itself. Analytic sentences are those members of our system of beliefs that ‘reflect its structure,’ or are statements of the rules governing the system as a whole.¹³⁶ In many ways, this approach from Priest is similar to Thomasson’s position that analytic sentences are expressions of semantic rules stated in the object language.

Paul Boghossian argues that there is no way to construct a plausible interpretation of Quine’s rejection of the analytic / synthetic distinction. His argument is that the concept of ‘Frege-analyticity’, according to which a sentence is analytic if it is transformable into a logical truth by swapping synonyms with synonyms, cannot be rejected without rejecting meaning itself. Boghossian suggests two ways to interpret Quine’s claim that this notion meaningless. The first is a thesis he calls ‘non-factualism’ about analyticity: the thesis that there is no coherent property expressed by ‘is analytic’, and as a result, that ‘S is analytic’ is also incoherent. The second is a thesis he calls an ‘error theory’ about analyticity: the thesis that analyticity is a coherent property, but one that is necessarily uninstantiated.¹³⁷ Boghossian dismisses non-factualism by arguing that for Frege-analyticity to be incoherent, either the notion of logical truth must be incoherent or the notion of synonymy must be incoherent. Given that logical truth is not in question, the only option left is for synonymy to be incoherent. Boghossian argues, however, that it is implausible to deny that the notion of synonymy makes sense without embracing

¹³⁵ Grice and Strawson, ‘In Defense of a Dogma’ p.157.

¹³⁶ Priest, ‘Two Dogmas of Quineans’ p.292.

¹³⁷ Boghossian, ‘Analyticity Reconsidered’ p.370.

scepticism about meaning itself.¹³⁸ Once we allow that expressions can be meaningful, it is difficult to deny that two expressions can have the *same* meaning. To do so would mean accepting that we are unable to stipulate that one expression is to mean the same thing as another. What's more, given that there are at least some synonymies (such as stipulated ones), even the weaker 'error theory' interpretation of Quine's position can be rejected.

Nonetheless, Boghossian does not endorse analyticity in all its forms. He accepts that analytic claims should not be thought to be literally *made true by meaning*. (In the Frege-analyticity case, the logical truths with which analytic sentences are synonymous are not 'made true' by meaning.) He suggests, however, that analyticity can be used to explain the *a priori*.¹³⁹ He contrasts a metaphysical understanding of analyticity (the notion that an analytic sentence owes its truth to its meaning) from an epistemological understanding of analyticity (as the notion that merely grasping the meaning of a sentence justifies one's holding it true).¹⁴⁰

Theorists in recent times have also constructed accounts of analyticity intended to withstand Quinean attacks. Examples include Thomasson's theory described above, Boghossian's epistemological analyticity, and Gillian Russell's theory.¹⁴¹ Russell argues for what Boghossian would call a 'metaphysical' conception of analyticity, according to which the meaning of a sentence fully determines its truth. Her theory differs from earlier positions by taking the *reference determiner* of an analytic sentence to be what makes it true, rather than its *content*. Russell argues for a 'two-factor' account according to which the truth of a sentence is determined partly by a state of the world, and partly by its meaning.¹⁴² She argues that the meaning that forms the second of these factors is 'reference determiner', where a reference determiner is defined as a condition that something must meet to count as the extension of the expression in question.¹⁴³ According to Russell, the state of the world that forms the first factor can be the context of utterance, the context of introduction, or the context of evaluation for a term.

¹³⁸ Boghossian acknowledges that Quine is sceptical about meaning, but points out that many who embrace his arguments against analyticity do not wish to be; normally, Quine's arguments against meaning are thought to be divorceable from his arguments against analyticity.

¹³⁹ Boghossian, 'Analyticity Reconsidered' p.361.

¹⁴⁰ Ibid, p.363. Note that others have critiqued views such as Boghossian's in recent times. In particular, Timothy Williamson argues that epistemological conceptions of analyticity fail; he suggests that merely understanding a sentence cannot reliably offer justification for sentences that such theories treat as analytic. See chapter 4 of Timothy Williamson, *The Philosophy of Philosophy* (Malden: Blackwell Publishing, 2007).

¹⁴¹ Gillian Russell, *Truth in Virtue of Meaning: A Defence of the Analytic / Synthetic Distinction*, (Oxford: Oxford University Press, 2008).

¹⁴² Ibid, p.37.

¹⁴³ Ibid, p.x, p.46. Russell's use of reference determiners as the basis of analyticity bears comparison to Thomasson's use of conditions of application, which also provide conditions something must meet to count as belonging to the extension of a term.

Following Kaplan, she suggests that the context of utterance for a term determines its context of evaluation.¹⁴⁴ Then, analyticity, or truth in virtue of meaning, is a property had by a sentence when its truth is guaranteed by its reference determiner alone. Russell argues for a neo-Kantian position according to which this is the case for subject / predicate sentences when a) the sentence can be true even if nothing meets the conditions set by the subject expression's reference determiner, and b) the reference determiner for the subject expression 'contains' the reference determiner for the predicate expression.¹⁴⁵ This second condition holds when everything that satisfies the subject expression with respect to some context of utterance and context of introduction also satisfies the predicate expression with respect to that context of utterance and context of introduction.¹⁴⁶

The notion of analyticity remains controversial, and there are numerous other critiques and defences in the literature.¹⁴⁷ In the following chapters, however, I will set aside Quinean concerns to do with analyticity in order to focus on other issues for LMC. In particular, I will examine whether the theory is committed to broader ontological conventionalism. Further discussion of the notion of truth by convention, and the critiques levelled against it from Quine and others, can be found in chapter 5.

2.4 Establishing parameters for LMC

The defence of LMC from Kripkean and Quinean challenges mounted above has primarily been made within the context of Sidelle and Thomasson's modal theories. Of course, these are only two of a number of conventionalist and deflationist theories of modality in the literature.¹⁴⁸ Therefore, it is necessary to establish some precise parameters for LMC in order to differentiate it from similar views. In this section, I will provide a brief overview of some of prominent deflationist and conventionalist theories of modality. Then, I will set out some parameters to determine the commitments of LMC, and specify which theories do and do not count as a version of it. Note that while LMC as defined below will be my focus, at times objections raised will also apply to other

¹⁴⁴ Ibid, pp.55-56.

¹⁴⁵ Ibid, p.100.

¹⁴⁶ Note that Russell also responds to Quine's arguments against analyticity directly in chapter 4 of *Truth in Virtue of Meaning*.

¹⁴⁷ Other defences can be found in, for example, Sidelle, *Necessity, Essence and Individuation* chapter 5, Thomasson, *Ordinary Objects* chapter 2, and Richard Creath, 'The Initial Reception of Carnap's Doctrine of Analyticity,' in Dagfinn Føllesdal ed., *Philosophy of Quine: General, Reviews, and Analytic/Synthetic*, (New York: Garland, 2000). A prominent critique can be found in Williamson, *The Philosophy of Philosophy*.

¹⁴⁸ A helpful overview of deflationist theories of modality can be found Amie L. Thomasson, 'Non-descriptivism About Modality: A Brief History and Revival,' *The Baltic International Yearbook of Cognition, Logic and Communication* Vol. 4 (2009): pp.1-26.

conventionalist or deflationary theories. When this is the case, I will draw attention to the broader application.

2.4.1 *Theodore Sider*

One important recent modal theory is Theodore Sider's 'Humean' account of modal truth.¹⁴⁹ Sider explicitly *rejects* versions of conventionalism that treat necessity as equivalent to analyticity.¹⁵⁰ His theory starts from the assumption that 'necessity' does not pick out any natural property. Instead, he says, it is up to us which classes of truths we treat as necessary, and which we treat as merely contingent. As such, Sider's view makes the meaning of terms like 'necessary' conventional, but does not take the necessity of any sentence to be equivalent to its analyticity, or its truth to be guaranteed by linguistic rules alone. Some of the classes of sentences Sider considers necessary are mathematical truths, logical truths and the laws of metaphysics. Even analytic truths count as necessary according to Sider, but their analyticity alone is not the source of their necessity; instead they are necessary because they fall into a class of sentences that by convention, we have chosen to treat as necessary.

2.4.2 *Ross Cameron*

Ross Cameron argues for a deflationist theory of modality.¹⁵¹ With Sider, Cameron argues that necessity is not a natural property; it does not 'carve reality at the joints'.¹⁵² Again with Sider, he suggests that which features of reality we treat as necessary and which we treat as merely contingent is in a sense conventional, but he denies that we make modal sentences true. According to deflationism, we choose where to draw the boundaries between necessity and contingency, but the properties we end up picking out are just as real as any other properties; they simply aren't *natural*. Cameron suggests that we can distinguish three different positions when it comes to modality: the realist position, the conventionalist position and the deflationist position. According to the realist, reality carves a natural joint between the necessary and the contingent. According to the conventionalist, there is no such joint in reality; instead, we impose or project modal features onto the world. Finally, according to the deflationist, reality carves a non-natural joint. Cameron helps articulate these positions with the help of an analogy. We

¹⁴⁹ Sider's view is set out in 'Reductive Theories of Modality' as well as in chapter 12 of Theodore Sider, *Writing the Book of the World* (Oxford: Oxford University Press, 2011).

¹⁵⁰ Sider, 'Reductive Theories of Modality' pp.22-25, *Writing the Book of the World* pp.268-269.

¹⁵¹ Ross P. Cameron, 'The Grounds of Necessity,' *Philosophy Compass* Vol. 5, No. 4 (2010): pp.348-358, and Ross P. Cameron, 'What's Metaphysical about Metaphysical Necessity?' *Philosophy and Phenomenological Research* Vol. 79, No. 1 (2009): pp.1-16.

¹⁵² Cameron, 'The Grounds of Necessity,' p.355.

might call someone ‘tall’, he says, in some circumstances but not in others.¹⁵³ Perhaps in the context of your family you are tall, but you are short when compared to most basketball players. There are three things we could say about the property of tallness. Firstly, we could say that tallness is a natural property such that either you are tall or not; if so, we must have got it wrong in one context or the other. This is the realist position. Secondly, we could say that tallness is merely conventional; the world contains no tallness properties, but perhaps we ‘project’ tallness onto you in some circumstances but not others. This is the conventionalist position. Thirdly, we could say that tallness is a non-natural property, but a real one nonetheless. You are part of the set of people taller than most of your family members, and also part of the set of people shorter than most basketball players. Neither of these represents a natural property, but each is still a real feature of the world. This final position is the deflationist position, which Cameron supports. He suggests that modal properties are analogous; they are not conventional, but they also fail to carve reality at the joints.

2.4.3 *Iris Einheuser*

A limited modal conventionalism is defended by Iris Einheuser, who argues that our concepts ground the modal properties of objects.¹⁵⁴ She frames her modal ‘conceptualism’ as a solution to the grounding problem for coincident objects. Einheuser argues that the modal differences between objects with complete spatiotemporal overlap (such as a statue and a piece of alloy) are grounded in the concepts we apply to them. Her basic ontology is composed of ‘ontologically inarticulate stuff’; this stuff does not come built-in with objects instantiating modal properties.¹⁵⁵ Instead, Einheuser says, we *configure* objects in the world through application of our concepts, which carve out entities complete with modal properties and conditions of persistence. This helps provide a solution to the grounding problem because it accounts for what the statue and the alloy have in common (they share the same portion of inarticulate stuff) and how they differ (they instantiate different conceptual modal properties). Nonetheless, Einheuser’s view is not intended as a full-blown modal conceptualism. The non-conceptual ‘stuff’ of her ontology is composed of fundamental physical particles, which themselves have modal properties. As a result, it is only the non-fundamental entities that depend on our concepts

¹⁵³ Cameron, ‘What’s Metaphysical about Metaphysical Necessity,’ pp.4-5.

¹⁵⁴ See Iris Einheuser, ‘Towards a Conceptualist Solution to the Grounding Problem.’ *Noûs* Vol. 45, No. 2 (2011): pp.300-314.

¹⁵⁵ *Ibid*, p.303.

according to Einheuser.¹⁵⁶ She suggests that a set of non-conceptually dependent possible worlds could be constructed that represent different ways the ‘stuff’ itself could be.¹⁵⁷

2.4.4 Dana Goswick

Dana Goswick argues for a ‘response-dependence’ theory of objects and their modal properties.¹⁵⁸ Like Einheuser, she suggests that the right way to explain the modal properties of objects is to take a non-modal part of the world to *combine* with human practices to result in an object complete with modal properties. According to Goswick, the mind-independent world contains ‘non-modal objects’. These are entities that occupy space and time, and instantiate non-modal properties, but lack modal properties. For Goswick, what’s required for a modal object to arise is that we have a particular kind of psychological response to a non-modal object, which she calls a ‘sort-response’. For example, for there to be an object with the modal persistence and identity conditions of a rock, some subject must respond to an appropriate non-modal object *as a rock*. As a result, Goswick accepts that both objects and their modal properties are dependent on human psychological responses.

2.4.5 Simon Blackburn

Simon Blackburn defends a ‘quasi-realist’ theory of modality.¹⁵⁹ He argues that we ought to reject the approach to theorising about modality that takes providing a modal theory to require providing truth conditions for modal sentences. Instead, he contends, the project of providing a modal theory is one of giving an account of what it means to make modal claims, and why it is correct for us to do so.¹⁶⁰ According to Blackburn, making modal assertions means making certain commitments, or expressing certain mental states. Constructing a theory of modality, he says, must begin with an account of the function of modal claims in our discourse; we must first say what mental states are reflected in our modal claims. Using this information, we can then give an account of propositions expressed by them. By linking modal propositions directly to the mental states they reflect, the truth or falsehood of the propositions can be given in terms of the correctness of the mental states.

¹⁵⁶ Ibid, p.303. For Einheuser’s purposes, this will only be troublesome if there are coincident fundamental physical particles.

¹⁵⁷ Ibid p.306, See also Iris Einheuser, ‘Counterconventional Conditionals,’ *Philosophical Studies* Vol. 127, No. 3 (2006): pp.459-482.

¹⁵⁸ Dana Goswick, ‘A New Route to Avoiding Primitive Modal Facts,’ in Elly Vintiadis ed., *Brute Facts*, (Oxford: Oxford University Press, 2018f).

¹⁵⁹ Simon Blackburn, ‘Morals and Modals,’ in *Essays in Quasi-Realism*, (Oxford: Oxford University Press, 1993), pp.52-74.

¹⁶⁰ Ibid, p.55.

2.4.6 *Conditions for LMC*

As is clear in light of the list above, a wide variety of views fall into the category of deflationism or conventionalism about modality. Given the broad range of loosely related theories available, it is helpful at this point to set the parameters for LMC that I will be using throughout the rest of the thesis. Broadly (although not exhaustively) the views above can be grouped along two different dimensions. On the one hand, some views are anti-realist while others are deflationist. The deflationist views, such as Sider's and Cameron's, take 'necessary' to pick out a real, mind-independent feature of reality, but deny that the feature in question is a natural property. On the other hand, the anti-realist views, such as Einheuser's and Goswick's, take necessity to be a property that depends on our human behaviour in some way. A second way to group the theories above is by whether they take modal truths to depend on language or on some other feature of us. On the one hand, Sider's view is that modal truth is partly conventional because it depends on what 'necessary' means. On the other hand, Einheuser's view is that the modal properties of objects depend on our concepts, Goswick's view is that they depend on our psychological responses, and Blackburn's view is that they serve to express certain mental states.

LMC falls into the anti-realist side of the first divide, and the linguistic side of the second divide. According to LMC, the rules governing terms in a sentence determine the modal status of the sentence. And, necessity does not pick out a property, natural or non-natural, that is independent of those linguistic rules. Importantly, this means that the role played by linguistic conventions in determining modal truth must be more than simply to fix the meaning of 'necessary' to an independently existing property. What it means for the role of convention to qualify as more significant than this is a topic that will be given significant discussion in chapters 4 and 5 of this thesis.

For the remainder of the thesis, I will use 'linguistic modal conventionalism' to pick out any theory that accepts the following two theses:

- a) The truth values of all metaphysical modal sentences are determined in a non-trivial way by conventional linguistic rules governing the use of terms.
- b) All modal features of the world are dependent on these conventional linguistic rules.

Note that none of the five views listed above qualify as LMC given these two conditions. Sider's and Cameron's theories both fail to meet both conditions. They fail condition a) because the role played by linguistic rules is simply to help fix reference to independently

existing properties; this does not meet the ‘non-trivial’ test. (Once again, what qualifies as non-trivial is a topic that will be elucidated further in chapters 4 and 5.) They fail condition b) because they take modal properties to be non-conventional (although non-natural) features of the world. Einheuser’s, Goswick’s and Blackburn’s theories all fail condition a). None of these three theories take linguistic roles to play any role in determining modal truth. Finally, note that Sidelle’s theory counts as a clear case of LMC by explicitly endorsing both a) and b). The extent to which Thomasson would endorse these conditions is discussed in chapter 4. As we will see in the following chapters, reconciling a) and b) with non-conventionalism about ontology more broadly is a difficult task.

2.4.7 *Two notes: sentences and conventions*

There are two features of condition a) that require explanation before moving on to construct the objection for LMC that is to be the focus of the next three chapters. Firstly, a) requires that modal *sentences* depend for their truth on conventional linguistic rules. In what follows, sentences should be thought of as sentence types rather than tokens, and should be taken to be expressed in a natural language. (For my purposes, that language is English.) A further question is *how* English sentences are to be typed. Here, I’ll assume that they are typed orthographically or phonetically, rather than semantically.¹⁶¹ I take this approach because it will be an important feature of the discussion in future chapters that one and the same word or sentence can have different meanings.

The second feature of a) that requires discussion is the nature of the conventions that establish linguistic rules. While I do not intend to commit on behalf of LMC to one theory of convention or other, I will briefly outline two available theories. The first is David Lewis’s famous account.¹⁶² According to Lewis, conventions arise in human societies as a way of solving problems of coordination. Such problems arise for a group when each member has a number of actions he or she could take, such that the outcomes each person wishes to bring about or prevent depend on the actions of others in the group.¹⁶³ As a result, each person’s chosen action should depend on her expectations about the actions of the others. Sometimes, the actions group members take will constitute what Lewis calls an ‘equilibrium’. This is the case when each person would not choose to alter her action given what the others in the group have chosen. Lewis describes the following as a case

¹⁶¹ David Kaplan’s ‘Words,’ *Aristotelian Society Supplementary Volume* Vol. 64, No. 1 (1990): pp.93-119 provides argument against this view. A response can be found in John Hawthorne and Ernest Lepore, ‘On Words,’ *The Journal of Philosophy* Vol. 108, No. 9 (2011): pp.447-485.

¹⁶² Lewis, *Convention*.

¹⁶³ *Ibid*, p.8.

of a coordination equilibrium.¹⁶⁴ If a phone call is cut off, and the participants want to reconnect, there are two actions each person could take: each could either call back, or wait for the other to call back. The situation in which one *or* the other calls back, but not both, is a coordination equilibrium because neither participant would benefit from changing her action. On the other hand, the situations in which neither calls back, or both call back at the same time, are *not* coordination equilibria, because each would benefit from changing her action given what the other person did.

According to Lewis, conventions are established to allow people to coordinate their actions to achieve equilibria. A convention is then a regularity in the actions of the members of some population such that in a given situation, everyone conforms to the regularity, everyone expects everyone else to conform to the regularity, and conforming with the regularity represents a coordination equilibrium. In other words, conforming to the regularity means that no individual would be better off *not* conforming, given that everyone else *does* conform.¹⁶⁵ On Lewis's view, conventions require that there is common knowledge of expected behaviour.

Margaret Gilbert has offered extensive criticism of Lewis's account.¹⁶⁶ For example, she suggests that Lewis's account is wrong in requiring that a convention can only arise if each party expects others to conform to it; sometimes, she says, we fully expect others to *flout* conventions.¹⁶⁷ Gilbert also argues that there is an essentially normative aspect to convention, which is lacking from Lewis's view.¹⁶⁸ She offers her own theory of social convention, according to which a convention constitutes a kind of joint acceptance of a principle of action.¹⁶⁹ Importantly, she agrees with Lewis that this joint acceptance must be common knowledge among members of the relevant society, even if an explicit agreement is lacking. Her account is normative in that each member of the society must take herself to have a duty to conform to convention if she is party to it, even if other reasons for action can trump her reasons to conform.

In order for linguistic rules to be conventional, it must be that convention in a sense such as those of Lewis or Gilbert has arisen among members of a linguistic community to follow the linguistic rules. If it is a rule to only apply 'bachelor' where 'male' applies, for example, some convention must be in place to refrain from applying 'bachelor' where

¹⁶⁴ Ibid, p.5.

¹⁶⁵ Ibid, p.42.

¹⁶⁶ See Margaret Gilbert, *On Social Facts*, (London: Routledge, 1989), pp.319-367.

¹⁶⁷ Ibid, pp.346-349.

¹⁶⁸ Ibid, pp.352-355.

¹⁶⁹ Ibid, pp.373-407.

‘male’ does not apply.¹⁷⁰ Note that both Lewis’s and Gilbert’s account have in common that conventions are often implicit, rather than stipulated or laid down explicitly. In what follows, I’ll assume that our linguistic conventions are implicit in this way.

2.5 Taking stock

With parameters in place, we can now take stock of LMC’s prospects. In chapter 1, I argued that the primary charges that have been laid against LMC are a) that analyticity, upon which the view relies, should be rejected, and b) that it cannot account for necessary *a posteriori* truths. The aim of this chapter has been to demonstrate that neither of these challenges is insurmountable. I take it that the substantial body of work done in recent times to defend the notion of analyticity has met with enough success to warrant the use of analyticity in LMC.

On the other hand, the work required to make LMC compatible with the existence of necessary *a posteriori* truths is not yet complete. The approach taken by Sidelle and Thomasson is promising, but must be supplemented by an account of how modal truths depend on the actual world. I return to this topic in chapter 7, where I argue that the approach to the necessary *a posteriori* provided by two-dimensional semantics can be adapted by LMC. For now, I will set aside Quinean and Kripkean worries to argue for a new challenge to LMC: the threat of object conventionalism.

¹⁷⁰ Lewis’s account of the conventions of language can be found in chapter 5 of *Convention*.

CHAPTER 3

Lost in a Conventional World

Despite its ability to respond to Quinean and Kripkean challenges, linguistic modal conventionalism is not immune from objections. Here and in the following two chapters, I argue that LMC becomes committed to conventionalism about objects and conventionalism about truth if it maintains an ontology that admits modal properties had by objects and modal truth conditions had by propositions. This chapter is devoted to articulating the first part of the challenge: the threat of object conventionalism. While Sidelle explicitly endorses object conventionalism, I argue that the position ought to be rejected by proponents of LMC, given the motivations for the view set out in the introduction. One natural way for LMC to account for the modal properties had by objects is to take them to depend on the rules governing referring terms. However, as argued below, the modal properties had by an object are closely related to its conditions of existence, identity and persistence in such a way that treating those properties as dependent on convention amounts to treating the object itself as dependent on convention. What's more, combining conventionalism about the modal properties of objects with non-conventionalism about the objects themselves can lead to contradictions and to Leibniz's Law violations. Below, section 3.1 introduces the notion of modal properties and the *de re* modal sentences that appear to attribute those properties to objects. Sections 3.2 and 3.3 present two ways to generate object conventionalism from LMC. In section 3.4, I evaluate whether a commitment to object conventionalism is a bullet worth biting for LMC, and conclude that it isn't. Finally, in section 3.5 I examine whether the use of 'Abelardian' predicates can represent a way for LMC to avoid the unwanted commitment.

3.1 Modal properties and *de re* modal truth

As noted in chapter 2, modern versions of LMC such as Sidelle's and Thomasson's take linguistic rules governing terms to make some sentences analytic, and treat analyticity as the determinant of the modal status of sentences. As such, sentences of the form 'Necessarily, S' are taken to be true because 'S' is analytic, or because rules governing the use of the terms in 'S' guarantee that S is true. Similarly, 'Possibly, S' is taken to be true because 'Not S' is not analytic, or because rules governing the use of terms in 'S' don't guarantee that 'S' is false. These are cases of *de dicto* modality; adding 'necessarily' or 'possibly' to 'S' says that the entire sentence is necessarily true or possibly true. By contrast, *de re* modal sentences appear to say of an object that it has

some property necessarily or possibly. For LMC, modal sentences of this type require a different approach. Consider, for example, the claim that the number of planets is necessarily greater than seven. This claim can be read in two ways. On the *de dicto* reading, the claim is that the sentence, ‘The number of planets is greater than seven’ is true necessarily. This is false, since there could have been seven or fewer planets. On the *de re* reading, the claim is that the referent of ‘the number of planets’, namely the number eight, is necessarily greater than seven. This is true, since no matter how things turned out to be, the number eight would be greater than the number seven.

More generally, a modal sentence is *de re* when its logical form is such that it contains a variable within the scope of a modal operator that is bound by a quantifier outside the scope of the modal operator. In the example just discussed, the claim can be disambiguated with a *de re* reading as:

$$(1) (\text{the } x: Px)(\Box Gx)$$

In (1), ‘P’ is ‘the number of planets’ and ‘G’ is ‘is greater than seven’. Since the last instance of ‘x’ both falls within the scope of the modal operator and is bound by the quantifier ‘the x: Px’, (1) is *de re*. On the other hand (2) is *de dicto*, since the modal operator attaches to a complete sentence, rather than to a free variable:

$$(2) \Box((\text{the } x: Px)Gx)$$

Because the modal operator attaches directly to a predicate in *de re* sentences, rather than operating on the sentence as a whole, we can refer to *de re* modal sentences as sentences involving ‘modal predication’.¹⁷¹ In (1), ‘ $\Box Gx$ ’ is a modal predicate that is naturally interpreted as attributing to the referent of the subject term (the x: Px) a modal property: the property of *being necessarily greater than seven*.

Given the basic approach of LMC discussed in chapters 1 and 2, we can see that its treatment of (2) is relatively straightforward. ‘Necessarily, the number of planets is greater than seven’ will be true if the linguistic rules governing ‘the number of planets’ and ‘greater than seven’ make ‘The number of planets is greater than seven’ analytic. Since ‘Apply “the number of planets” only where “greater than seven” applies’ is not plausibly a linguistic rule, ‘The number of planets is greater than seven’ is not analytic, and the modal claim is false. However, dealing with (1) is more difficult. A natural way to treat claims like (1) is to hold that modal predicates pick out modal properties, and a sentence like (1) is true just when the referent of the subject term has the modal property

¹⁷¹ This is the terminology Sidelle uses in *Necessity, Essence and Individuation* pp.69-78.

picked out by the predicate. On this view, (1) is true because the referent of ‘the number of planets’ (the number eight) has the modal property picked out by the modal predicate: the property of being necessarily greater than seven.

De re modal sentences, then, appear to make claims about modal properties had by objects; indeed, ‘*de re*’ can be translated as meaning ‘of the thing’. The task for LMC is to explain how these sentences can depend for their truth on linguistic rules. If the natural reading of *de re* modal sentences is accepted, that means providing an explanation of how linguistic rules can make it the case that objects have the modal properties they do. This is no small feat; on the face value reading, modal properties are features of objects like any other properties. Just as an object can be red, for example, it can also be possibly green. As a result, treating *de re* modality as conventional means treating features of objects as conventional on this view, rather than simply treating features of language as conventional. Sidelle’s strategy for dealing with *de re* modality is take on this challenge by accepting the natural reading; he takes the linguistic rules governing an expression to determine whether objects in its extension possess a given modal property.¹⁷² Sidelle argues that linguistic rules endow objects with their modal properties, and by doing so, they explain the truth of *de re* modal sentences.

To see how this view might work, consider the following example. The sortal ‘person’ is associated with conditions of application and coapplication. According to the current proposal, it is these rules that determine the modal properties of any object that falls into the extension of ‘person’. Since ‘person’ is a sortal, rather than a merely descriptive predicate, it is a term with which we associate conditions of identity and persistence for objects. As a result, anything that counts as a person will have the property *being necessarily a person*. Similarly, if ‘person’ can only be applied where ‘worthy of moral concern’ is applied, all persons will have the property *being necessarily worthy of moral concern*. Given that people have these conventional modal properties, we have a simple way of providing truth conditions for *de re* modal sentences. Because the rules have endowed all people with the modal property *being necessarily worthy of moral concern*, the *de re* modal sentence, ‘All people are necessarily worthy of moral concern’ is true. Similarly, if the name ‘Angus’ is introduced as a name for a person, ‘Angus is necessarily worthy of moral concern’ will be true. This story has the advantage of being able to maintain the natural account of modal predication suggested above; modal predicates operate just like other predicates on this view. ‘A is necessarily F’ is true just so long as

¹⁷² Ibid, pp.50–58, pp.69–78.

the referent of A has the property of being necessarily F, for example. As we'll see however, this kind of view threatens to make A itself dependent on convention.

3.2 Modal properties and conditions of existence, identity and persistence

On the strategy suggested in section 3.1, LMC treats the modal properties had by an object as dependent on conventional linguistic rules. However, a number of authors (some friendly to the proposal and others unfriendly) have argued that theories in this vein are committed to conventionalism about objects themselves.¹⁷³ The gap between conventionalism about modal properties and conventionalism about objects is bridged by the existence, identity and persistence conditions (EIP conditions) that determine the nature of an object and what it takes for the object to exist. The argument from modal conventionalism to object conventionalism proceeds in three steps. The first step is to establish a relation of dependence between the EIP conditions of an entity and its modal properties, and the second step is to establish that if that relation of dependence holds, conventionalism about modal properties entails conventionalism about EIP conditions. Finally, the third step is to show that conventionalism about something's EIP conditions entails that whether or not the object exists depends on convention.

Step 1: EIP conditions have modal import

Each object comes with a set of existence conditions, identity conditions and persistence conditions.¹⁷⁴ The existence conditions of an object determine what states of the world count as containing the object; they determine how things need to be in order for the object to exist. Relatedly, the identity conditions of an object determine what something needs to be like in order to qualify as identical to that object. Finally, its persistence conditions determine what changes it can undergo while continuing to exist and while retaining its identity. These EIP conditions have modal implications.¹⁷⁵ When we talk about the conditions under which an object *would* exist, or the conditions in which it *could* survive, we are making modal claims. To say that a table could not continue to

¹⁷³ A friendly version of the argument can be found in Iris Einheuser's 'Towards a Conceptualist Solution to the Grounding Problem'. Less friendly versions can be found in chapter 1 of Crawford L. Elder, *Real Natures and Familiar Objects* (Cambridge, Mass: The MIT Press, 2004) and chapter 4 of Michael Rea, *World Without Design: The Ontological Consequences of Naturalism* (Oxford: Oxford University Press, 2002).

¹⁷⁴ That objects have existence and identity conditions is not universally accepted. In particular, Kripke is famous for rejecting them in *Naming and Necessity* (eg. pp.46-47). See also Michael Jubien, 'The Myth of Identity Conditions,' *Philosophical Perspectives* Vol.10 (1996): pp.343-356. Ultimately, the version of LMC pursued in chapter 6 also denies that objects have identity conditions. However, the argument set out here only requires that *if* objects have modal properties *then* they have identity conditions, and *vice versa*.

¹⁷⁵ See Thomasson, *Ordinary Objects* pp.62-63 for an argument that existence and identity conditions are modal in nature. A similar argument can be found in Michael Rea, *World Without Design* pp.82-85.

exist if it were ground into sawdust, for example, is to say that the table has a modal property: the property *not being possibly sawdust*. In general, then, an object's having some set of EIP conditions will guarantee that object's having certain modal properties.

Similarly, and most importantly for LMC, the modal properties had by an object guarantee that it has certain EIP conditions. If it is a feature of the table that it is not possible for it be a pile of sawdust, then we have an explanation for why it is not identical to the pile of sawdust that exists an hour from now, post grinding. If the table is not possibly sawdust, then a condition of identity for the table must be that it's not identical to any pile of sawdust; a condition of persistence for it must be that it cannot survive the grinding process. Similarly, if it's a modal property of the table that it's necessarily solid, then it's a condition of existence for the table that it can only exist in scenarios where there's something solid.

The modal nature of EIP *conditions* is what distinguishes them from mere existence, identity and persistence *facts*. To state an identity fact is to say that some object is identical to another, and to state an existence fact is to say that something exists. To state a persistence fact is to say that something exists both at t_1 and at t_2 , and all times in between. By contrast, to state an identity condition is to describe the sorts of things to which an object *could* be identical, and to state an existence condition is to state the circumstances in which something *could* exist. This suggests that having certain modal properties is sufficient for an object to have certain EIP conditions. We saw this in the case of the table: being not possibly sawdust guarantees that the table's identity conditions rule out its being identical to sawdust, and *vice versa*.

Step 2: From conventionalism about modal properties to conventionalism about EIP conditions

This step in the argument is relatively straightforward. The relation of dependence between something's EIP conditions and its modal properties means that if its modal properties depend on conventional linguistic rules, its EIP conditions do too. According to the version of LMC suggested in section 3.1, the rules governing referring terms determine what modal properties are had by an object. But, having some modal property guarantees that an object has certain EIP conditions. So, by making it the case that an object has a certain modal property, linguistic conventions also have the power to make it the case that the object has a certain EIP conditions. For example, if the rules governing 'table' and 'sawdust' make it the case that the table isn't possibly sawdust, they also make it the case that a condition of existence for the table is that it isn't a pile of sawdust.

Step 3: From conventionalism about EIP conditions to conventionalism about objects

The final step in the argument is to show that if an object's EIP conditions are conventional, then the object itself is also conventional. The case for this claim is put by Crawford Elder as follows. According to conventionalism about identity and existence conditions, he says:

That some switches of properties amount to ceasings-to-exist, that others amount to comings-into-existence, whereas yet others amount to mere alterations, is the case only relative to us and our conventions. In other words, that the existences of the world's objects begin where they do, and end where they do, will not be independent of us and our conventions.¹⁷⁶

Michael Rea makes a similar case:

What a thing can and cannot survive depends on what kind of thing it is; and what kind of thing it is depends on what it can and cannot survive. Thus, if the facts about what a thing can and cannot survive depend upon its relations to other contingent things, then so also do the facts about what kind of thing it is. So, if accepting this... commits naturalists to modal antirealism, then it also commits them to the denial of RMO [Realism about Material Objects].¹⁷⁷

The thought that Elder and Rea are expressing is that if EIP conditions depend on convention, the matter of which objects *in fact exist* will depend partly on convention. Mere switches of properties alone won't determine that something begins or ceases to exist; they must combine with conventional facts about which of those switches constitute comings-into-existence or ceasings-to-exist. For example, the conventional fact that the table can't survive being ground into sawdust combines with switches of qualitative properties to make it the case that a ceasing-to-exist occurred. If the table had been possibly ground into sawdust, then post grinding nothing would have gone out of existence, and the object pre-grinding would have been identical to the object post grinding.

The fact that the table exists *at all* depends on its existence conditions being fulfilled. In general, some distribution of qualitative properties across space and time is not enough to determine what exists. Rather, the distribution of qualitative properties must combine with conditions of existence and identity to determine which groups of those properties

¹⁷⁶ Elder, *Real Natures and Familiar Objects* p.9.

¹⁷⁷ Rea, *World Without Design* pp.95-96.

are instantiated by a single object, and which are not.¹⁷⁸ So, whether some object exists is determined in part by its conditions of existence, and if those conditions are determined by conventional linguistic rules, whether the object exists will in part be determined by conventional linguistic rules. Similarly, whether object A and B are identical will be determined by their conditions of identity. And, given that those conditions of identity are determined by conventional linguistic rules, whether or not A and B are in fact identical will depend on conventional linguistic rules.

On the ‘natural reading’ suggested in section 3.1, modal properties are genuine features of objects, just like non-modal properties.¹⁷⁹ However, the argument outlined above demonstrates that if such modal properties are treated as dependent on the linguistic rules governing terms, the question of what exists and what is identical to what is also dependent on conventional linguistic rules. With Rea, I take this position to constitute a kind of anti-realism or conventionalism about objects themselves. At a minimum, realism or non-conventionalism about objects should require that the answers to questions like ‘How many objects are in the room?’ and ‘How old is that tree?’ should be answerable independently of convention; as it stands LMC is committed to denying that claim.

3.3 Conventional modal properties and Leibniz’s Law

Sidelle provides an alternative route from modal conventionalism to object conventionalism that does not appeal to EIP conditions.¹⁸⁰ Sidelle’s strategy is to argue that combining realism about objects with conventionalism about modal properties entails that a single object can have incompatible modal properties.¹⁸¹ The argument makes use of the conventionalist picture of modal properties outlined in section 3.1 according to which the modal properties of objects are determined by the rules governing linguistic expressions.

¹⁷⁸ Plausibly, it may be that EIP conditions don’t themselves constitute *determiners* of what exists. Instead, they might be thought of as the things that make it the case that some qualitative distribution determines the distribution of objects that it does, rather than a distinct one. In that case, EIP conditions are still difference makers when it comes to what exists, in that different EIP conditions mean different distributions of objects, holding fixed some distribution of qualitative properties.

¹⁷⁹ Note that in chapter 7, I will provide truth conditions for *de re* modal sentences that do not rely on such modal properties; however, the view does allow for the construction of a deflationary kind of ‘modal property’ that is simply a construction out of sets of predicates. In section 7.7, I argue that this second sort of modal property does not fall prey to the argument described here.

¹⁸⁰ This argument can be found in Alan Sidelle, ‘Modality and Objects,’ *The Philosophical Quarterly* Vol. 60, No. 238 (2010): pp.109-125. A similar argument can also be found in Gillian Russell, ‘Meaning and Necessity,’ in Gillian Russell and Delia Graff Fara eds., *The Routledge Companion to the Philosophy of Language*, (New York: Routledge, 2012) pp.782-794.

¹⁸¹ Here, ‘object realism’ can be taken as a catch-all term for any theory according to which at least some objects exist, and facts about which objects exist that do not depend on conventional human practices.

The modal conventionalist who maintains object realism should hold that the following scenario is possible.¹⁸² I could introduce the name ‘Goliath’, fixing its reference to some convention-independent object, associating the name with the sortal ‘statue’.¹⁸³ The linguistic rules governing ‘statue’ will determine which modal predicates can correctly be applied to ‘Goliath’. In particular, ‘Goliath is not possibly squashed’ will be true, since the rules associated with ‘statue’ prohibit its application where ‘squashed’ applies.¹⁸⁴ At the same time, however, I could introduce the name ‘Lumpl’, fixing its reference to one and the same object.¹⁸⁵ ‘Lumpl’ is associated with the sortal ‘lump’, and thus is governed by different linguistic rules to those governing ‘Goliath’. The meaning of ‘lump’ terms is such that the sentence ‘Lumpl is possibly squashed’ is true, since the relevant linguistic rules do not rule out applying the term ‘lump’ where ‘squashed’ applies. However, the linguistic rules governing the two names *both* ought to succeed in endowing the object with modal properties, according to a version of LMC in the style discussed in 3.1. By introducing the names ‘Goliath’ and ‘Lumpl’ for one and the same entity as described here, I make it the case that the entity in question has the property of being possibly squashed *and* the property of being not possibly squashed. Therefore, the following sentences are all true in the scenario described:

- (3) Goliath is identical to Lumpl.
- (4) Goliath is not possibly squashed.
- (5) Lumpl is possibly squashed.

(3) is true by supposition; we are supposing that ‘Lumpl’ and ‘Goliath’ are introduced for one and the same non-conventional object. (4) and (5) are made true by linguistic rules governing our terms, as must be the case according to LMC. However, holding all of (3), (4) and (5) to be true commits the object realist modal conventionalist to a contradiction. If (3) is true, then (4) and (5) together amount to the claim that one and the same entity is both possibly squashed and not possibly squashed.

It should be clear how cases like the statue / lump case will be easy to construct if you accept object realism and modal conventionalism. Briefly, here is one more case. Take any man who remains unmarried throughout his lifetime. This entity will constitute both a

¹⁸² The example used here is a variant of the case famously introduced in Allan Gibbard, ‘Contingent Identity,’ *Journal of Philosophical Logic* Vol. 4, No.2 (1975): pp.187-221.

¹⁸³ Of course, I can’t fix the reference of ‘Goliath’ to just *any* object. It must be one that meets the application conditions for ‘statue’.

¹⁸⁴ Here and throughout, ‘is possibly squashed’ should be interpreted as ‘possibly exists as a squashed entity’ or ‘possibly survives squashing’ rather than as ‘is possibly such that someone would be able to squash it.’ Presumably, Goliath *is* possibly squashed in the latter unintended sense.

¹⁸⁵ In the example used by Sidelle in ‘Modality and Objects’, a second term is only counterfactually introduced for the object, rather than actually. However, by using a case in which two names are *actually* introduced for a single object, we can bypass attempts to avoid the problem by denying that $\diamond\phi$ entails $\diamond\neg\phi$.

person and a bachelor. Therefore, we can introduce two different names for this object, one ('Bob') associated with the sortal 'person' and the other ('Bill') associated with the sortal 'bachelor'. Given that the rules governing 'bachelor' determine that it can only be applied where 'unmarried man' applies, any name introduced as a 'bachelor' name will inherit that rule. By contrast, no such rule applies to 'person' names. Therefore, given object realism and modal conventionalism, we will be committed to:

- (6) Bob is identical with Bill.
- (7) Bob is not necessarily unmarried.
- (8) Bill is necessarily unmarried.¹⁸⁶

Sidelle's solution to this problem is to reject (3) and (6). He argues that it cannot be the case that Goliath is identical to Lump1, since the modal properties had by one differ from those had by the other. Insofar as names governed by incompatible rules determine incompatible modal properties for their referents, he says, they can never co-refer. This makes use of what is referred to as the 'dualist' or 'pluralist' strategy for dealing with the statue / lump case: take at face value the datum that Lump1 and Goliath possess different properties, and infer by Leibniz's Law that they must be distinct entities.¹⁸⁷

However in the case of LMC, the dualist strategy leads to object conventionalism; giving up (3) and (6) also means giving up object realism. To see why this is the case, recall that by hypothesis we were assuming that some non-conventional facts have determined what objects exist and which objects are identical to which, and then selected one of those objects to be the referent of the two names. Now, though, by adopting a conventionalist account of how the object gets to have its modal properties, we are forced to accept that there are *two* objects where our non-conventionalist theory of objects said that there was only one. As a result, the outcome is not merely that the statue and the lump must be distinct, as many theorists already accept; the outcome is that what *makes* them distinct is linguistic conventions. Assume any realist view you like about objects, according to which there exists some object O. According to LMC, we should be able to fix the reference of two distinct names governed by distinct rules to O. In doing so, we will be able to confer incompatible modal properties upon the object in question, generating a contradiction. By Sidelle's reasoning, we must then infer by Leibniz's Law that there are two objects where we thought there was one. We will thereby be forced to accept that

¹⁸⁶ As a matter of fact, we do not tend to treat 'bachelor' as a sortal, as we don't tend to treat *bachelors* as entities with their own conditions of persistence independent of those had by *people*. The point here is simply that we *could* treat 'bachelor' as a sortal insofar as the linguistic rules are conventional.

¹⁸⁷ For examples of this strategy, see Kit Fine, 'The Non-Identity of a Material Thing and Its Matter,' *Mind* Vol. 112, No. 446 (2003): pp.195-234, Louis deRosset, 'What is the Grounding Problem?' *Philosophical Studies* Vol. 156 (2011): pp.173-197 and Alan Sidelle, 'Coincidence: The Grounding Problem, Object-Specifying Principles, and Some Consequences,' *Philosophical Papers* Vol. 45, No.3 (2016): pp.497-528.

which objects exist is a matter determined by conventional linguistic rules, not by our preferred realist theory of objects.

One strategy for salvaging object realism immediately suggests itself. In setting up his problem, Sidelle assumes that our referencing-fixing practices can succeed in making two terms, governed by incompatible rules, pick out a single object. However, an object realist tempted by LMC might deny this. One way to do so would be to appeal to a theory of objects that *begins* with coincident objects. Then, if there are enough objects in the vicinity when we attempt our ‘naming ceremony’ for Lump1 and Goliath, our attempt to fix the reference of the two names to one and the same object will fail. A natural way to argue for this would be to claim that for every set of linguistic rules that can govern a referring term, there is a distinct, language-independent object that’s already part of some realist ontology. On this line of thought, it was a mistake to assume from the beginning that Lump1 and Goliath were the same object. Instead, the objection runs, the correct realist theory of objects is fine-grained enough to make Lump1 and Goliath distinct, and to render it impossible to fix the reference of two names governed by incompatible rules to a single object.¹⁸⁸

While this strategy might seem attractive, it is unable to solve the present problem. However fine-grained your realist carving of the space of objects might be, it cannot be so fine as to distinguish *merely* modal differences if it is to be compatible with LMC. If a theory of objects does not distinguish between merely modal differences, however, it will always be the case that we can introduce names governed by incompatible linguistic rules for one and the same object, and thereby determine contradictory modal properties for it. This will be possible because the linguistic rules governing two sortals can be such that both sortals apply to a single object, but endow different modal properties on that object. In Thomasson’s terminology, this will be the case when the sortals share overlapping *application* conditions, but have different *coapplication* conditions. If sortals F and G have overlapping application conditions, some F will also be a G. However, different coapplication conditions for the two terms will mean that ‘same F’ does not imply ‘same G’.

LMC will not be able to accept any theory of objects according to which there is a distinct object in the world for every set of alternative linguistic rules that might govern some sortal. Such a theory would require that objects already come built in with modal

¹⁸⁸ Some authors have argued that Lump1 and Goliath can be distinguished non-modally. Kit Fine, for example, argues that statues and lumps of clay (or statues and pieces of alloy) have different non-modal properties; a statue can be Romanesque, for example or well or badly made. A lump of clay or a piece of alloy, he argues, cannot. (See Fine, ‘The Non-Identity of a Material Thing and Its Matter,’ p.206.)

features.¹⁸⁹ And if there are modal properties that are independent of linguistic conventions, the resulting theory does not qualify as a version of LMC; it fails condition b) set out in the previous chapter.¹⁹⁰ On the other hand, if we accept a theory of objects that does not recognise modal differences, we will be able to introduce names associated with overlapping application conditions and different coapplication conditions for a single object, thus generating contradictions.

3.4 Is object conventionalism so bad?

As noted above, Sidelle argues that the right way to resolve this conflict is to give up on object realism; he suggests modal conventionalists ought to accept that objects are individuated by their modal properties, and embrace object conventionalism. He says:

If what it is to be an individual of a certain sort is to have certain features not only actually, but essentially, then the conventionalist has all the same reasons to think that if there are any such individuals, they must also not be ‘fully independent’, but should arise out of our individuating practice, which is our way of articulating the world.¹⁹¹

However, most of those who argue that LMC leads to object conventionalism see the commitment as a negative consequence of the view, rather than a positive one. Elder for example, says, ‘Conventionalism, I contend, ultimately founders on its refusal to allow that any objects in the world possess mind-independent existences.’¹⁹² Stephen Yablo notes that this commitment to object anti-realism makes Sidelle’s LMC ‘a far more radical doctrine than it initially appeared.’¹⁹³

Further examination of Sidelle’s view will reveal just how radical it is. According to Sidelle, anything with modal properties counts as a conventional entity, and in virtue of this fact a vast range of entities are taken to depend for their existence on linguistic rules.

¹⁸⁹ The resulting picture would be a kind of ‘plenitude’ view like those set out by Stephen Yablo, John Hawthorne and Sarah-Jane Leslie. According to one version of the plenitude view, every ‘modal profile’ that could be had by some object is instantiated in the world. As such, in the space occupied by Goliath / Lump there is something that can survive squashing, something that can’t, something that is necessarily beautiful, something that is necessarily exactly the height of the statue, and so on. This view allows for a minimal conventionalism in that it is up to us which of these objects we choose to talk about, but it countenances non-conventional modal properties, and as such is not a version of LMC. See Stephen Yablo, ‘Identity, Essence and Indiscernibility,’ *The Journal of Philosophy* Vol. 84, No. 6 (1987): pp.293-314, John Hawthorne, ‘Plenitude, Convention and Ontology,’ in *Metaphysical Essays* (Oxford: Oxford University Press, 2006), pp.54-70 and Sarah-Jane Leslie, ‘Essence, Plenitude and Paradox,’ *Philosophical Perspectives* Vol. 25 (2011): pp.277-296.

¹⁹⁰ Recall that the second condition for a theory to qualify as a variety of LMC provided in section 2.4 was that all modal properties are dependent on conventional linguistic rules.

¹⁹¹ Sidelle, *Necessity, Essence and Individuation* p.57.

¹⁹² Elder, *Real Natures and Familiar Objects* p.20.

¹⁹³ Yablo, ‘Review of *Necessity, Essence and Individuation*’ p.5.

Sidelle focuses the majority of his attention on ordinary, medium-sized objects; however, his account will extend to a far wider range of entities. For example, fundamental physical entities have modal properties so long as the terms referring to them are rule-governed, and on Sidelle's account, they must be conventional in virtue of having those properties. Similarly, if properties are taken to themselves have modal properties, they too will depend for their existence on conventional linguistic rules. Sidelle is committed to holding that a vast range of entities that are normally considered to be language-independent in fact depend on us for their existence. His object conventionalism therefore has the consequence that much of our talk fails to adequately latch onto the convention-independent state of the world. Our talk of people, dogs, trees, quarks and genes does not refer to language-independent entities on Sidelle's view, but instead refers to entities that depend in part for their existence on the talk itself.

Sidelle is quick to note that despite his object conventionalism, there remain entities in his ontology that lack modal properties and therefore do not depend on language. He notes that he is not committed to a view whereby *everything* is language-dependent. In particular, he claims that the world is at bottom composed of 'inobjectual stuff' that has qualitative properties distributed across space and time, but contains no objects.¹⁹⁴ However, insofar as there are meaning-independent entities in Sidelle's ontology, it is difficult for him to claim that we succeed in referring to them. Ordinary objects are conventional, on Sidelle's view, due to linguistic rules associated with the terms that pick them out. In standard cases, a referring term is associated with linguistic rules that determine modal properties for its referent. The referent itself is taken to be a conventional entity in virtue of having modal properties endowed upon it in this way. In order to claim that some referring terms pick out non-conventional entities, Sidelle would have to argue that in some cases, one or more steps in this process are blocked. In particular, he would have to argue either a) some referring terms are not governed by linguistic rules, or b) the linguistic rules governing some referring terms fail to determine modal properties for their referents. It is not out of the question that Sidelle could hold that in some cases one step of the above process fails. However, he would then need to provide a non-arbitrary account of how these 'special cases' of referring terms differ from the norm. That is, he would need to say why it is the case that some terms are governed by linguistic rules and some terms are not, or why it is the case that some linguistic rules bestow modal properties while others do not.

¹⁹⁴ Sidelle, *Necessity, Essence and Individuation* pp.50-58.

Assuming that such a principled account can be given, cases of terms referring to entities with no modal properties will nonetheless be problematic. According to Sidelle's theory, sentences of the form 'A is necessarily / possibly F' are true when the referent of 'A' has the modal property of being necessarily F or possibly F. But if A has no modal properties, all sentences of the form 'A is necessarily / possibly F' will be false. This suggests that accepting the existence of objects like A commits Sidelle to the truth of apparently contradictory pairs of sentences. For example, 'A is necessarily F' will be false, as will 'A is possibly not F', and therefore the negation of both sentences will be true. However, 'not necessarily F' is normally taken to be equivalent to 'possibly not F'. It appears that Sidelle is faced with a dilemma: he must either give up on the idea that we can refer to language-independent entities, or he must give up on the interdefinability of modal operators. Either would be a cost to his theory.

These issues seem particularly severe when applied to Sidelle's own ontological theory. As noted above, Sidelle refers to the language-independent part of his ontology as 'inobjectual stuff'. For this reason, 'inobjectual stuff' ought to be the paradigm case of a term that refers to an entity that has no modal properties and is therefore language-independent. Via the argument above, Sidelle must therefore hold that either a) 'inobjectual stuff' is not governed by linguistic rules, or b) the linguistic rules governing 'inobjectual stuff' fail to confer it with modal properties. However, Sidelle must provide some principled reasons for accepting either of these claims. When setting out his theory, Sidelle *appears* to accept linguistic rules governing 'inobjectual stuff'. For example, it's plausible that term 'inobjectual stuff' should not be applied where 'contains objects' is applied. Assuming that Sidelle does succeed in using 'inobjectual stuff' to pick out a convention-independent entity, the problems noted above still apply. Specifically, there will be pairs of true sentences on Sidelle's view that are apparently contradictory. For example, 'It's not the case that inobjectual stuff is necessarily extended in space' will be true, as will 'It's not the case that inobjectual stuff is possibly not extended in space.' If Sidelle wants to maintain that these sentences do not contradict one another, he will have to give up on the attractive principle that 'necessary' and 'possible' are interdefinable.

Sidelle might wish to deny that we can refer to entities that lack modal properties, but nonetheless maintain that we can quantify over them. Nonetheless, problems would still apply. In particular, he would be committed to: $\exists x(\sim\Diamond\sim Fx \ \& \ \sim\Box Fx)$. He would also be committed to $\exists x(Fx \ \& \ \sim\Diamond Fx)$. It's also worth noting also that names confer modal properties on objects *via being associated with sortals*. For example, the referent of 'Josephine' is necessarily worth of moral concern because 'Josephine' is associated with

‘person’. That suggests that merely falling into the extension of a sortal ought to be enough for something to gain modal properties, even if the thing in question isn’t named; after all, nameless people are still worthy of moral concern.¹⁹⁵ If so, entities would need to fail to fall under any sortals in order to qualify as lacking modal properties.

Sidelle’s theory is committed to the existence of inobjectual stuff that lacks modal properties. However, by Sidelle’s own lights, merely talking about that stuff may be enough to endow it with modal properties. If so, the theory is inconsistent. What’s more, it’s worth noting that these problems will apply to *any* version of LMC that adopts the strategy described in section 3.1, not just Sidelle’s. Any such theory runs the risk of being committed to the claim that any entity about we can successfully talk depends for its existence on our talk itself.¹⁹⁶

Ultimately, the two arguments set out in 3.2 and 3.3 suggest that LMC may be committed to a widespread conventionalism about ontology. However, one might argue that the empiricist motivations outlined for LMC in the introduction count in *favour* of ontological anti-realism, rather than against it. And, if the same factors that motivate LMC also motivate the rejection of object realism, the ‘radical’ consequences described above may not seem so radical to proponents of the view.¹⁹⁷ Perhaps the most famous supporter of both LMC and ontological anti-realism is Carnap.¹⁹⁸ A quick description of Carnap’s view will make clear how the two positions are related and why they may be motivated by the same empiricist factors. According to Carnap, all questions must be posed with the context of a *framework*.¹⁹⁹ Here, a framework can be thought of simply as a language. On Carnap’s view, for questions like ‘Do numbers exist?’ or ‘Are the statue and the lump identical?’ to be posed within a framework is for them to be posed in a rule-governed language. As such, their answers will be at least partly determined by the rules that govern the language, and the meanings of its terms. Carnap posits two kinds of ‘framework internal’ questions. The first kind is those questions whose answers are

¹⁹⁵ See chapter 7 for detail on how quantified modal sentences should be assigned truth conditions by LMC.

¹⁹⁶ Chapter 4 discusses in detail how this problem applies to Thomasson’s view. Note that Einheuser’s theory (see section 2.4.3) and Goswick’s theory (2.4.4) are both object conventionalist, but do not fall prey to many of the issues facing Sidelle’s theory that are mentioned here. Sidelle’s view faces particular trouble because the modal properties of objects are taken to depend on how we talk about them. Because neither Einheuser’s nor Goswick’s theories use linguistic rules as the basis of modal truth, they can maintain that we succeed in referring to the non-conventional parts of their ontology. Note that Einheuser also explicitly endorses some non-conventional modal properties: those had by fundamental physical entities.

¹⁹⁷ Thank you to the audience at the Australian National University for making this point during my 2017 presentation based on this chapter.

¹⁹⁸ See Carnap, ‘Empiricism, Semantics and Ontology’. Also see David J. Chalmers, ‘Ontological Anti-Realism’ and Matti Eklund ‘Carnap and Ontological Pluralism,’ in David J. Chalmers, David Manley and Ryan Wasserman eds., *Metametaphysics: New Essays on the Foundations of Ontology* (Oxford: Clarendon Press, 2009) for discussion of Carnap’s ontological anti-realism.

¹⁹⁹ At least, *almost* all meaningful questions are framework internal; Carnap only countenances framework external questions if they are about the pragmatics of adopting a given framework.

determined partly by the framework itself and partly by the external world. These are empirical questions. The second sort of framework internal question is one whose answer is determined *fully* by the framework itself. According to Carnap, ‘metaphysical’ questions like ‘Do numbers exist?’ and ‘Are the statue and the lump identical?’ are answered completely by the rules governing the framework itself. In other words, their answers are analytic. Carnap’s thought is that thorough-going empiricists must treat *any* questions that are not empirical as dependent on linguistic rules. And, ontological questions fall into that category.

If Carnap is right, the empiricist motivation for LMC is also a motivation for ontological anti-realism, and Sidelle’s ‘radical’ conclusion ought to be embraced. Ultimately, some proponents of LMC will endorse the positivist view that all metaphysical claims are either meaningless or analytic. That group may well be untroubled by a commitment to the position that questions about what exists are answered analytically. However, a number of different positions fall under the broad category of ‘empiricism’ or ‘naturalism’, not all of which are sympathetic to the wider positivist project. Many modern-day naturalists are ontological realists. What’s more, some of the motivations for LMC cited in the introduction are exactly the kinds of metaphysical considerations that positivists such as Carnap would have regarded with suspicion. Examples include the claim that a parsimonious theory is to be preferred, and the claim that primitivism about modality is to be avoided if possible. These kinds of motivations do not count in favour of ontological anti-realism. At bottom, empiricism is the view that empirical investigation and the methods of science are privileged ways of gaining knowledge. One respectable way of construing empiricism is as taking for granted a basic realist position about the external world, and about the accuracy of the information the senses provide about that world. Realism about trees, tables and quarks fits neatly into such a view.

Finally, even if a commitment to object conventionalism is not sufficient reason to reject LMC outright, it seems clear that such a commitment will detract from its plausibility according to at least some of its potential proponents. In general, it is a virtue of a theory about the nature of some domain that it remains compatible with a variety of independently plausible theories concerning the nature of other domains. It is a virtue of an ethical theory, for example, if it remains compatible with a variety of views when it comes to personal identity. Similarly, it is a virtue of a theory of modality if it remains compatible with a variety of different theories about the nature of trees, tables, quarks and so on. As such, LMC should seek to remain compatible with object realism if it can.

3.5 Abelardian predicates

Treating modal predicates as ‘Abelardian’ may represent a way out of Sidelle’s argument that LMC leads to object conventionalism. Recall that Sidelle’s argument aimed to show that the combination of LMC and object realism led to contradictions. For example, introducing the names ‘Lumpl’ and ‘Goliath’ for a single clay statue commits us to the claim that the object is both possibly squashed and not possibly squashed insofar as ‘Lumpl’ is associated with the ‘lump’ sortal and ‘Goliath’ is associated with the ‘statue’ sortal. Sidelle’s strategy was to deny that Lumpl and Goliath are the same object, and hold that both are conventional. However, there is another option available. Rather than holding that ‘Lumpl’ and ‘Goliath’ pick out different objects, LMC could take modal properties themselves to be sortal-relative. If the meaning of ‘is possibly squashed’ differs depending on the sortal term with which it is associated, ‘Lumpl is possibly squashed’ can be made compatible with ‘Goliath is not possibly squashed’ without denying that Lumpl and Goliath are identical.

Taken from Quine, the following example has often been cited as an uncontroversial case in which the meaning of a predicate depends on the subject term it predicates.²⁰⁰ Due to his size, the Italian painter Giorgio Barbarelli was named ‘Giorgione’, meaning ‘Big George’. Quine argues that the following three sentences are all true:

- (9) Giorgione is Barbarelli.
- (10) Giorgione is so called because of his size.
- (11) Barbarelli is not so called because of his size.

While their syntactic form appears to make (10) contradict (11) when (9) is true, intuitively this is not the case. One explanation for this is that the meaning of the predicate ‘is so called because of his size’ differs depending on the subject term. Following Noonan, such predicates have been called ‘Abelardian’.²⁰¹ In the above case, their shared referent is not the only way the two subject terms contribute to the truth conditions of sentences (9) – (11). Instead, the names themselves can affect the meaning of the predicate that follows. Plausibly, ‘is so called because of his size’ picks out the property of being called ‘Giorgione’ because of his size when the subject term is ‘Giorgione’, but picks out the property of being called ‘Barbarelli’ because of his size when the subject term is ‘Barbarelli’, despite the fact that the names co-refer. The result is that sentences (10) and (11) are both true and do not contradict each other.

²⁰⁰ See W. V. Quine, ‘Reference and Modality,’ in *From a Logical Point of View: Logico-Philosophical Essays*, Rev. 2nd ed. (1961; Repr. Cambridge, Mass: Harvard University Press, 1980).

²⁰¹ Harold W. Noonan, ‘Indeterminate Identity, Contingent Identity and Abelardian Predicates,’ *The Philosophical Quarterly* Vol. 41, No. 163 (1991): pp.183-193.

Some philosophers have argued that modal predicates are Abelardian.²⁰² In parallel to ‘is so called because of his size’ the idea is that modal predicates like ‘is possibly squashed’ have different meanings in the context of different sentences depending on the subject term. As with ‘is so called because of his size,’ the referent of the subject term is not the only way on this view for the term to contribute to the truth conditions of sentences involving modal predication. LMC can adopt this strategy by arguing that the linguistic rules associated with a name also affect the truth conditions of such sentences, and that they do so by altering the meaning of the predicate. For example, since ‘Lumpl’ is a ‘lump’ term, the predicate ‘is possibly squashed’ could be taken to mean ‘is possibly squashed *qua lump*’ when applied to ‘Lumpl’. Similarly, since ‘Goliath’ is a ‘statue’ term, the predicate ‘is possibly squashed’ could pick out the property ‘is possibly squashed *qua statue*’ when applied to ‘Goliath’. The result is that the following three sentences are not contradictory:

- (3) Lumpl is Goliath
- (4) Lumpl is possibly squashed
- (5) Goliath is not possibly squashed

Since the properties of being possibly squashed *qua lump* and not possibly squashed *qua statue* are not incompatible, there is no problem with a single object possessing both.

David Lewis endorses a counterpart-theoretic version of this strategy.²⁰³ He argues that different subject terms can invoke different counterpart relations that are relevant for assessing a *de re* modal sentence. For example, he argues that ‘My body is possibly distinct from my body’ is false, but ‘I am possibly distinct from my body’ is true, even though I am identical to my body at any given time. This is because the first sentence invokes the *bodily* counterpart relation, while the second sentence invokes the *personal* counterpart relation. Once again, if counterpart relations are sortal-relative, it is not contradictory for a single object to have a counterpart relative to one sortal that it lacks relative to a different sortal. Lumpl / Goliath can have a lump-counterpart that is squashed while lacking any statue-counterpart that is squashed.

If this strategy is viable, Sidelle’s motivation for adopting object conventionalism is undercut. LMC can accept that Lumpl / Goliath is a single, convention-independent object and hold that we endow it with sortal-relative modal properties via our linguistic rules. When we fix the reference of ‘Lumpl’ to the object, we endow it with the property

²⁰² See for example Noonan (Ibid).

²⁰³ David Lewis, ‘Counterparts of Persons and Their Bodies,’ *The Journal of Philosophy* Vol. 65, No. 8 (1971): pp.203-211.

of being possibly squashed *qua* lump. When we fix the reference of ‘Goliath’ on the other hand, we make it the case that it has the property of being not possibly squashed *qua* statue. Both these properties, however, can be picked out by the predicate ‘is possibly squashed’. The predicate is context sensitive; its meaning is influenced by the subject term of the sentence.

Some philosophers have been suspicious of the claim that modal predicates are Abelardian.²⁰⁴ One reason is that it seems difficult to provide any convincing motivation for thinking that modal predicates are context sensitive apart from a desire to solve the problem of cases like Lump1 and Goliath without commitment to dualism or to coincident objects. That worry doesn’t apply to LMC, however, because it *can* provide independent reasons for why we would think that modal predicates are context sensitive. Since it is linguistic rules governing referring terms that determine the modal properties had by objects, it is to be expected that modal properties are relativised to referring terms. For example, since it is in virtue of the rules governing ‘Lump1’ that its referent has any modal properties at all, it is unsurprising that its referent’s modal properties are relative to which name is used.

However, the Abelardian predicates view is not entirely devoid of problems. Sidelle himself rejects this strategy, because he thinks we should be able to ask *of an object itself* what changes it could survive.²⁰⁵ If an object’s modal properties are relative to a sortal, there is no way to ask of the object *simpliciter* what its modal properties are. Instead, we can only ask about its modal properties *qua* lump, or its modal properties *qua* statue. Sidelle argues that such an outcome is unsatisfactory. His concerns bear similarity to the problems that arose via the first route from LMC to object conventionalism, as outlined in section 3.2. There, I argued that the conditions of existence, identity and persistence had by an object are related to its modal properties such that if the latter are conventional, the former are conventional too. As such, sortal-relative modal properties still mean sortal-relative existence and identity. There is no way to ask whether some object would exist in certain circumstances without relativising your question to a mode of referring to the object.

This suggests a second reason for why the Abelardian predicates strategy is unsatisfactory as it stands. Even if sortal-relative EIP conditions are acceptable, the Abelardian predicates strategy fails to block the route to object conventionalism discussed in 3.2. After all, the sortal-relative EIP conditions endowed on objects according to the

²⁰⁴ See for example Fine, ‘The Non-Identity of a Thing and Its Material Matter’.

²⁰⁵ Sidelle, ‘Modality and Objects’ pp.119-124.

Abelardian view still play a role in determining what changes in the world constitute ceasings-to-exist, what changes constitute comings-into-existence, and so on. Perhaps the Abelardian predicates strategy even makes things worse rather than better in light of the argument in 3.2. If our linguistic rules endow objects with sortal-relative modal properties and therefore sortal-relative EIP conditions, the question of what objects there are will be both conventional *and* sortal-relative, making for a very strange ontology indeed.

3.6 Heading deeper into the conventional maze

In this chapter, I've argued that one natural way for LMC to explain *de re* modal truth is to take the linguistic rules governing referring terms to endow objects with modal properties. However, opting for this strategy leaves LMC open to the threat of object conventionalism via two routes. On the one hand, the intimate relationship between modal properties and existence, identity and persistence conditions means that conventionalism about modal properties leads to conventionalism about what exists. On the other hand, conventionalism about modal properties in combination with realism about objects can lead to contradictions. While the use of Abelardian predicates helps to block the second route to object conventionalism, it cannot block the first. In the next chapter, I'll discuss whether Thomasson's 'easy ontology' and Stephen Schiffer's 'pleonastic' properties can be used to help LMC solve this problem. I will conclude that it can't; we must go deeper into the maze before we can get out.

CHAPTER 4

Thomasson, Schiffer and a Dilemma for Linguistic Modal Conventionalism

Chapter 3 left linguistic modal conventionalism saddled with conventionalism about objects. However, Amie Thomasson's theory potentially represents a route to reconciliation for LMC and object realism. Thomasson argues for 'simple realism' about objects, which she takes to be compatible with her linguistic rule based theory of modal truth described in chapter 2. Here, I argue that the approach Thomasson favours may be able to avoid object conventionalism, but only by giving up on the central theses of LMC. By avoiding commitment to the view that objects depend on conventional rules governing linguistic expressions, Thomasson must also reject the claim that modal truth depends on those rules. As a result, Thomasson's theory is unable to resolve the threat of object conventionalism faced by LMC. In section 4.1 below, I explain how the threat of object conventionalism raised in chapter 3 arises for Thomasson's modal normativism specifically. In 4.2, I provide Thomasson's case for how her view can avoid object conventionalism, and in sections 4.3 and 4.4 I assess that case. I argue that the Thomassonian strategy faces a dilemma: it can avoid object conventionalism, but only by rejecting LMC.

4.1 Thomasson: the threat of object conventionalism

In order to see how object conventionalism threatens Thomasson's view, it is helpful to begin (as she does) with an account of how her particular theory takes linguistic rules to be related to the existence and identity conditions of objects, and therefore to their modal properties.²⁰⁶ Recall that according to Thomasson, rules expressing the conditions under which a term can be correctly applied and reapplied play an important role in disambiguating reference. She makes her case for the existence of these linguistic rules by noting that without them, we are unable to explain how our terms achieve determinate reference.²⁰⁷ Given that we are causally related to a number of objects that are candidate referents for our terms, she argues that causal relations aren't enough to determine a referent.

²⁰⁶ Thomasson's view on existence and identity conditions and how they relate to linguistic rules can be found in Thomasson, *Ordinary Objects* pp.55-63.

²⁰⁷ Section 2.2 of this thesis explains this aspect of Thomasson's theory in detail. See chapter 2 of Thomasson's *Ordinary Objects* for further discussion of the role played by rules in fixing reference in her theory.

Rather, we need to associate terms with clear conditions of application and coapplication in order to single out one of those candidates as the referent of a term, excluding the rest. Application and coapplication conditions associated with a term help secure reference by singling out one set of existence and identity conditions had by its intended referent. In order for a term to pick out a single object, it's not enough even for a single region of space-time to be specified, because objects with distinct identity conditions might occupy that region. A table, for example, plausibly has different identity conditions to the collection of atoms from which it is constituted. Therefore, in order to secure determinate reference, we need to ensure that it's *either* the table *or* the collection of atoms that is the intended referent of the term.

Thomasson holds that the conditions of application for a term are intimately related to the conditions of existence for its referent, in that the referent of the term exists if and only if the application conditions of the term are fulfilled.²⁰⁸ Similarly, she argues that coapplication conditions associated with a term are intimately related to the identity conditions of its referent. Coapplication conditions allow a given singular term to be applied twice if and only if the entities to which it is applied are identical. Because they determine what existence and identity conditions an object must have in order to qualify as the referent of a term, these application and coapplication conditions can single out one object as the term's referent, thus solving the problem for achieving determinate reference noted above.

For Thomasson, then, 'A exists' is true just so long as the application conditions for 'A' are met. And 'A is identical to B' is true just so long as the coapplication conditions for 'A' and 'B' allow 'A' to be applied where 'B' is applied and *vice versa*. This means that application conditions governing a name 'fix' the existence conditions for its referent, and the coapplication conditions for a name 'fix' its referent's identity conditions, in the sense that a name's conditions of application and coapplication are guaranteed to correspond to its referent's conditions of existence and identity.²⁰⁹ Thomasson's view is that statements expressing conditions of existence and identity are analytic, and as such they are simply object language expressions of rules. Specifically, they are object language expressions of rules stating the application and coapplication conditions governing the terms in question. Returning to an example from chapter 3, a rule of application associated with 'table' might be, 'Do not apply "table" where "pile of sawdust" applies.' Then, a rule of coapplication for 'table' is, 'If a name associated with the sortal "table" has been successfully applied once, do not reapply it if "pile of sawdust" applies.' The sentence,

²⁰⁸ Ibid, p.55.

²⁰⁹ Ibid, pp.55-60.

‘No table is a pile of sawdust’ is then an analytic, object language expression of that rule. Thomasson says that statements of existence and identity conditions are simply object language expressions of rules that ‘use rather than mention’ the relevant terms.²¹⁰

In chapter 3, I argued that conditions of existence, identity and persistence have modal import; having certain EIP conditions guarantees that an object has certain modal properties. Thomasson agrees, noting that talk about such conditions is talk about ‘what sorts of changes an individual *could* undergo (or what variations is *could* tolerate) while still existing as one and the same.’²¹¹ This is in keeping with Thomasson’s view that modal sentences are also object language expressions of rules; they are analytic sentences with a modal adverb added to make explicit that what’s expressed is a rule, rather than a descriptive statement. On Thomasson’s view, then, insofar as identity conditions are fixed by linguistic rules, and the identity conditions had by an object guarantee that the object has certain modal properties, linguistic rules fix the modal properties had by objects too.

It can now be made clear how Thomasson’s view is susceptible to the threat of object conventionalism. As discussed, Thomasson holds that the application and coapplication conditions associated with terms determine the existence and identity conditions of their referents, and in doing so, fix their modal properties. One obvious way of interpreting this is as claiming that the rules governing terms make it the case that objects have the modal existence and identity conditions that they do, or in other words, as claiming that they endow objects with their modal properties. As argued in the previous chapter, however, the view that the modal properties had by objects are conventional is tantamount to the view that objects themselves are conventional. To briefly recap, this is because the modal existence conditions of objects play a part in determining what exists at a place and time, and the identity conditions of objects play a part in determining which things are identical to which at a place and time. Conventionalism about those conditions therefore entails conventionalism about what exists and what is identical to what. The argument for this link was that the conditions under which something exists or persists determine whether a change in qualitative properties in the world constitutes a single object undergoing a change, or one object going out of existence and another object coming into existence. Similarly, the identity conditions had by objects determine whether qualitative properties instantiated in different parts of space-time qualify as being had by a single object, or by multiple objects.²¹²

²¹⁰ Ibid, p.59.

²¹¹ Ibid, p.62.

²¹² See chapter 3, especially section 3.2, for more discussion.

Thomasson recognises that her view faces a threat from object conventionalism, but articulates that threat in a different way following an argument from Rea.²¹³ One way of interpreting Thomasson's claim that modal sentences are object language expressions of rules is as the view that linguistic rules make modal propositions true.²¹⁴ Rea argues, however, that endorsing that claim would constitute a commitment to object conventionalism. According to Rea, if all modal propositions owe their truth to linguistic rules, the proposition that some modal property is had by an object will owe its truth to linguistic rules. If the proposition that some modal property is had by an object is true due to linguistic rules, however, it will also be the case that the object's having the modal property it does is due to linguistic rules. In other words, we end up again with the result that the object's modal properties are endowed on it by the linguistic rules, which amounts to object conventionalism. As Rea puts it, if conventions make modal propositions true, 'then it follows that modal properties are exemplified in a region only if the matter in that region stands in particular contingent relations to human beings and their mental activity.'²¹⁵ The view that the truth of modal propositions is conventional represents a second, less direct route to object conventionalism. If Thomasson is to avoid the claim that objects have the modal properties they do due to linguistic conventions, she cannot take all modal propositions to owe their truth to convention.

4.2 Thomasson on avoiding object conventionalism

Unlike Sidelle, Thomasson does not embrace object conventionalism. Rather, she defends a position she calls 'simple realism,' according to which objects are neither 'ontologically shallow' nor 'thin and inconsequential'.²¹⁶ As such, it is important that her modal theory does not commit her to the view that objects are conventional in nature. In order to avoid this commitment, Thomasson needs to be able to deny that the linguistic rules she takes to govern terms:

- i) endow objects with modal properties, and secondarily, that they
- ii) make all modal propositions true.

²¹³See Thomasson's *Ordinary Objects* pp.64-68 for Thomasson's discussion of Rea's argument. The original argument can be found in Rea's *World Without Design* pp.85-96.

²¹⁴In chapter 5, I will argue that an articulation of LMC according to which the truth of modal propositions is conventional is also committed to other problematic consequences, such as conventionalism about non-modal truth.

²¹⁵Rea, *World Without Design* p.86.

²¹⁶See Thomasson *Ontology Made Easy* pp.145-158 for an explanation of simple realism.

As argued in the previous chapter, object conventionalism follows from i) and as per Rea's argument outlined at the end of the last section, ii) is sufficient for i).

Thomasson's strategy for avoiding commitment to ii) is to argue that that the contribution linguistic rules make to the truth of modal propositions is no different to the contribution they make to the truth of *non*-modal propositions.²¹⁷ In both cases, they simply fix the meaning of a sentence in such a way that it expresses the proposition that it does; but, she argues, the truth of that proposition is independent of the rules governing the sentence expressing it. Of course, there is a sense in which the truth of any *sentence* can be said to depend on linguistic rules, even non-modal ones. As Thomasson says,

'...minds obviously play a role in determining whether sentences are true or false by establishing the *meanings* of the sentences that contribute to their truth-conditions. And, of course, if a series of marks or noises had different meaning, it might have a different truth-value.'²¹⁸

However, this isn't enough for the mind-dependence of truth in any serious sense. That 'Many trees have green leaves' would be false if 'tree' meant what 'cat' means isn't sufficient for the mind-dependence of truth of the *proposition* expressed by the sentence. All that's mind-dependent is that the sentence in question expresses the true proposition that it does, rather than a different proposition altogether. What Thomasson claims is that the contribution linguistic conventions make to modal truth is just the same as the contribution made to truth more generally; they simply serve to fix which proposition is expressed by which sentence. She says:

'The contribution minds and linguistic conventions make to determining the truth of modal statements on this view is no different from the contribution they make to other statements: in all cases, they establish the meaning and thereby establish the truth-*conditions* of the statements, but don't establish whether or not these are fulfilled; in fact, normally minds and conventions aren't required for these truth-conditions to be fulfilled.'²¹⁹

Thomasson uses the sentence 'Rocky can't survive liquification' to illustrate her argument.²²⁰ In this case, the name 'Rocky' is associated with the sortal 'rock', and that sortal is governed by application conditions according to which 'rock' terms cannot be applied where 'liquid' applies. Therefore, it is a coapplication condition for 'rock' names that they can only be reapplied to one and the same entity so long as neither application is

²¹⁷ See Thomasson *Ordinary Objects* p.66.

²¹⁸ *Ibid*, p.65.

²¹⁹ *Ibid*, p.66.

²²⁰ *Ibid* pp.65-67.

an appropriate application of 'liquid'. Given that 'Rocky' is a 'rock' name, 'Don't apply "Rocky" where "liquid" applies' will be an application condition governing 'Rocky'. On Thomasson's view, 'Rocky can't survive liquification' is simply an object language expression of that rule. However, she argues, the proposition expressed by that sentence is *not* dependent for its truth on the linguistic rule mentioned. The rule in question helps to fix the reference of 'Rocky' to Rocky, and therefore helps make the sentence 'Rocky cannot survive liquification' express the modal proposition <Rocky cannot survive liquification>, but it does not make that modal proposition true. Of course, if 'Rocky' had been introduced as a name for a collection of atoms, rather than a rock, then it's referent would have been different, and the proposition expressed by 'Rocky cannot survive liquification' might not have been true. But that doesn't make the proposition expressed depend on convention for its truth; all that's dependent on convention is the meaning of the name, and therefore *which* proposition is expressed.

Thomasson concludes that the view that modal sentences are expressions of linguistic rules is not committed to claim ii) that the truth of modal propositions depends on linguistic rules. She suggests that the mistake people have made in thinking that her view *is* committed to ii) stems from the fact that she treats modal sentences as, like analytic sentences, requiring nothing of the world in order to be true. And traditionally, the view that such sentences require nothing of the world in order to be true is associated with the position that their truth is mind-dependent. According to Thomasson, the rules governing analytic sentences are such that whatever proposition an analytic sentence expresses, it will have to be a true one. In the case of 'All bachelors are unmarried,' for example, this was because the application conditions for 'bachelor' *include* the application conditions for 'unmarried'. Given that this is the case, any successful application of 'bachelor' will be sufficient for the successful application of 'unmarried', and the object language 'All bachelors are unmarried' is guaranteed to be true. This position does not entail however, the position that the rules make that sentence true, or make the proposition it expresses true. She says it is a mistake to '...confuse the fact that minds are needed to establish the *meaning* of a sentence with the claim that the truth-conditions for the sentence include the existence of minds.'²²¹

Thomasson holds that given their normative function, modal sentences ultimately shouldn't be treated as 'reports about anything, and thus not as expressions apt for truth or falsehood.'²²² In their primary function, analytic and modal claims are imperatives in disguise, rather than descriptive statements. If modal claims do not require truth-makers

²²¹ Ibid, p.67.

²²² Ibid, p.69.

at all, then they should not be thought of as ‘made true’ in any sense by linguistic rules.²²³ As such, Thomasson argues, her position is not committed to ii). Nonetheless, as noted in chapter 2, Thomasson acknowledges that both analytic claims and modal claims *might* be used to express truth apt propositions. After all, she notes, a single sentence may be used to perform different speech acts at different times. Thomasson argues that in these cases, analytic and modal sentences *still* don’t require truth-makers since they do not ‘depend on any empirical fact’s obtaining’.²²⁴ Once again, this is because the linguistic rules governing the terms in an analytic sentence *guarantee* that it will be true, regardless of what facts obtain in the world. Thomasson makes sure to note that, ‘...the adoption of these rules is not a *truth-maker* for the claim (it only establishes the meaning of the terms involved and the truth-conditions for each part).’²²⁵ In other words, given that the linguistic rules serve only to fix meaning, they aren’t what make it the case that what’s expressed by a sentence is true. When it comes to modal sentences, Thomasson claims that they also don’t require truth-makers, but can be taken to be true or false depending on whether they are accurate expressions of the linguistic rules. So, ‘Necessarily, all bachelors are unmarried’ is true since it accurately reflects the rules governing ‘bachelor’, but ‘Possibly, some bachelor is married’ is false since it misrepresents the rules governing ‘bachelor’.²²⁶

So far, the effort toward avoiding object conventionalism has been devoted to avoiding claim ii), that linguistic rules make all modal propositions true. Thomasson can make a similar move when it comes to denying claim i) directly. As noted above, Thomasson argues that application and coapplication conditions associated with singular terms guarantee determinate reference by singling out a set of EIP conditions had by the referent. However, just as she need not accept that the rules governing sentences make modal propositions true, Thomasson need not accept that these rules play the role of endowing objects with their EIP conditions. Rather she can argue that EIP conditions are had by objects independently of language, and that the linguistic rules simply function to *select* one of those objects, over the others, as the referent of a term. Just as on Thomasson’s view the linguistic rules governing the use of ‘Rocky’ make it the case that the sentence ‘Rocky cannot survive liquification’ expresses the independently true proposition that it does, those same rules can make it the case that ‘Rocky’ refers to the object that does, complete with language-independent modal properties. Once again, however, Thomasson need not accept that objects with their modal properties are truth-

²²³ The case for this claim is made in *Ordinary Objects* pp.147-149, as well as in ‘Modal Normativism and the Methods of Metaphysics’ pp.68-72.

²²⁴ Thomasson, *Ordinary Objects* p.70.

²²⁵ *Ibid* p.70.

²²⁶ Thomasson, ‘Modal Normativism and the Methods of Metaphysics’ p.148.

makers for *de re* modal sentences; after all, *de re* modal sentences remain expressions of linguistic rules and therefore don't require truth-makers.

This approach coheres well with Thomasson's justification for her commitment to application and coapplication conditions. If we need linguistic rules governing terms in order to single out for reference an object complete with existence and identity conditions, that would suggest that those existence and identity conditions do not themselves depend on the introduction of linguistic rules. Thomasson's treatment of the collocation problem similarly suggests that this may be her favoured approach when it comes to objects and reference.²²⁷ The collocation problem is the problem of explaining how objects that share all their parts at all times can come to have different modal properties. Gibbard's example of the statue and the lump, as discussed in chapter 3, is an example of this problem. The statue Goliath and the lump of clay Lumpl from which it is constituted share all their parts at all times at which they exist, and yet Lumpl can survive squashing while Goliath can't. Given that their parts and non-modal properties are the same, some other explanation is required for how they differ in their modal properties. Sidelle's solution to this problem, recall, was to argue that Lumpl and Goliath are distinct conventional objects that have their modal properties endowed upon them via conventional linguistic rules. Thomasson also argues that the different modal properties had by the statue and the clay are explained by different rules governing 'statue' terms and 'lump' terms, but wishes to deny object conventionalism. She says:

'Instead, the differences in modal truths for statues versus lumps of clay (and so the differences in the modal properties each is said to have) reflect different analyticities for the terms 'statue' and 'lump' (or the names 'Goliath' and 'Lumpl') used in stating the question (eg that it is analytic that, if 'Goliath' refers at all, what it refers to could not survive squashing, though the same does not go for Lumpl)'.²²⁸

On Thomasson's view, if 'Goliath' is to refer at all, it must refer to something that cannot survive squashing. And, if 'Lumpl' is to refer at all, it must refer to something that *can* survive squashing. This is guaranteed by the rules governing 'lump' terms and 'statue' terms. On this basis we can infer that Lumpl and Goliath, as the referents of 'Lumpl' and 'Goliath', are distinct. However, this doesn't commit Thomasson to claiming that we endow Lumpl and Goliath with their modal properties. Rather, she can argue that the two objects can have their distinct modal properties independently of us, and linguistic conventions can simply serve to select each object, pre-endowed with modal identity and

²²⁷ See Thomasson, *Ordinary Objects* chapter 4 for her discussion of collocation problems.

²²⁸ Ibid pp.82-83. Note that Thomasson's original text uses the name 'David' to refer to the statue. 'David' has been changed to 'Goliath' here for consistency with other uses of the case in this thesis.

existence conditions, for reference. As such, Thomasson can avoid the problem raised by Sidelle for positions that combine object realism with modal conventionalism, as discussed in the previous chapter. Since according to Thomasson the modal properties had by objects are not conferred on them by linguistic conventions, the problem of how we can endow a single object with incompatible modal properties never arises.

4.3 A dilemma: conventional objects or real modality

As outlined above, Thomasson's strategy for avoiding object conventionalism is to deny that modal propositions are made true by linguistic conventions, or that those conventions endow objects with their modal EIP conditions. Rather, she suggests, the contribution these rules make to the truth of modal propositions is no different to the contribution they make to truth more generally; they serve to fix the meaning of a sentence to some proposition rather than making that proposition true. Similarly, Thomasson can argue that linguistic rules fix the reference of a term to something with independent modal existence and identity conditions, rather than endowing it with those modal features. In this section, I argue that this response to the problem isn't successful as a way to render LMC compatible with object realism, since the price of avoiding object conventionalism is giving up the central theses of LMC. The Thomassonian approach faces a dilemma: either it is committed to object conventionalism, or it fails to constitute a version of LMC by failing to meet the conditions for the theory set out in chapter 2. I'll pose this dilemma both in its application to how linguistic rules contribute to proposition truth, and in its application to how those rules contribute to the modal properties of objects. This problem suggests that Thomasson's view does not represent a safe haven for those who wish to endorse LMC alongside a non-conventionalist theory of objects.

4.3.1 The status of modal propositions

As the argument from Rea suggests, object conventionalism results if linguistic conventions make modal propositions true. In order to avoid this consequence, Thomasson's preferred strategy is to argue that the contribution linguistic rules make to the truth of modal propositions is just the same as the contribution they make to the truth of non-modal propositions; they simply serve to fix the meaning of sentences to propositions that are true or false independently of those rules. However, I'll argue that this response jeopardises the Thomasson view's status as a version of LMC. In particular, if modal propositions are true independently of linguistic rules, the theory of modality that results does not qualify as one according to which modality depends on analyticity or

linguistic rules in any serious sense. As a result it will fail both conditions for LMC set out in chapter two. Those conditions were:

- a) The truth values of all metaphysical modal sentences are determined in a non-trivial way by conventional linguistic rules governing the use of terms.
- b) All modal features of the world are dependent on these conventional linguistic rules.

Failing to meet these conditions may not undermine Thomasson's own epistemological and meta-ontological goals; however, it renders her theory unable to achieve *our* goal of reconciling LMC with a non-conventionalist theory of objects.

In order to avoid object conventionalism, Thomasson argues neither modal sentences nor the propositions they express are made true by linguistic rules. This is because, she argues, modal sentences, like analytic sentences, are primarily expressions of linguistic rules, and as such are not truth apt. Nonetheless, she says that sentences can be used to perform different speech acts at different times; therefore, modal sentences *can* be used to express truths. As noted in section 4.2, Thomasson argues that in these cases the linguistic rules make the same contribution to the truth of modal propositions as the contribution they make to the truth of non-modal ones. In each case, linguistic rules serve to fix the truth-conditions of a sentence. By doing so, they make it the case that a sentence expresses one proposition rather than another, but they do not make the proposition expressed *true*. If a proposition's truth is not owed to linguistic rules, however, it must be owed to factors external to the rules governing the sentence expressing it. So according to this view, just like 'Many trees have green leaves' conventionally expresses the proposition <Many trees have green leaves>, 'Necessarily all bachelors are unmarried' conventionally expresses the proposition <Necessarily, all bachelors are unmarried>. In both cases, the truth of the proposition expressed is independent of the truth of the sentence expressing it. The difference between the two cases is that the *sentence* 'Necessarily, all bachelors are unmarried' is guaranteed by the linguistic rules to express a truth, while the sentence 'Many trees have green leaves' is not.

The problem for this strategy is that the resulting view does not meet the conditions required to constitute a version of LMC. If modal propositions are considered entities that exist independently of linguistic rules, and whose truth does not depend on linguistic rules, the theory fails to qualify as LMC by failing to meet condition a). This point is particularly clear given that Thomasson takes the contribution made by linguistic conventions to *modal* proposition truth to be exactly the same as the contribution they make to truth in general. The fact that we use the term 'tree' the way we do makes it the

case that the sentence ‘Many trees have green leaves’ expresses the proposition it does, but doesn’t make that proposition true. Similarly, the fact that we use ‘bachelor’ the way we do makes it the case that the sentence ‘Necessarily, all bachelors are unmarried’ expresses the proposition that it does, but doesn’t make that proposition true. If conventions play the same role in determining modal proposition truth as the role they play in determining non-modal proposition truth, then the resulting theory must be conventionalist about non-modal truth if it is conventionalist about modal truth, and non-conventionalist about modal truth if it is non-conventionalist about non-modal truth.

It seems clear that Thomasson’s preferred strategy falls on the non-conventionalist side of this equation; her theory is conventionalist about neither modal proposition truth nor non-modal proposition truth. Recall that in chapter 2, I promised to say more about what constitutes a ‘non-trivial’ contribution made by linguistic conventions to modal truth. Anyone who accepts that which symbols have which meanings is a conventional matter will be willing to accept some minimal role played by linguistic conventions in determining sentence truth. As Thomasson herself notes, it’s uncontroversial to believe that words might have had different meanings. This kind of contribution made by convention to truth, had in common by non-modal sentences and modal sentences on Thomasson’s view, cannot qualify as ‘non-trivial’ in the required sense.

One condition a theory must satisfy in order to meet the non-triviality requirement is that it should be incompatible with theories that are not normally considered conventionalist theories of modality. The contribution Thomasson suggests that convention plays to truth, however, is compatible with a range of theories of modality that are not normally considered conventionalist. Someone who believes modality is to be analysed in terms of concrete or ersatz worlds, or in terms of dispositions, or in terms of any other non-linguistic entities or facts can accept that conventions play a role in determining which strings of symbols express which modal propositions, the truth of which is to be analysed in their preferred way. This suggests that the strategy taken by Thomasson results in a theory that also fails to meet condition b), since it allows the existence of non-conventional modal features of the world.

Thomasson may well note that her theory is set apart from realist alternatives because even though they do not act as truth-makers for modal sentences or propositions, linguistic rules still guarantee that modal sentences are true in some sense. After all, many theorists will deny that modal sentence truth has anything to do with analyticity, convention or linguistic rules. Still, this view remains *compatible* with various forms of modal realism. For example, Lewis holds his realist theory about modality alongside the

view that a sentence is analytic when by convention it expresses a necessary proposition.²²⁹ Thomasson can also argue that her theory can help to explain the epistemology of modal truth. If modal sentences are expressions of linguistic rules, our competence with those rules can help to explain our knowledge of the truth of modal sentences. This may even be characterised as Thomasson's central project; her position in 'Ontology Made Easy' is that ontological questions are 'easy' in that their answers often follow from our linguistic rules in a straightforward manner. Perhaps modal questions are epistemically 'easy' in a similar sense. However, so long as modal propositions are taken to be true independently of linguistic rules, the theory cannot count as a version of LMC. This means that while Thomasson's theory has interesting epistemological and semantic implications, it does not provide a route for reconciling LMC with a non-conventionalist theory of objects.

The available options when it comes to modal proposition truth leave us in a dilemma. On the one hand, we can hold that modal propositions are made true by linguistic conventions. Thomasson rejects this option because it leads to object conventionalism, and so should we. On the other hand, we can hold that modal propositions owe their truth to something *other* than linguistic conventions. This appears to be Thomasson's preferred strategy. However, on this option, the role played by linguistic conventions is minimal; they serve simply to fix the meaning of sentences to independently true propositions. This minimal role played by conventions is insufficient for the view to qualify as a genuine linguistic theory of modality. The first horn of this dilemma assigns a strong role to linguistic rules in determining modality, at the cost of involving a commitment to object conventionalism. On the other hand, the second horn of the dilemma assigns such a minimal role to linguistic rules that they no longer determine modality in any serious sense. On neither horn can we claim to have reconciled LMC with a non-conventionalist theory of objects.

4.3.2 *The status of modal properties*

A parallel dilemma can be set up when it comes to the reference relation between singular terms and objects. If she is to avoid i) Thomasson cannot accept that linguistic rules endow objects with their modal EIP conditions. To do so would be to take on a commitment to object conventionalism. Nonetheless, Thomasson holds that linguistic rules in some sense *determine* the EIP conditions of their referents. In her example of a 'rock' name, 'Rocky' must refer to something that can't survive liquification given the application conditions associated with the name. Similarly, we can infer that 'Lumpl' and

²²⁹ Lewis, *Convention* pp.174-176, pp.204-208.

‘Goliath’ don’t co-refer because ‘Lumpl’, if it refers at all, refers to something that can survive squashing, while ‘Goliath’, if it refers at all, refers to something that *can’t* survive squashing. In parallel to the case of propositions, Thomasson can argue that the role played by linguistic rules is to fix the reference of terms to objects that come pre-endowed with modal existence and identity conditions. Rocks, for example, can’t survive liquification independently of linguistic rules; those rules serve simply to make it the case that ‘rock’ terms refer to rocks, rather than to other kinds of entities.

Unfortunately, however, this approach to objects and reference faces the same worry as the one facing Thomasson’s approach to modal propositions. If the role played by linguistic rules is simply to select an object for reference, the theory fails to qualify as genuine LMC by failing to meet both conditions a) and b). As with the case of proposition truth, the matter of which modal properties are had by an object is not treated as any more conventional on this view as the matter of which *non-modal* properties are had by an object. As such, the view remains compatible with a range of theories about modal properties. For example, they may be analysed in terms of essences or dispositions, or in terms of identity across worlds or other worldly counterparts. None of these views qualify as conventionalist yet all are compatible with the view that linguistic rules help fix the reference of terms to objects. Again, the view that *de re* modal sentences are expressions of rules has substantive semantic and epistemological consequences, but it doesn’t constitute a metaphysical theory of modality so long as it is silent on how modal properties are to be analysed. As such, Thomasson’s view cannot be of help when it comes to our project of developing a version of LMC that is compatible with object realism.

Sidelle makes a similar point in his review of ‘Ordinary Objects’. He notes that when it comes to dealing with problems of collocation, such as the case of the statue and the lump, Thomasson appears to have two options: either accept, as he does, that the world is ‘articulated’ into objects by the application of identity conditions, or accept that there is language-independent modality. He says:

If, as Thomasson wants to insist, there is no more mind-dependence to modal truths than there is to ‘There is gold’, then her ontology *does* consist of a world of mind-independently individuated objects with modal properties, and so the semantics of referring terms can do nothing to explain how there can be collocated objects: it just

uses these rules to pick out what is already there, and so the needed explanation must still be metaphysical.²³⁰

Sidelle's point is that if linguistic rules simply explain sentence truth, the metaphysics of collocation is still up for grabs. Explanations of how we use terms in a language don't suffice as explanations of the entities to which those terms refer. While Thomasson may happily accept that the modal properties had by objects do not depend on linguistic rules, this option is not available to linguistic modal conventionalism.

The dilemma posed above for propositions therefore reapplies when it comes to explaining objects and their modal properties. On the one hand, Thomasson could argue that modal properties are endowed on objects by linguistic conventions, but the consequence of that view is a commitment to object conventionalism. On the other hand, she could argue that objects have modal properties independently of linguistic rules. On this view, the role of linguistic conventions is simply to fix the reference of terms to objects that come pre-endowed with modal existence and identity conditions; but that is compatible with any number of metaphysical theories about those modal properties. Again, while this approach may be able to satisfy Thomasson's epistemological goals, it can't satisfy our metaphysical goal of explaining modality in terms of linguistic rules. On the first horn of the dilemma, linguistic rules play a strong role in determining the modal properties of objects, at the cost of a commitment to object conventionalism. On the second horn of the dilemma, linguistic rules play such a minimal role that the theory that results no longer qualifies as LMC. As things stand, we are unable to reconcile LMC with a non-conventionalist theory of objects on either horn. The project of finding a way out of the dilemma on behalf of LMC will be taken up in chapters 6 and 7.

4.4 Easy ontology and pleonastic properties

Both horns of the dilemma set out above treated objects as *just as conventional* as modality. On the one hand, if modal propositions and properties are conventional, objects are too. On the other hand, if objects *aren't* conventional, modal propositions and properties aren't either. In order to maintain a linguistic theory of modality alongside non-conventionalism about objects, a wedge must be driven between modal properties and modal propositions on the one hand, and objects on the other such that the former count as language-dependent while the latter do not.

²³⁰ Alan Sidelle, 'Review of *Ordinary Objects* by Amie Thomasson,' *The Philosophical Quarterly*, Vol. 58, No. 230 (2008), p.174.

One place to look for a way to drive that wedge is in Thomasson's treatment of modal properties and propositions as 'pleonastic'. Following Schiffer, Thomasson takes a 'pleonastic transformation' to occur when the existence of some entity can be inferred trivially from some uncontroversial truth that did not appear to involve a commitment to that entity.²³¹ The entities whose existence can be trivially inferred in this way are referred to as 'pleonastic'. Schiffer holds that the existence of a number of entities, prominently including properties and propositions, can be inferred this way. For example, from 'Fido is a dog' we can infer 'Fido has the property of being a dog'.²³² While the former sentence referred only to Fido, the new sentence refers to a new entity: the property of being a dog. Schiffer calls pleonastic transformations 'something from nothing' transformations since reference to the new entities appears to come for free; a sentence that doesn't refer to any properties can be transformed into one that does without any extra empirical or philosophical work being done to establish the existence of the new entities.²³³ Thomasson argues that these pleonastic transformations offer 'easy' answers to existence questions in philosophy. In particular, she argues that some existence claims are analytically entailed by uncontroversial truths. And, if the existence of an entity is analytically entailed by a truth, as in the case of Fido and the property of being a dog, we should accept its existence.

Importantly, pleonastic entities for Schiffer are both *created* by human practices of language use and are nonetheless *independent* of language in a serious sense.²³⁴ They are independent of language in that they would exist even in hypothetical circumstances in which humans and language don't exist. This holds for properties and propositions; we correctly judge that the property of being a dog would exist and be had by Fido even if there were no humans to talk about it. On the other hand, pleonastic entities are *created* by our linguistic practices in that the nature of properties and propositions on Schiffer's view is fully determined by our linguistic practice of permitting the nominalisation of a predicate or a 'that' clause in our language. To be the property of being a dog, for example, is just to be the referent of 'the property of being a dog'. Similarly, to be the proposition that Fido is a dog is nothing more than to be the referent of 'that Fido is a

²³¹ See Thomasson, *Ontology Made Easy* pp.132-158, Stephen Schiffer, 'A Paradox of Meaning,' *Noûs* Vol. 28, No. 3 (1994): pp.279-324, Stephen Schiffer, 'Language-Created, Language-Independent Entities,' *Philosophical Topics* Vol. 24, No. 1 (1996): pp.149-167, and Stephen Schiffer, *The Things We Mean*, (Oxford: Clarendon Press, 2003).

²³² Schiffer, 'Language-Created, Language-Independent Entities' pp.149-150.

²³³ Schiffer discusses and rejects the idea that singular terms such as 'the property of being a dog' only *purportedly* refer. He argues that the accepting the truth of 'Fido has the property of being a dog' really does commit us to the existence of a property. (Ibid, pp.151-153.)

²³⁴ Ibid, pp.159-164.

dog'. In Schiffer's words, the 'essence' of properties and propositions is determined by our linguistic practices.²³⁵

Thomasson and Schiffer part ways when it comes to the ontological status of pleonastic entities. According to Schiffer, such entities are 'ontologically shallow' or 'thin and inconsequential'. He contrasts pleonastic entities with ordinary objects such as trees, arguing that trees have 'the highest degree of independence from our linguistic and conceptual practices', while pleonastic properties have a lower degree of independence.²³⁶ Thomasson, however, argues that entities whose existence is analytically entailed by true claims are just as language-independent as other kinds of entity. Thomasson widens the class of objects whose existence we infer via pleonastic transformation to *include* ordinary objects. From the existence of some particles arranged tree-wise, for example, we can analytically infer the existence of a tree; yet the tree does not have a diminished ontological status.²³⁷ She notes that the distinction between entities whose existence can be inferred analytically and those that can't is not a distinction pertaining to the type of entity, such as whether it is a physical object like a tree or an abstract one like a property. Rather, she suggests that whether or not an entity can be inferred pleonastically will depend on what uncontroversial truths we start with and what rules govern the language we're speaking.²³⁸ If we start with the empirical truth that there are some particles arranged tree-wise, our linguistic rules will warrant the application of the term 'tree'. And, we infer the existence of properties in exactly the same way; given the uncontroversial truth that Fido is a dog, our linguistic rules warrant the application of the term 'the property of being a dog'. It's not analytic that there are trees, but it's analytic that there are trees if there are particles arranged tree-wise. Similarly, it's not analytic that there are properties, but it's analytic that there are properties if there are true sentences of the form 'A is F'. Thomasson calls her ontological position 'simple realism' because questions about whether entities exist can be answered easily while the entities themselves remain real and mind-independent. Questions about ontology are epistemically easy, but the objects that exist are not in any sense language or mind-dependent as a result.

Thomasson at various points suggests that modal propositions and modal properties may be pleonastic.²³⁹ This treatment of modal properties and propositions may offer a way to

²³⁵ Ibid, p.161.

²³⁶ Ibid, p.161.

²³⁷ Given, of course, that our application conditions for 'particles arranged tree-wise' are related in the right way to those for 'tree'.

²³⁸ Thomasson *Ontology Made Easy* pp.141-143.

²³⁹ Thomasson, 'Modal Normativism and the Methods of Metaphysics' pp.148-149, *Ordinary Objects* pp.71-72.

combine LMC with a non-conventionalist theory of objects. After all, pleonastic modal properties and propositions would be both language-created *and* in some sense language-independent. If modal propositions are pleonastic, their existence (and truth) is analytically entailed by modal sentences. For example, from ‘Necessarily, all bachelors are unmarried’ we can infer ‘The proposition that necessarily, all bachelors are unmarried is true.’ And, from ‘Josephine is necessarily human’ we can infer ‘Josephine has the property of being necessarily human.’ As per Schiffer, we can treat these modal propositions and properties as ‘language-created’ in the sense that their ‘essence’ is determined by our linguistic practices. However, we can also treat them as language-independent in that we’d judge them to exist whether or not there was a language or people to speak it. Similarly, the objects that instantiate modal properties would exist if there was no language, and are also therefore language-independent.

To see how this solution to the dilemma might work, it is helpful to see how a pleonastic treatment of modal properties and propositions works on Thomasson’s view. Firstly, Thomasson holds that an object of some kind exists just so long as the application conditions of the relevant kind term are met. For example, the way to find out whether there are any trees is to check whether there’s something with a wooden trunk and branches, that grows roots in soil, requires light and water to live, and so on. All that’s required for ‘tree’ to refer is for there to be particles in the world arranged as something that plays the right role. On Thomasson’s view, the existence of trees is in no way dependent on language; the world settles whether there are any trees by settling whether the application conditions for ‘tree’ are met. Note, however, that the rules of use governing ‘tree’ will also suffice for the truth of certain modal sentences. Given that ‘tree’ cannot be correctly applied where ‘chopped firewood’ applies, ‘If x is a tree, x is not possibly identical to some chopped firewood’ will be an accurate expression of the linguistic rules for ‘tree’, and will therefore be true. If modal properties are pleonastic, their existence can be trivially inferred from the truth of *de re* modal sentences. Given that ‘This tree is not possibly identical to some chopped firewood’ is true, for example, we can pleonastically infer that the tree has the property of being not possibly identical to chopped firewood.

On this view, the existence of objects complete with pleonastic modal properties can be inferred from non-modal states of the world in combination with linguistic rules via three steps:

Step 1: Establish the existence of objects of a certain kind by checking that the application conditions of the relevant sortal are met.

Step 2: Infer the truth of *de re* modal sentences about those objects by consulting the rules of use governing the sortal.

Step 3: Pleonastically infer that the objects have modal properties from the truth of the relevant *de re* modal sentences.

Importantly, Thomasson emphasises that the trees themselves do not *depend* for their existence on linguistic rules; she takes her view to be a form of realism about ordinary objects. After all, the only thing that's required for there to be trees on this view is for certain non-conventional conditions in the world to be met. And, there would be trees whether or not there were speakers of English or any other human language. However, once the existence of trees was established in step 1, all that was added in steps 2 and 3 to arrive at their modal properties was that certain linguistic rules govern the term 'tree'. On this view then, the existence of trees depends on nothing more than certain non-linguistic states of affairs obtaining. And, the linguistic rules governing 'tree' are sufficient for trees to have certain modal properties, such as not being possibly identical to a pile of chopped firewood. The resulting picture is one in which objects are independent of language, but their modal properties are derivable from linguistic rules governing referring terms. This appears promising as a method for maintaining a linguistic theory of modal properties alongside a non-conventionalist theory of objects.

The key to success for this approach was holding that whether or not some object exists is determined by language-independent states of the world (step 1), while its modal properties are in some sense language-created (steps 2 and 3). In order for this solution to the dilemma to be successful, it must be established that pleonastic modal properties can be genuinely language-created while the objects that instantiate them are not. Once again, the prospects for this approach become more dubious when we call attention to the relationship between modal properties and existence and identity conditions.²⁴⁰ One way of interpreting the claim that linguistic rules are sufficient for a tree's having certain modal properties is as the claim that linguistic rules *make it the case* that the tree has the modal properties it does. Then, the tree's being not possibly chopped firewood makes it the case that post chopping, a tree that existed previously no longer exists. So, if linguistic rules make it the case that the tree isn't possibly chopped firewood, they can make it the case that an hour from now an object will go out of existence. That is, they can make it the case that a particular event in the world constitutes an object going out of existence, rather than merely an object undergoing a change in shape and location.

²⁴⁰ Section 3.2 sets out the argument that conventionalism about EIP conditions leads to conventionalism about objects. It is also reiterated briefly at the beginning of this chapter.

Therefore, it's misleading to say that which objects exist is fully determined by non-linguistic states of the world on this view, since the linguistic rules make a difference to which states of the world count as including which objects. The reason that we check whether there are any trees by checking the application conditions for 'tree' in step 1 is that the application conditions for 'tree' determine what it takes to be tree by determining the modal features of trees. We check the language-independent world for things with trunks and leaves because we know that 'tree' doesn't apply to things without trunks, and therefore, that trees have trunks necessarily. Different linguistic rules would therefore produce different conclusions about which objects exist and how many objects there are. If different linguistic rules result in different ontologies, we find ourselves back in the first horn of our dilemma. Given that modal properties are closely related to EIP conditions, language-created pleonastic modal properties mean language-created objects.

The other option, of course, is to deny that our linguistic rules make it the case that trees and other objects have the modal EIP conditions they do. Instead, it may be that we check whether the conditions of application for 'tree' are met in order to check whether there are trees because those conditions help determine that we mean to pick out *trees* with our language rather than some distinct kind of entity. This seems likely to be Thomasson's preferred strategy; after all she argues that pleonastic entities do not have a diminished ontological status. Thomasson notes that pleonastic properties don't do explanatory work in the sense that we can't appeal to them to explain why sentences are true. For example, we can't appeal to Socrates' having the pleonastic property of being necessarily human to explain why 'Socrates is necessarily human' is true. This is because when something can be trivially inferred from a claim, it cannot offer any more explanatory power than the claim from which it was inferred.²⁴¹ So, given that 'Socrates has the property of being necessarily human' can be trivially inferred from 'Socrates is necessarily human,' the former cannot be used to explain the latter. Nonetheless, if the modal property doesn't depend on the language from it is trivially inferred, its existence calls out for explanation. Once again, if modal properties don't depend on language, they may be explained in any number of other ways, in line with any number of non-linguistic metaphysical theories of modality. On this strategy then, the inference from linguistic rules to modal properties provides a way of explaining how we come to know about modal properties, but does not explain the existence of those properties in terms of our language use. Thomasson's writing suggests that her primary claim is epistemological rather than metaphysical; ontological questions are easy to answer, but ontology itself does not depend on us. However, the resulting theory is no longer helpful for us in our mission to make LMC

²⁴¹ Thomasson, *Ontology Made Easy* p.156.

compatible with object realism, since it treats objects as having language-independent modal properties. As such the view fails to qualify as genuine LMC by failing to meet the conditions established in chapter 2.

The dilemma discussed in section three arises, therefore, even when modal properties and propositions are treated as pleonastic. Pleonastic modal properties must either depend on the linguistic rules from which we inferred them, in which case object conventionalism follows, or they must be independent of those rules, in which case the resulting theory doesn't qualify as LMC.

4.5 The cost of conventionalism

The dilemma discussed above can be used to offer a general diagnosis of why LMC is threatened by object conventionalism. In order to provide a conventionalist theory of modality, some account must be given of how *de re* modal sentences get to be true. Assuming that *de re* modal sentences attribute modal features to objects, this means providing an account of those modal features. On the one hand, modal properties can be treated as conventional, but given the tight connection between EIP conditions and modal properties, objects will then be conventional too. On the other hand, modal properties can be treated as non-conventional, thus avoiding commitment to object conventionalism. However, any theory that treats modal properties as completely *independent* of linguistic rules cannot claim to be genuine linguistic modal conventionalism. The tight connection between modality and EIP conditions means that modal conventionalism and object conventionalism go hand in hand; accept one and you accept the other, or reject one and you reject the other. In the next chapter, I broaden the application of this dilemma by arguing that it arises for *de dicto* modal truth in a way that is structurally parallel to how it arises for *de re* modal truth and modal properties.

CHAPTER 5

In a Conventional World, We Decide What's True

In chapters 3 and 4, my focus has been on the consequences conventionalism about modal properties has for the status of objects. The treatment of modal properties as conventional was a way for linguistic modal conventionalism to maintain that *de re* modal sentences are determined to be true or false by linguistic rules. The thought was that if linguistic rules determine which objects have which modal properties, we can explain the truth of sentences like $\exists x(\Box Fx)$ in terms of those properties. Specifically, $\exists x(\Box Fx)$ can be treated as true when something has the property of being necessarily F. Unfortunately, that approach led to object conventionalism. Usually, *de dicto* modal truth is thought to be the ‘easy’ case for LMC, because the explanation of sentence necessity in terms of analyticity appears more natural than the explanation of object necessity in terms of analyticity. In this chapter, I will argue that *de dicto* modality is not so easy for LMC after all. I’ll make that case by constructing a dilemma for LMC’s treatment of *de dicto* modality that is isomorphic to the dilemma for *de re* modality discussed in chapter 4. The dilemma arises in relation to LMC’s treatment of the modal status of *propositions* (construed as the meanings of sentences) as dependent on linguistic rules. On the one hand, the linguistic rules might be thought to simply fix the meaning of sentences such that they express propositions that come with modal statuses built in. This view doesn’t constitute a genuine version of LMC because it allows for the existence of non-conventional modality. On the other hand, a stronger account takes linguistic rules to endow propositions with their modal statuses. This constitutes a genuine version of LMC, but becomes committed to problematic consequences such as conventionalism about non-modal truth.

In section 5.1 below, I summarise LMC’s approach to *de dicto* modal truth, and explain the role played by analyticity in determining the modal statuses of sentences. In section 5.2, I present the first horn of the dilemma. Sections 5.3 and 5.4 discuss two ways the modal statuses of propositions might be treated as conventional, both of which lead to conventionalism about truth. In section 5.5, I reject an ‘Abelardian’ approach as a way to avoid the dilemma. In section 5.6 I argue that conventionalism about truth ought not be embraced by LMC, and finally, in section 5.7 I discuss whether LMC ought to take on a commitment to conventional possible worlds.

5.1 Analyticity and *de dicto* modality for linguistic modal conventionalism

Explaining *de dicto* modality in terms of conventional linguistic rules is at face value more straightforward than explaining *de re* modality in terms of those rules. After all, it seems more reasonable to suppose that a *sentence* could come to have modal features due to the rules that govern its terms than that an *object* could come to have modal features due to linguistic rules. As discussed in chapter 1, the positivists treated necessity and analyticity as the same property, arguing that the necessity of a sentence is a consequence of conventional decisions about language use. Due to complications that arise from cases of necessary synthetic truth, modern versions of LMC do not treat necessity and analyticity as the same property. However, as outlined in chapter 2, they still treat necessity as closely related to analyticity, and as determined by linguistic rules.

A full articulation of LMC's approach to *de dicto* modality therefore requires an account of the property of analyticity and the role played by convention in determining which sentences qualify as having it. As is suggested by the slogans 'truth by convention' and 'truth in virtue of meaning,' whether a sentence counts as analytic is sometimes characterised as determined by convention, and other times characterised as determined by what it means. The role of meaning in analyticity is apparent in the Kantian and Fregean accounts of the concept. According to Kant's famous 'containment' metaphor, a sentence is analytic when the meaning of the predicate term is a part of the meaning of the subject term. 'All food is edible' is analytic on this view since the meaning of 'being edible' is part of the meaning of 'food'.²⁴² According to the Fregean account, a sentence is analytic when it is transformable into a logical truth by substituting synonyms with synonyms within the sentence. For example, if 'bachelor' is synonymous with 'unmarried man', the sentence 'All bachelors are unmarried men' can be transformed into the logical truth 'All unmarried men are unmarried men' by substituting synonyms for synonyms.²⁴³ On both these accounts, the meanings of a sentence's constituent terms determine whether it qualifies as analytic.

Both construals treat analytic sentences as having the feature that their meaning guarantees their truth in some sense. If a sentence is synonymous with a logical truth, it is guaranteed to be true itself insofar as logical truths are guaranteed to be true. And, if a sentence is such that the meaning of its subject term contains the meaning of its predicate term, anything that counts as falling into the extension of the subject term will also fall into the extension of the predicate term, thus guaranteeing the truth of the sentence. For

²⁴² Kant, *The Critique of Pure Reason*, p.7 (A6-7).

²⁴³ See Frege, *The Foundations of Arithmetic* section 3.

example, anything that counts as falling under ‘food’ will also count as falling under ‘edible’, guaranteeing that ‘All food is edible’ is true.

This feature of analyticity is prominent in Thomasson’s theory, as well as Russell’s theory. As outlined in section 2.2, Thomasson takes a sentence to be analytic when it’s an expression of a conventional linguistic rule governing the use of its sub-sentential terms. Given that there is a linguistic rule according to which the term ‘bachelor’ should only be applied where ‘man’ is applied, ‘All bachelors are men’ qualifies as analytic by Thomasson’s standards. Analytic sentences are guaranteed to express truths on Thomasson’s view because the linguistic rules ensure that the successful application of one term implies the successful application of another. So again, anything that counts in the extension of the first term must also count in the extension of the second. Given that ‘bachelor’ can only be correctly applied where ‘man’ is applied, for example, any correct application of the former term will be a correct application of the latter term. This guarantees that ‘All bachelors are unmarried’ must express a truth. As outlined in section 2.3, Russell’s view construes ‘truth in virtue of meaning’ as truth in virtue of *reference determiner*, where a reference determiner provides a condition that must be met by an entity for it count as the referent of an expression. She follows Kant in appealing to the notion of containment to elucidate when truth is guaranteed by meaning in this sense.²⁴⁴

According to Carnap, the analytic sentences are those that are true in every one of his ‘state descriptions’, which are intended as representations of possible states of the world. A sentence is true in every state description, and therefore analytic, if it stipulated to be a ‘meaning postulate’ in the language, or if it follows from the meaning postulates using stipulated rules.²⁴⁵ As such, analytic sentences in a language are all the language’s meaning postulates and consequences of the meaning postulates, and the logical truths that hold in every state description due to the rules governing state descriptions themselves.²⁴⁶ Carnap holds that whether or not a sentence is to be a meaning postulate is determined *prior* to fixing the ‘rules of designation’ for the language, or in other words, the rules determining what the sentence is to mean and what its terms pick out. Given that some sentence is a meaning postulate however, whatever meaning the sentence is ultimately assigned, it is guaranteed that it must express a truth.²⁴⁷

²⁴⁴ Russell, *Truth in Virtue of Meaning* pp.93-95, p.100.

²⁴⁵ See Carnap’s ‘Meaning Postulates’, and *Meaning and Necessity* pp.7-13. Carnap’s theory of analyticity is also discussed in section 1.3 of this thesis.

²⁴⁶ For example, ‘S or not S’ is true in every state description because the rules stipulate that for every sentence, either it or its negation is included in each state description.

²⁴⁷ Carnap, ‘Meaning Postulates’ pp.67-68.

According to all five ways of characterising analyticity, an analytic sentence is one that is guaranteed to be true given the meanings of its terms. The reason many consider analyticity to be a matter of convention is that the aspect of meaning that guarantees truth is taken to be determined by conventional decisions on the part of a community of language speakers. The role of convention in determining which sentences are analytic is particularly clear in Carnap's and Thomasson's theories of analyticity. According to Thomasson, it is conventional rules governing terms that determine whether a sentence is analytic. We could have chosen not to adopt the rule that 'bachelor' is only to be applied where 'unmarried' is applied. If we had, 'All bachelors are unmarried' would not have been analytic. Similarly, according to Carnap's theory, we could have chosen not to make 'All bachelors are unmarried' a meaning postulate. Convention can also play a role in Kant's, Frege's and Russell's accounts of analyticity so long as the meaning of our terms is conventional. Given that it's a matter of convention what the term 'bachelor' means, it's a matter of convention that 'bachelor' can be substituted for 'unmarried man' in a sentence to transform 'All bachelors are unmarried men' into a logical truth. Given that it's a matter of convention which reference determiner is had by which term, it's also a matter of convention that the reference determiner of 'bachelor' contains the reference determiner of 'unmarried'.

The role played by convention in determining which sentences are analytic is what makes LMC a conventionalist theory of modality: if to be necessary is at bottom nothing more than to be analytic, and analyticity is conventional, then necessity is conventional too. In the remainder of this chapter, however, I'll argue that it is more difficult than it seems to make *de dicto* necessity genuinely convention-dependent. As exemplified in the discussion above, the role of convention in analyticity and *de dicto* necessity is generally discussed in the context of *sentences*, rather than in the context of the contents of those sentences and what they say about the world. When we take into account sentence contents, it becomes problematic to maintain that analyticity and necessity are genuinely conventional.

5.2 The first horn: unconventional analyticity

If LMC qualifies as conventionalist in virtue of taking modality to depend on analyticity, it must be the case that conventional linguistic rules governing terms play a significant role in determining which sentences are analytic, and therefore which sentences are necessary. In this section, I argue that there is one widely accepted role convention plays in determining meaning that is not sufficient for analyticity to count as conventional in

any serious sense, and by the same token, is not sufficient for modality to count as conventional by virtue of its dependence on analyticity. As a result, the view discussed fails to constitute a version of LMC by failing to meet both conditions a) and b) set out in section 2.4.6.

5.2.1 *The limited power of conventional meaning*

One role that conventional linguistic rules might play in determining which sentences are analytic is to determine which of our words have which meanings. It's a matter of convention, for example, that 'bachelor' means *unmarried man*. Of course, 'bachelor' could have simply meant *unmarried person* or it could have meant something different altogether. Perhaps 'bachelor' might never have been introduced as a term in English at all. If our conventions for using 'bachelor' were different in these ways, sentences which currently qualify as analytic would not be analytic. For example, if 'bachelor' meant *unmarried person* rather than *unmarried man*, 'All bachelors are men' would not be analytic. One view then, is that the conventional decision to make 'bachelor' mean *unmarried man*, in conjunction with similar conventional decisions about the other terms in the sentence, is what makes 'All bachelors are unmarried' analytic. Given that analyticity suffices for necessity, those conventional decisions would also make 'All bachelors are unmarried' necessary according to LMC.

It's relatively uncontroversial to accept that convention helps to determine which linguistic symbols are attached to which meanings in the way described above.²⁴⁸ This point can be made particularly clear by looking at the case of names; it is uncontroversial that which name we use to pick out any particular individual is a matter of convention. Obama's parents could have chosen to call him 'Bill' rather than 'Barack' for example. Given that they called him 'Barack', however, the rest of us agree to call him 'Barack' as a result of his parents' decision. The same applies to linguistic expressions more generally, however. It is arbitrary, for example, that 'dog' means *dog* rather than *cat*, and in this sense, the meaning of 'dog' is a conventional matter.

Assume that the linguistic expression 'e' means *m*. Different accounts of meaning will say different things about what kind of entity *m* is. A Millian will say that so long as 'e' is a name, *m* is an individual of some sort. A Fregean will say *m* is a sense. Nonetheless, it is a matter of convention that 'e' stands in the meaning relation to *m*; 'e' meaning *m* is a conventional matter. Call facts about the relations of meaning standing between linguistic

²⁴⁸ Nonetheless, this position is not universally accepted. For example, if words are typed semantically rather than by some other means, 'dog' would not have been the same word had it meant *cat*. (See Kaplan, 'Words'.) Note that in section 2.4.7, I stipulated that sentences were to be typed orthographically or phonetically, not semantically.

expressions and their meanings ‘meaning facts’. An example of a meaning fact is the fact that ‘bachelor’ means *unmarried man*. The account given above of the role of convention in determining which sentences are analytic appealed to these meaning facts as the basis of the conventional status of analyticity. And, given that modality inherits its conventional status from analyticity according to LMC, these facts will also form the basis of the conventional status of modality. In the case of Frege-analyticity, it was the conventional fact that ‘bachelor’ and ‘unmarried man’ both have the same meaning that made ‘All bachelors are unmarried’ analytic. According to the Kantian view, its analyticity was due to the conventional fact that the subject term and predicate term were assigned meanings such that the former contained the latter. The same could be said of Russell’s account; the conventional fact that a particular term has a particular reference determiner helps determine which sentences are analytic. On this way of cashing out the role of convention in analyticity then, conventional meaning facts make ‘All bachelors are unmarried’ analytic and thereby make it necessary.

Unfortunately, however, dependence on conventional meanings facts cannot by itself suffice for conventionalism about modal truth, or even about analyticity. To see why, note that the view that the truth of modal sentences depends on meaning facts is ubiquitous, to the extent that it is accepted by just about everyone regardless of which theory of modality they happen to endorse. As argued above, it’s uncontroversial to accept that the meanings of our terms are up to us in this sense.²⁴⁹ You can easily turn a modal truth into a falsehood if you change the conventional meaning of one of its terms. This is the case regardless of which theory of modality you endorse. Consider, for example, someone who thinks that modality is primitive and irreducible. This kind of modal theorist will argue that the sentence ‘Necessarily, all bachelors are unmarried’ is made true by a primitive modal fact. However, she will also accept that the truth of the sentence depends partly on the ‘conventional rules governing our use of ‘bachelor’’. If ‘bachelor’ had meant what ‘biologist’ means the modal sentence would have been false. The reason it would have been false is that ‘Necessarily, all bachelors are unmarried’ would not have expressed the primitive modal fact that necessarily, all bachelors are unmarried. Instead, it would have said that necessarily, all *biologists* are unmarried, which of course is not a fact. The modal primitivist will argue that the truth of modal sentences in English depends on primitive modal facts *plus* conventional facts about which English terms mean what. She can happily accept that the primitive modal facts are

²⁴⁹ As discussed in section 5.3 below, Quine argues in ‘Truth by Convention’ that this minimal role is all conventions are capable of. He suggests that conventions can be used to find new ways to express old truths, but cannot be used to found new ones.

not enough to make modal sentences true; what those sentences mean matters too, and that is a conventional matter.

This suggests that a view according to which modality depends on conventional meaning facts does not meet condition a) for LMC: that the truth values of all metaphysical modal sentences are determined in a non-trivial way by conventional linguistic rules governing the use of terms. Given the considerations noted above, the role of conventional meaning facts in determining modal truths clearly falls into the trivial side of this divide. What's more, given that the view remains compatible with realist views such as modal primitivism, condition b) isn't met either; the theory does not rule out the existence of modal features of the world that are not dependent on linguistic rules. The inadequacy of conventional meaning facts for making modality conventional is also revealed by the consideration that the truth of non-modal sentences depends partly on such facts; *any* English truth depends in part on what terms in English mean. The truth of the empirical sentence 'There are fewer whales in the ocean now than there were several centuries ago' is partly conventional. If 'ocean' had meant what 'sky' means, the sentence would have been false. Acceptance that truths in a domain depend partly on conventional meaning facts is not sufficient for being conventionalist about that domain. If it were, conventionalism would encompass too many theories for the distinction between conventionalist and non-conventionalist theories to be one worth making. The dependence of empirical truths about the number of whales in the ocean on conventional meaning facts does not suffice for conventionalism about empirical truth. The same applies when it comes to modality; dependence of modal truths on conventional meaning facts does not suffice for conventionalism about modality.

Further consideration suggests that conventional meaning facts will not even suffice to make *analyticity* conventional. Just as the conventional fact that 'ocean' means *ocean* cannot make 'There are fewer whales in the ocean now than there were several centuries ago' analytic, the conventional fact that 'bachelor' and 'unmarried man' are synonymous cannot by itself make 'All bachelors are unmarried men' analytic. On the Fregean account of analyticity, the extra ingredient required over and above the conventional meaning facts is that 'All unmarried men are unmarried men' is a logical truth. Conventional meaning facts might determine that 'All bachelors are unmarried men' is synonymous with that sentence, but synonymy with *any* sentence isn't sufficient for analyticity; only synonymy with the logically true ones is sufficient. For Kant and for Russell the extra ingredient that's required once the meaning facts are fixed is that the meanings of the subject and predicate terms are related in the right way. Specifically, one must be 'contained in' the other. Unfortunately, however, if the matter of logical truth, or

of containment in Kant or Russell's sense, is non-conventional, then the role of convention in determining which sentences are analytic becomes very weak; all convention achieves is to determine whether our terms are attached to meanings in such a way that a sentence expresses a truth of the right kind. However, *being a truth of the right kind* is what does the serious work in distinguishing analytic sentences from non-analytic ones. In the Fregean terminology, it's being a logical truth that does the work in determining which sentences are analytic and which ones aren't. And in the Kantian / Russellian terminology, it's the relation of containment among meanings that does the required work.

In both cases, the relevant ingredient that is essential in determining whether a sentence has the special property of being analytic is *what's meant by the sentence*. If what's meant by the sentence is a logical truth, the sentence is Frege-analytic. If the reference determiner of the predicate term is contained in the reference determiner of the subject term, the sentence is analytic according to Russell. This suggests that in order for analyticity to be truly convention-dependent, and for modality to inherit this convention-dependence, convention must play a role in making it the case that certain sentences *with certain meanings* are analytic. Therefore, a natural place to look for a more significant role for convention in analyticity and modality is in the meanings or contents of sentences. In what follows, I'll use the term 'proposition' to pick out the meanings of sentences. Insofar as propositions are the meanings of sentences, a way to make modality genuinely convention-dependent would be to argue that linguistic rules governing terms make it the case that some propositions are true necessarily, or single out some propositions as the ones that are expressed by analytic sentences. If conventions can make propositions necessary rather than simply fixing the meaning of sentences to propositions that have their necessity independently, we have a way for modality to be genuinely convention-dependent. This proposal will be discussed further in sections 5.3 and 5.4.

5.2.2 Carnap-Thomasson analyticity to the rescue?

Before examining how to make modal propositions convention-dependent, it's worth considering whether the Carnap-Thomasson-style picture of analyticity achieves genuine convention-dependence without reference to sentence contents. Recall that on the Carnap-Thomasson picture, whether or not a sentence is analytic is determined *prior* to what that sentence means. 'All bachelors are unmarried' is analytic on Thomasson's view because the rules governing 'bachelor' stipulate that it should only be applied where 'unmarried' is applied. And, this rule can be established before we fix the extensions of the relevant terms to objects or classes of objects in the world. Similarly, on Carnap's view, we can

stipulate that ‘All bachelors are unmarried’ is to be a meaning postulate before we fix ‘rules of designation’ for ‘bachelor’ or ‘unmarried’.

These accounts therefore appear to provide a way for analyticity to be fully determined by conventional rules. Insofar as modality is determined by analyticity, modality can be fully determined by those rules too. For example, I can adopt the linguistic rule that ‘quog’ is to be applied only where ‘spog’ is applied, and thereby make ‘All quogs are spogs’ analytic. Furthermore, I can do this before I assign a reference to ‘quog’ or ‘spog’. Given that analyticity is sufficient for necessity according to LMC, my introducing the relevant rules for ‘spog’ and ‘quog’ will also make ‘All quogs are spogs’ necessary. This process makes the necessity of the sentence depend purely on my conventional linguistic rule, rather than on the sentence’s content; after all, the rule is introduced without yet assigning meanings to ‘quog’ and ‘spog’. LMC can argue that this account of modality is incompatible with theories such as modal primitivism because the modal status of the sentence is fully determined by the conventional rules; nothing else is required in order for it to be true, including primitive modal facts. By contrast, linguistic rules alone are not sufficient for the truth of ‘There are fewer whales in the ocean now than there were several centuries ago.’

Unfortunately, this attempt to make analyticity strongly convention-dependent becomes problematic once analytic sentences are assigned some meaning or other. If ‘All quogs are spogs’ is to have the function of a meaningful sentence in that it communicates information and so on, it must say something about the world; in other words, it must express some proposition. On the Carnap-Thomasson-style view of analyticity, once it’s stipulated that ‘All quogs are spogs’ is analytic, we must then set up rules of designation determining meanings for each term in the sentence. Given that we’ve made ‘All quogs are spogs’ analytic, however, we had better not assign meanings in such a way that the sentence expresses a falsehood. If we stipulate that ‘All quogs are spogs’ is to be analytic, we can’t *also* decide that ‘quog’ is to pick out the class of trees and ‘spog’ is to pick out the class of foxes. If we could, it would be in our power to make it the case that all trees are foxes, which amounts to a radical conventionalism about the state of the external world. As such, we are restricted in our options such that the proposition expressed by ‘All quogs are spogs’ must be a true proposition. It’s permissible to stipulate that ‘quog’ means *bachelor* and ‘spog’ means *man* but we cannot stipulate that ‘quog’ means *tree* and ‘spog’ means *fox*.

Furthermore, given that according to LMC being analytic is sufficient for being necessary, these theories will require that whatever proposition is expressed by an

analytic sentence must be a *necessary* one. At this point, however, the necessity of the proposition expressed remains unexplained. The theory addresses the analyticity and necessity of *sentences* but has nothing to say about *propositions*. Here, we have a choice. On the one hand, we could argue that there is a class of necessary propositions, and these are the candidate meanings for ‘All quogs are spogs’ once we’ve decided that the sentence is to be analytic. However, this means countenancing non-linguistic modality, which is incompatible with LMC as per condition b). On the other hand, we could argue that the modal status of propositions is somehow dependent on conventional linguistic rules. In that case, the Carnap-Thomasson account of modality doesn’t offer us a way to make modality conventional without addressing the status of propositions and is in this regard then no better off than the explanation of modal truth in terms of conventional meaning facts. Ultimately, we have been led back to where we were at the end of section 5.2.1; LMC must have something to say about the modal status of propositions.

It should be clear that this problem for LMC’s treatment of *de dicto* modality parallels the problem for *de re* modality discussed in the previous chapter. There, I argued that for a theory to qualify as LMC, it must take conventions to play a more substantial role in determining *de re* modal truths than merely fixing the reference of terms to objects that come pre-endowed with modal properties. Similarly, in order for a theory to qualify as LMC, it must take conventions to do more than simply fix the meaning of sentences to propositions that come pre-endowed with modal statuses.

5.3 The second horn part one: conventional truth

In order for LMC to make *de dicto* modality genuinely conventional, it must be able to show how *what’s meant* by a sentence is necessary, contingent or otherwise. Just as serious conventionalism about *de re* modality required explaining how objects have their modal properties, serious conventionalism about *de dicto* modality requires explaining how propositions come to have their modal statuses. One way to achieve this would be to argue that the same linguistic rules that make a sentence analytic also make the proposition it expresses necessary. One way of cashing out this strategy is to treat analyticity as ‘truth by convention’. The thought is that by making a sentence like ‘All bachelors are unmarried men’ analytic, our conventional rules can also make the proposition it expresses true. Then, the necessary propositions would be those that are made true by convention.

Unfortunately, however, the notion of truth by convention has been the target of convincing criticism. Most prominently, arguments against it come from Quine, but they have also been taken up in recent times by Theodore Sider and Timothy Williamson. In his article ‘Truth by Convention,’ Quine claims that ‘definitions are available only for transforming truths not for founding them.’²⁵⁰ He argues that conventions governing the use of terms *only* have the power to give us new ways of expressing old truths; they can’t be responsible for generating new ones. In other words, Quine is suggesting that conventions can only play the ‘trivial’ role in truth that is insufficient for LMC, as discussed in section 5.2; they can make it the case that a string of words means the proposition that it does, but they can’t make that proposition true.

Sider objects to the idea of conventional truth on a similar basis. He says:

‘What could it mean to say that we make logical truths true by convention? Imagine an attempt to legislate truth: “Let every sentence of the form ‘If P then P’ be true.” What would this accomplish? The legislator could be resolving to use the word ‘true’ in a new way; he could be listing the sentences to which this new term ‘true’ applies. But this isn’t making logic true by convention; it is legislating a new sense of ‘true’. On the other hand, the legislator could be singling out a meaning for ‘if...then’: ‘if...then’ is to stand for a relation, R, between propositions, such that for any proposition, p, the proposition that R(p, p) is true. But this does not amount to logical truth by convention either, for it appeals to an antecedent notion of propositional truth. The propositions R(p, p) are assumed to “already” be true; they are merely used to pick out the desired relation R.’²⁵¹

Sider’s point is that *the thing that’s meant* by a sentence, even if it’s a logical truth, does not depend on linguistic conventions, and is not the type of thing to which we can assign truth values by stipulation. The suggestions Sider considers for what it could mean to ‘legislate’ a logical truth end up collapsing into redefinitions of terms like ‘true’ or ‘if...then’. Timothy Williamson also argues against analyticity construed as truth by convention, noting that logical truths like ‘Either it’s raining or it’s not raining’ and analytic truths such as ‘All bachelors are unmarried’ are just as much ‘about the world’ as non-analytic sentences like ‘Today is Tuesday.’²⁵² And, insofar these sentences make assertions about the world, they ought to owe their truth to something worldly, rather than to convention. ‘Either it’s raining or it’s not raining,’ for example, is made true by the rain or lack thereof, and ‘All bachelors are unmarried’ is made true by bachelors and their properties. Even recent defenders of analyticity object to the idea that conventions are capable of ‘founding’ truths. Paul Boghossian, for example says:

²⁵⁰ Quine, ‘Truth By Convention’ p.81.

²⁵¹ Sider, ‘Reductive Theories of Modality’ p.204.

²⁵² Timothy Williamson, *The Philosophy of Philosophy*. See Chapter 3 in particular.

‘Are we really to suppose that, prior to our stipulating a meaning for the sentence ‘Either snow is white or it isn’t’ it wasn’t the case that either snow was white or it wasn’t? Isn’t it overwhelmingly obvious that this claim was true before such an act of meaning, and that it would have been true even if no one had thought about it, or chosen it to be expressed by one of our sentences?’²⁵³

Finally, the case discussed in the previous section speaks against the proposal that linguistic rules make propositions true. I can stipulate that ‘All quogs are spogs’ is to be analytic and therefore must express a truth, but that appears to limit what I can mean by ‘quog’ and ‘spog’; I can’t consistently stipulate that the sentence is to be analytic while at the same time stipulating that ‘quog’ is to mean *tree* and ‘spog’ is to mean *fox*. In order for a proposition to be a candidate for the meaning of an analytic sentence, it must *already* be true. However, on the view that propositions are made true in virtue of being expressed by analytic sentences, I *can* make the proposition that all foxes are trees true. The view that the necessary propositions are those that are made true by convention meets the conditions for LMC; however, the notion of truth by convention lacks independent plausibility.

5.4 The second horn part two: necessity by convention

Luckily, LMC need not go so far as to embrace truth by convention; all it requires is *necessity* by convention. One option is for LMC to claim that conventional linguistic rules make a proposition like <Either it’s raining or it’s not raining> *necessary* without making it *true*. Plausibly, this still requires conventionalism about truths of a restricted class – the modal truths – since linguistic conventions will make <Necessarily, either it’s raining or it’s not raining> true. However, this view need not be committed to conventionalism about proposition truth more generally. Of course, given that necessity implies truth, it might be objected that conventionalism about necessary truth implies conventionalism about truth in general; if we can make <Either it’s raining or it’s not raining> necessary, we can also make it true. There’s an easy fix for this problem, though: restrict our powers of necessity-making to the true propositions. LMC can allow that there is a class of true non-modal propositions that is determined independently of linguistic conventions and hold that those are the propositions that are candidates to be made necessary by introduction of linguistic rules.

²⁵³ Boghossian, ‘Analyticity Reconsidered’ p.365.

There is a straightforward analogy here with the case of *de re* modality discussed in previous chapters. One version of LMC may hold that we endow objects with modal properties; but proponents of that view are unlikely to think we can endow objects with modal properties that are inconsistent with their *non-modal* properties. We can't make an object necessarily red, for example, if as a matter of fact it is blue. Similarly, we can't make false propositions necessarily true. Just as LMC ought not embrace conventionalism about an object's non-modal properties, it should not embrace conventionalism about non-modal proposition truth.

To see how this proposal would work, we can start with a Thomasson-style theory of analyticity according to which stipulated linguistic rules make some sentence analytic. Then, however the meanings of the terms in that sentence are assigned, they must be assigned in such a way that the proposition expressed by the sentence is one that is true. Of course, it is up to the world to supply a set of true non-modal propositions. The state of language-independent reality determines whether a given non-modal proposition is true or false, and the true propositions are candidates to be made necessary by our linguistic conventions. Once a true proposition has been selected as the meaning of some sentence, the linguistic rules governing the sentence will determine whether it is analytic, and in turn whether the proposition expressed is necessary. That is to say, the analyticity of a sentence is responsible for the necessity of the proposition it expresses but not for its truth. For example, it's a linguistic rule that 'bachelor' is to be applied only where 'unmarried' is applied. This makes 'All bachelors are unmarried' an analytic sentence. Then, given that the sentence expresses the true proposition that all bachelors are unmarried, that proposition gets to be necessary in virtue of our making the sentence that expresses it analytic.

5.4.1 *From conventional modal statuses to conventional truth*

Despite its promise, this proposal falls to an objection that parallels the one raised for conventionalism about modal properties in chapter 3. In that case, the problem arose because of the tight connection between something's existence, identity and persistence conditions and its modal properties. By determining the conditions under which something exists, and the changes through which it can retain its identity, we can conventionally determine what exists in a given circumstance and what is identical to what. Similarly, if we endow a proposition with its modal features, we determine which states of affairs counts as one in which the proposition is true. This is because of the modal status of a proposition, and the relations of consistency in which it stands to other propositions, are tightly connected to its *truth conditions*.

Consider the following scenario. As it happens, there are no people who are 10 feet tall or taller, and there never have been. According to LMC, the proposition <No person is over 10 feet tall> cannot come with a modal status independently of linguistic conventions. What's more, consistency between propositions is a modal notion that can be cashed out as 'possibly true together'. As such, there can be no facts about which propositions are consistent with which independently of linguistic conventions. Therefore, the modal status of true propositions, and the consistency relations between them, must be determined by the linguistic rules that govern terms. Since <No person is over 10 feet tall> is a true proposition, it is a candidate to be made necessary according to LMC. (Of course, our current conventions do *not* treat this proposition as necessary, but we are considering what would be the case if they did.)

According to the current proposal for LMC, we could make <No person is over 10 feet tall> necessary by introducing the right rules to govern the terms 'person', 'tall', 'feet' and so on, such that the sentence expressing the proposition counted as analytic. One way to do so would be to stipulate that the term 'person' only applies where '10 feet tall or less' applies. On the view under consideration, our introducing such a rule is sufficient to make the proposition necessary. In introducing such a rule, however, I have made the truth conditions of <No person is over 10 feet tall> conventional. Specifically, the new linguistic rule determines that the proposition is true in *all* circumstances. Alternatively, I could have introduced a rule according to which 'person' applies only where '10 feet tall or less' applies, unless 'over 100 years old' applies. In that case, <No person is over 10 feet tall> would be contingent. However, I have still conventionally determined truth conditions for the proposition; no circumstance in which everyone is 100 years old or younger counts as a circumstance in which there is a person over 10 feet tall. This will hold even in circumstances in which our *current* conventions for 'person', 'feet', 'tall' and so on would dictate that there *is* a person over 10 feet tall. An example of such a circumstance is one in which there is a human born of human parents, who happens to grow to be taller than 10 feet.

Determining which propositions are necessary, which are contingent, and which are which are consistent with which means determining the conditions under which a proposition is true. However, the truth conditions of a proposition are what give it its identity. To be a proposition is to be a representative entity; it is to carry information about how the world is. And, the conditions under which a proposition is true allow it to carry that information. A proposition that carries the information that it is raining is a proposition that is true when and only when it is raining, for example. A proposition that that is *not* true when and only when it is raining cannot be the proposition that it is

raining. Similarly, the proposition that <No person is over 10 feet tall> cannot be the proposition that <Only persons over 100 years of age are over 10 feet tall> insofar as they have different truth conditions. Since truth conditions have modal import, they cannot come built into propositions according to LMC. However, because a proposition's identity is determined by its truth conditions, conventionalism about the modal features of propositions entails conventionalism about propositions themselves. By conventionally determining what truth conditions are had by propositions, we conventionally determine what propositions there are. Independently of our conventions, propositions have no modal truth conditions according to this proposal. However, a proposition is individuated by its truth conditions. As such, the proposition itself does not exist independently of our endowing it with truth conditions.

On its own, conventionalism about propositions might not seem so threatening to LMC. However, from conventionalism about the truth conditions of propositions we can generate conventionalism about truth itself. Of course, conventionalism about proposition truth would run counter to the assumption we made when setting up the proposal under consideration; at the beginning of section 5.4, I suggested that LMC should accept that the world determines which propositions are true and which are false. However, we now know that independently of linguistic conventions, propositions do not have conditions of truth and falsehood. Ordinarily, we would say that a proposition counts as being made true by the world if the world satisfies its truth conditions. If the matter of the conditions under which a proposition is true is conventional, however, then the matter of whether the world counts as making a proposition true must also be conventional. On the other hand, if the truth of non-modal propositions is to be 'worldly' rather than conventional, there must be some special relationship such as truth-making that holds between the true propositions and the world that fails to hold between the false propositions and the world. If a proposition lacks convention-independent truth conditions, however, we have no informative way of characterising when that relation holds without appealing to conventional factors. Therefore, if LMC wishes to maintain that we endow propositions with their modal features, it must also accept that the world alone cannot determine which propositions are true; the truth of a proposition must be partly worldly, and partly conventional.

One might worry that the argument provided above confuses the *conditions* under which a proposition is true with whether or not those conditions are *fulfilled*. Perhaps the former can be conventional while the latter is not. For example, it is a matter of convention that public nudity is frowned upon; but whether anyone in fact counts as naked in public or not is not a matter of convention. Rather, it is determined by whether or not the person is

clothed, whether she is in public, and so on. Of course, while it may be that whether someone is naked in public is not conventional, it *is* conventional whether or her action constitutes a contravention of a social convention. The same applies to the case of proposition truth. The physical universe and its arrangement of matter is not conventional, and the physical universe plays a part in determining whether a particular proposition is true. However, the arrangement of the world alone does not suffice for proposition truth; what's also required is that our conventional linguistic rules have created an entity with truth conditions that count as satisfied by the arrangement of the world.

Once again, this problem for LMC parallels the case made in chapter 3 for why conventionalism about EIP conditions leads to conventionalism about objects. If the conditions of existence for an object are conventional, whether the object in fact exists is conventional. Similarly, if the conditions of truth for a proposition are conventional, whether the proposition is in fact true must also be conventional.

5.4.2 *From conventional de dicto modality to contradiction*

A second route from conventionalism about the modal statuses of propositions to conventionalism about propositions themselves can be constructed along the lines of Sidelle's argument for object conventionalism set out in chapter 3. Sidelle argued that combining conventionalism about modal properties with realism about objects led to contradiction. Similarly, non-conventionalism about propositions is incompatible with conventionalism about the modal statuses of those propositions. To begin, let's assume that linguistic conventions serve to endow modal statuses upon convention-independent propositions. As noted above, this view takes the modal status of a proposition to be determined by the rules governing a sentence that expresses it.

The trouble arose in chapter 3 due to cases in which we appear to have incompatible conventions for terms that refer to a single object. In the context of *de dicto* modality, we can see that LMC may also allow for incompatible conventions for sentences that express the same proposition. Consider the proposition *p*. Given realism about propositions, *p* is a convention-independent entity by hypothesis. Given LMC, whether or not *p* counts as necessary will depend on the linguistic rules governing sentences that express *p*. Specifically, if *p* is expressed by an analytic sentence it will be true necessarily, and if it is expressed by a non-analytic sentence it will be true only contingently. However, there is nothing to stop us expressing *p* using both an analytic sentence *and* a non-analytic sentence. Perhaps *p* is expressed by both the analytic 'All humans are human' and the contingent 'All featherless, non-marsupial bipeds are human.' By virtue of being

expressed by an analytic sentence, *p* must be necessary, but by virtue of being expressed by a non-analytic sentence, *p* must be contingent. A response in the spirit of Sidelle, of course would be to give up on the convention-independent status of propositions. Once again though, if propositions are conventional, whether or not some proposition is true must also be conventional.

Now, we are in a position to express our dilemma for LMC's treatment of *de dicto* modality in full. On the one hand, the theory could countenance non-conventional propositions with modal truth conditions built-in. On that view, the role played by linguistic expressions is simply to help determine which proposition is expressed by which sentence. However, such a theory does not count as genuine LMC because it fails to satisfy both conditions for the theory set out in chapter 2. This is the first horn of our dilemma. On the other hand, the theory could treat the modal statuses of propositions as conventional. This meets the conditions for LMC, but given that truth conditions are modal, this strategy quickly results in conventionalism about non-modal truth. What's more, the combination of conventionalism about the modal statuses of propositions and realism about propositions themselves commits us to the possibility of generating contradictions according to the theory. This is the second horn of our dilemma.

5.5 Abelardian sentences

In chapter 3, we considered whether treating predicates as 'Abelardian' offered a way to maintain conventionalism about modal properties with realism about objects. A similar strategy could be adopted for propositions, but similar considerations count against it. An Abelardian approach to sentences would require that the modal status of a proposition is relativised to the sentence that expresses it. To return to our example from section 5.4.2, the single proposition expressed by both 'All humans are human' and 'All featherless non-marsupial bipeds are human' would count as necessary *qua* expressed by the first sentence, and contingent *qua* expressed by the second sentence. This strategy allows us to avoid contradictions in the style generated in 5.4.2, but it does not help with the argument from section 5.4.1. Modal truth conditions had by a proposition *relative to a sentence* must still be conventional, according to LMC. As such, proposition truth will end up both conventional *and* sentence relative according to this strategy.

What's more, while the notion of an object with sortal-relative modal properties seems at least coherent, it is difficult to understand what a proposition with sentence relative truth conditions could be like. Objects can be characterised at least in part by their non-modal

properties. Apart from its truth conditions, however, there is little else we can say about a proposition that distinguishes it from other propositions. As such, a single proposition with sentence relative truth conditions has very few features, besides its actual truth or actual falsehood, that are not sortal-relative. A proposition is meant to represent how things are in the world, and this is captured by its conditions of truth. The Abelardian strategy requires that a single proposition can represent the world to be some specific way but have one set of truth conditions relative to one sentence, and another set of truth conditions relative to a second sentence. An example cited above can help show why this position is incoherent. The proposition <It is raining> is the proposition that is true when and only when it is raining; any other truth conditions cannot be had by the proposition that it is raining.²⁵⁴ A proposition that is true when and only when it is raining relative to one sentence, but is sometimes false when it is raining relative to a second sentence is not a single proposition at all.

5.6 Are conventional propositions so bad?

A Sidelle-style resolution to this problem that mirrors the solution he adopts for the case of objects would be to embrace proposition conventionalism. This means accepting that propositions are conventional entities with conventional truth conditions. On this view, there is no proposition that can be expressed by both an analytic sentence and a non-analytic sentence because propositions depend on the sentences that express them. The proposition expressed by 'All humans are humans' would be distinct from the proposition expressed by 'All featherless non-marsupial bipeds are humans' in virtue of being expressed by different sentences. By making a sentence analytic, we make it the case that there is a necessary proposition expressed by that sentence. And, by making some distinct sentence not analytic, we make it the case that there is a contingent proposition it expresses, distinct from the previous one.

I've argued above that conventionalism about propositions leads to conventionalism about proposition truth. However, perhaps that result ought to be embraced by LMC too. After all, one might argue, propositions are exactly the kind of non-natural, abstract entities about which metaphysical naturalists ought to be suspicious. There are reasons to reject this view however, stemming from the nature of propositions and the function they have as representative entities. Intuitively, as the contents of sentences, propositions

²⁵⁴ Note that while this argument suggests a single proposition can only have one set of truth conditions, it is compatible with the view that in some cases, several propositions have the same truth conditions as each other. Some might think that <It is raining> has the same truth conditions as <It is raining and 2+2=4>, for example.

contain the information we convey to other through our communication. Usually, we take for granted that our communication is about the convention-independent world. However, insofar as the meanings of our sentences are conventional, the information we convey with our talk must also be conventional. If the contents of our communications are not mind-independently true or false, it is difficult to explain why when we express truths we help each other to successfully navigate the world, while when we express falsehoods we do not. For example, when I tell you that it's raining, the fact that I express something mind-independently true about the world explains why when you take an umbrella, you don't get wet. Finally, as was the case with realism about objects, it's worth noting that it is a desirable feature of a theory of modality that it remains compatible with a range of other positions when it comes to other domains. As such, a commitment to conventionalism about proposition truth is to be avoided by LMC if possible.

5.7 On modal truth conditions and the need for possible worlds

In section 5.4.1, I argued that if a proposition's modal status is conventional, its truth conditions are also conventional. In making that argument I relied, perhaps illicitly, on the notion of the *circumstances* under which a proposition is true. For example, I suggested that if we were to make the proposition <No person is over 10 feet tall> necessary, we would make it the case that it was *true in all circumstances*. Of course, the circumstances in question must be metaphysical possibilities; and LMC cannot allow the existence of such possibilities independently of linguistic rules. This suggests a need to clarify what's meant by the claim that conventional modal statuses had by propositions entail conventional truth conditions. Usually, the truth conditions of a proposition are represented as the set of possible worlds at which the proposition is true. Given that such worlds cannot exist independently of convention, we cannot read the claim that truth conditions are conventional as the claim that we assign a set of independently existing worlds to each proposition. Luckily, the argument from 5.4.1 does not require the existence of convention-independent possible worlds in order to have force. LMC entails that there are no such worlds, and that propositions cannot have truth conditions represented in terms of them. Such worlds, if they exist at all, must be conventional. Therefore, independently of convention, propositions cannot have modal truth conditions. As such, if propositions are individuated by their truth conditions, there can be no propositions independently of convention. This is all that's required for the argument from 5.4.1 to go through.

5.8 Searching for a path back to the real world

At the end of chapter 2, I set out two conditions a theory must meet in order to qualify as linguistic modal conventionalism:

- a) The truth values of all metaphysical modal sentences are determined in a non-trivial way by conventional linguistic rules governing the use of terms.
- b) All modal features of the world are dependent on these conventional linguistic rules.

The dilemmas facing LMC set out above, and in chapters 3 and 4, suggest that satisfying both a) and b) is a difficult task. On the one hand, it is difficult to meet the non-triviality requirement for a). The truth of all sentences, including *de dicto* and *de re* modal sentences, is determined in part by the conventional linguistic rules that govern terms. A modal realist who countenances non-conventional properties had by objects, and non-conventional modal facts, can allow that the linguistic rules governing terms help to determine which modally individuated objects our singular terms pick out, and which non-conventional modal facts our modal sentences express. Such a view does not satisfy the non-triviality requirement, and nor does it satisfy b). On the other hand, views that satisfy both a) and b) lead quickly into a widespread ontological conventionalism encompassing both objects and truth. If the modal properties had by objects are conventional, objects themselves must be conventional too. And, if the modal truth conditions had by propositions are conventional, the truth of those propositions must also be conventional. It's worth noting that even Sidelle, who embraces object conventionalism, does not wish to endorse conventionalism about truth. However, the same arguments that suggest object realism is incompatible with modal conventionalism also suggest that truth realism is incompatible with modal conventionalism.

The remainder of this thesis will be devoted to providing a way out of this dilemma for LMC. The position I will defend is that LMC should reject the problematic ontology that makes a) and b) so difficult to satisfy. If LMC accepts that objects have modal properties determining EIP conditions for objects, and that propositions have modal statuses determining truth conditions, those features of the world must be explained in terms of linguistic conventions. The attempt to do so is what led LMC into so much trouble. On the other hand, if objects are not individuated modally, and propositions are not individuated by modal truth conditions, the need to explain those features is removed. Furthermore, I will argue that rejecting worldly modality does not mean that LMC must deny that there are any modal truths. Instead, LMC can still accept that both *de dicto* and *de re* modal sentences are true, and that their truth is explained in terms of linguistic

rules. In other worlds, LMC can still satisfy condition a). Condition b) will be met trivially; there will be no such modal features to explain.

CHAPTER 6

Linguistic Modal Conventionalism in the Real World: Metaphysics

As we left things at the end of chapter 5, linguistic modal conventionalism was lost in a maze of conventional objects and conventional truth. In what follows, I argue that the path back to reality requires LMC to reject the problematic ontology that led it into the maze. Specifically, LMC should deny that objects have modal properties, and deny that propositions have modal truth conditions. This position will be articulated in two parts. In this chapter, I defend the a-modal metaphysical picture of the world the view requires. In the next chapter, I set out a semantics for *de re* and *de dicto* modal sentences that does not rely on worldly modality. Section 6.1 below provides a brief summary of the overall strategy, foreshadowing both the metaphysical picture that is discussed in this chapter, and the semantic picture that is discussed in the next chapter. Then, section 6.2 defends an account of objects without modal properties, and section 6.3 defends an account of propositions without modal truth conditions. Finally, section 6.4 discusses the nature of non-modal properties, and how they can be used to fix reference to a-modal objects.

6.1 A strategy for being an ontological realist and a modal conventionalist

The problem for LMC when it came to *de re* modality arose due to the theory's treatment of objects as entities possessing modal properties. Sidelle's view, for example, was committed to object conventionalism because it took modal properties to be endowed on objects via our conventional linguistic practices. As argued in chapter 3, the modal properties of objects determine their conditions of existence, identity and persistence, and if the latter are conventional, then objects themselves must also be conventional. Similarly, the problem for LMC when it came to *de dicto* modality arose because of its treatment of propositions as possessing modal truth conditions. As argued in chapter 5, the truth conditions of a proposition partly determine whether it is in fact true, and as such, if the former are conventional the latter must be too.

Any version of LMC must hold that the truth of both *de re* and *de dicto* modal sentences depends on conventional rules governing language use. However, the conventional status of *sentence* truth is not sufficient for genuine conventionalism about *de re* modality so long as objects are treated as having modal properties that are independent of convention. And, the conventional status of sentence truth is not sufficient for genuine conventionalism about *de dicto* modality so long as propositions are treated as having

modal truth conditions independent of convention. Sidelle places himself squarely inside one horn of this dilemma; he achieves a strong conventionalism about *de re* modality by treating the modal properties of objects as dependent on the meaning of terms used to refer to them, and embraces object conventionalism. A way to avoid the dilemma entirely, however, is to give up on worldly modality. If objects have no modal properties, and propositions have no modal truth conditions, we can explain the truth conditions of *de re* and *de dicto* modal sentences purely in terms of the conventional rules governing language without fear of leaving unexplained modality in our ontology.

For this strategy to succeed, it must contain three elements. Firstly, it requires a metaphysical theory of objects and propositions that is not committed to their having modal features. Below, I will argue that objects should be viewed as spatiotemporally extended parts of the physical world that instantiate numerous non-modal properties, but no modal properties. These a-modal objects cannot have modal existence, identity and persistence conditions. Nonetheless, I will argue that denying that there are any such conditions is compatible with holding that there are existence, identity and persistence facts about objects. LMC must also embrace an a-modal theory of propositions. The view most amenable to the rejection of modal truth conditions is the structured propositions theory endorsed by Scott Soames and Nathan Salmon. I will argue that despite their lack of modal truth conditions, LMC can still treat structured propositions as true and false.

The second element of the strategy is a semantic account of *de dicto* and *de re* modal truth given in terms of linguistic rules. For the most part, the project of providing such an account will be delayed until chapter 7. Briefly, note that the truth conditions assigned to modal sentences by LMC must be entirely conventional; they cannot make reference to the a-modal physical world we inhabit. Instead, whether or not a given sentence counts as necessary, contingent, possible and so on must be fully determined by the linguistic rules that govern its terms. My project in chapter 7 will be to construct a set of possible worlds determined by the linguistic rules governing terms. Then, truth conditions for both *de dicto* and *de re* modal sentences can be given in terms of truth at worlds. As we will see, *a priori*, analytic sentences can be straightforwardly treated as true at all conventional worlds. However, *a posteriori* necessary truths, contingent analytic truths and *de re* modal truths are more difficult to incorporate into the conventionalist picture. *De re* modal sentences will be assigned truth conditions based on counterpart relations between possible individuals induced by the rules governing sortal terms. *A posteriori* necessities and analytic contingencies will be accounted for using the framework of two-dimensional semantics.

The third element that is required for LMC to succeed using the current strategy is an account of reference to a-modal objects, and an account of non-modal sentence truth. In chapters 3 and 5, I argued that LMC should maintain that we succeed in referring to objects in the real world, and that we succeed in communicating about goings on in the real world. As argued in section 3.4, Sidelle's view struggles to account for how we can achieve reference to non-conventional entities, as the rules governing terms provide their referents with modal properties on his view, thereby guaranteeing that those referents are conventional. To avoid this problem, LMC must be able to treat a-modal objects as the referents of terms in English. Furthermore, it must be able to maintain that non-modal sentences in English, such as 'Something is a person,' are made true by the physical universe we inhabit. I argue that these goals can be achieved by LMC if it adopts a theory of reference along the lines of the one endorsed by Frank Jackson. In order to make use of this theory, an account is required of the nature of non-modal properties and how we become acquainted with them. These matters are discussed in section 6.4.

In summary, the version of LMC that avoids the dilemmas articulated in chapters 3 – 5 is captured by the following claims:

- (1) The world is composed of non-modal properties and relations instantiated by physical matter and distributed in space-time.
- (2) Objects are parts of the world so defined; they are extended in space and time, and instantiate non-modal properties and relations.
- (3) Propositions are structured complexes composed of objects and non-modal properties and relations.
- (4) Singular terms pick out non-modal objects, predicates pick out non-modal properties and relations, and sentences express structured propositions.
- (5) The truth of non-modal sentences is determined by the world, once their meaning is fixed.
- (6) The truth of modal sentences is determined by the linguistic rules governing terms.

6.2 Objects without modal properties

Doing away with modal properties means accepting a particular kind of view about the metaphysics of objects. Ordinarily, objects are thought to have qualitative properties such as 'greenness', 'circularity' and so on, perhaps some temporal properties, such as 'being green at time t_1 ', and modal properties, such as 'being possibly blue'. Objects conceived

this way have properties that tell us what they are like at various times during their existence, and also what they could have been like had things been different. A-modal objects have the first two sorts of property, but do not have the last sort of property; there's nothing about them that constitutes what they *could* or *would* have been like in different circumstances. A-modal objects should be thought of as 'slices' of the physical universe. They take up space and time, and instantiate various non-modal properties, but insofar as they do not instantiate any modal properties they cannot serve as the truth-makers for modal sentences.²⁵⁵

David Lewis provides an account of what an a-modal world might look like. One way to think about the metaphysical picture endorsed by LMC is as similar to Lewis' picture if all the worlds in his pluriverse except the one we occupy were taken away. Lewis provisionally defends a view he calls 'Humean supervenience', according to which all that exists at the actual world is the 'perfectly natural' properties distributed across space-time, and that everything else supervenes on those.²⁵⁶ He says:

'We have a geometry: a system of external relations of spatiotemporal distance between points. Maybe points of space-time itself, maybe point-sized bits of matter or aether or fields, maybe both. And, at those points we have local qualities: perfectly natural intrinsic properties which need nothing bigger than a point at which to be instantiated. For short: we have an arrangement of qualities. And that is all.'²⁵⁷

The position is called 'Humean' due to Hume's famous rejection of 'necessary connections between distinct existences'; such a rejection is of course an essential element of LMC. Any position that denies that the world has modal features fundamentally but accepts that there are modal truths must explain how some modal sentences are true. Lewis achieves this using his pluriverse; LMC must achieve it using conventional linguistic rules, as we will see in chapter 7.

Dana Goswick provides a defence of what she calls 'non-modal' objects for similar reasons to those supplied by LMC; she points out that any metaphysical theory that is anti-realist about non-trivial modality but realist about objects will require them.²⁵⁸ She also makes use of non-modal objects in her 'response-dependence' theory of modally

²⁵⁵ Jonathan Schaffer defends this view of objects in 'Spacetime the One Substance,' *Philosophical Studies* Vol. 145 (2009): pp.131-148.

²⁵⁶ Daniel Nolan points out that Lewis's defence of Humean supervenience is only partial; it may turn out to be false pending discoveries to the contrary in physics, such as that there are non-spatiotemporal fundamental relations. See Daniel Nolan, *David Lewis* (Chesham: Acumen, 2005) pp.29-30.

²⁵⁷ David Lewis, *Philosophical Papers II* (Oxford: Oxford University Press, 1986) pp.ix-x. See also Nolan, *David Lewis* chapter 2 discussion of Lewis on Humean supervenience.

²⁵⁸ Dana Goswick, 'Why Being Necessary Is Not the Same as Being Not Possibly Not,' *Acta Analytica* Vol. 30 (2015): pp.267-274.

individuated objects.²⁵⁹ Goswick attributes a belief in non-modal objects to Lewis, as well as to Quine, who says of objects:

‘Physical objects, conceived thus four-dimensionally in space-time, are not to be distinguished from events or, in the concrete sense of the term, processes. Each comprises simply the content, however heterogeneous, of some portion of space-time, however disconnected and gerrymandered.’²⁶⁰

Elsewhere, Quine is famously sceptical of *de re* modality; he argues that allowing for modal operators to attach to formulas with free variables leads to ‘Aristotelian essentialism,’ and that counts against countenancing *de re* modal sentences.²⁶¹

Ultimately, it’s worth noting that *any* reductionist theory of modality must allow that at bottom, the world is a-modal. However, one source of worry for the metaphysical view required by LMC may be that entities construed a-modally do not constitute *objects* in any interesting sense. This is a worry raised by Iris Einheuser in the context a defence of her ‘conceptualist’ theory of objects.²⁶² Einheuser argues that the world itself is ‘ontologically inarticulate’ in that it does not come with modally individuated objects built in. On her view, we configure objects in the world by applying our concepts to ‘ontologically inarticulate stuff,’ thereby producing objects complete with modal properties.²⁶³ Einheuser argues that by configuring objects like statues and lumps we give those objects absolute modal properties and absolute conditions of existence and identity. However, she suggests that an alternative picture could treat modal properties as attaching to bits of the ontologically inarticulate world directly. Then, she says, modal properties and identity conditions will be sortal-relative. Her rejection of such an approach is based on the claim that the entities to which sortal-relative modal properties apply simply don’t constitute objects. The options for the conceptualist, she says, are as follows:

‘She can either factor sortal identity conditions right into the items that make up the ontology and thereby obtain configured objects governed by absolute identity. Or she can use sortal identity conditions to obtain relative identity conditions that govern mere portions of stuff.’²⁶⁴

²⁵⁹ Dana Goswick, ‘A New Route to Avoiding Primitive Modal Facts.’ See also section 2.4.4 of this thesis.

²⁶⁰ W. V. Quine, *Word and Object*, (New York: MIT Press and John Wiley & Sons Inc., 1960) p.171.

²⁶¹ W. V. Quine, ‘Three Grades of Modal Involvement,’ in *The Ways of Paradox and Other Essays*.

²⁶² See Einheuser, ‘Towards a Conceptualist Solution to the Grounding Problem’ pp.307-309.

²⁶³ Note that Einheuser is not concerned about arguments such as those provided in chapter 3, since she happily accepts that her view constitutes a kind of conventionalism about objects.

²⁶⁴ *Ibid*, p.308.

However, she says, ‘The relative identity conceptualist tells us there are no objects and goes on to do justice to what *appears* to be modal talk about objects.’²⁶⁵

Einheuser’s worry is that entities that do not have modal properties built in, conventional or otherwise, do not constitute objects. Her view is that part of what it is for there to be tables, chairs, trees and so on is for there to be modal conditions of existence and identity; entities without those properties are not tables, chairs and trees. An innocuous version of the worry would simply require that we don’t use the term ‘object’ to pick out a-modal entities; LMC should be willing to give up the term ‘object’ if nothing hangs on it. A serious version of the worry, however, denies that a-modal entities can constitute the referents of ordinary singular terms in English, or that classes of them can constitute the extensions of our predicates. However, the view that trees and tables *must* be entities with modal properties is a substantive metaphysical claim and requires argumentation to support it.²⁶⁶ So long as the metaphysical nature of objects is an open question for metaphysicians, it is open for LMC to deny that they are the sorts of things that instantiate modal properties. As such, it is not incoherent for LMC to suggest that objects are a-modal. What’s more, treating objects as a-modal helps LMC meet the metaphysical desiderata established in the introduction; the Humean view outlined in this section is both parsimonious and reductionist when it comes to objects. This topic will be discussed further in chapter 8.

Objects without modal properties must also lack modal conditions of existence, identity and persistence. Recall that a central argument for the view that conventionalism about modal properties leads to conventionalism about objects, as discussed in chapter 3, was that modal properties are intimately related to the EIP conditions of objects. To be necessarily human means that you can only be identical to something human, and that you can only exist where the property *being human* is instantiated, for example. Similarly, having certain EIP conditions means having certain modal properties. If it’s a condition of your existence that that you can only exist as a human, then you are human necessarily. Given the relation of co-dependence between modal properties and EIP conditions, rejecting the former means rejecting the latter. The consequences of this for the nature of objects are potentially momentous. I argued in chapter 3 that conventionalism about modal properties and EIP conditions leads to conventionalism about objects. A concern, then, is that denying that there are any modal properties or any EIP conditions means denying that there are any objects. A central premise in the

²⁶⁵ Ibid, p.308.

²⁶⁶ Note that Einheuser’s main reason for rejecting a-modal objects is that she thinks that such entities would fall prey to the grounding problem. However, I address that problem in chapter 7.

argument from chapter 3 was that whether some object counts as existing in a circumstance depends on whether its conditions of existence are met. So, if the conditions under which it exists are conventional, so too is the matter of whether it exists. The parallel argument here would be that if an object lacks any conditions of existence, there can be nothing that makes it the case that the object exists.

Luckily for LMC, the parallel argument can be rejected. The argument from chapter 3 assumed that there were EIP conditions had by objects, and examined what follows from treating those conditions as conventional. As such, the argument from section 3.2 can be stated using conditionals: *If* there are modal properties, *then* there are EIP conditions; and *if* there are EIP conditions, *then* existence depends on them. Here, I am arguing that LMC should reject the antecedents of both conditionals: there are no modal properties, and no EIP conditions. As such, it is also open to LMC to deny the consequent: that existence depends on EIP conditions. By rejecting the assumption that there are EIP conditions had by objects, we reject the claim that whether something exists depends on whether any EIP conditions are met. This is compatible with claiming however, that if there *were* EIP conditions, they would play a role in determining what exists.

An analogy can help show why this is consistent. In a simple monarchical system, whether or not an action is legal depends on whether the absolute sovereign allows it. As such, if you think the matter of whether something is allowed by the absolute sovereign is conventional, you will also be committed to holding that whether some action is legal is conventional. In particular, you are committed to the conditional, 'If there is an absolute sovereign, and if what the absolute sovereign allows is conventional, what is legal is conventional.' What should you then say about a society in which there is no absolute sovereign? You do not have to reject your conditional; it is still the case that *if* there was an absolute sovereign, her will would determine the laws. However, your maintaining commitment to the conditional does not mean you must deny that there can be any facts about the laws of a state without an absolute sovereign. After all, the dependence of the law on the sovereign's will is conditional on there being a sovereign. In the absence of a sovereign, some other factor may be what determines the laws.

Similarly, LMC can hold that in the absence of EIP conditions, there are *other* factors that determine which objects exist. Given that objects are simply parts of the physical world on this view, a natural suggestion is that facts about which objects exist are determined by facts about which arrangements of qualitative properties in space-time there are. This is compatible with thinking that *if* there were conditions of existence, facts about distributions of properties would not be sufficient for determining what exists. Consider a

yellow flower. Those who believe in EIP conditions can ask, ‘What are the conditions under which the flower would exist, such that those conditions are met? What would the world be like if it *didn’t* contain the flower? What would it take to destroy the flower?’ According to LMC, however, the flower’s properties alone are not sufficient to answer those questions. We can ask these questions in English, but their answers will be determined by the rules of use governing the English term ‘flower’. When it comes to the flower itself, it simply *is*. Nonetheless, there are other questions one might ask about the flower. ‘How did the flower come into existence?’ for example, can be answered by a description of the germination of a seed, its exposure to light and water, and so on. On the other hand, if it is demanded that the explanation for the existence of the flower is to be in modal terms, LMC can deny that the demand is fair.

6.3 Propositions without modal truth conditions

In chapter 5, I argued that LMC is committed to conventionalism about truth if it allows for the existence of propositions with modal truth conditions. The task here is to explain how propositions, as the contents of sentences, can be made to form part of a ‘Humean mosaic’. Unlike with a-modal objects, LMC cannot take advantage of the work of Lewis in this case, as Lewis provides propositions with modal truth conditions given in terms of concrete possible worlds. Any account that treats propositions as constructed out of possible worlds, or assigns them truth conditions relative to worlds, will be unavailable to LMC.

The way to avoid assigning modal truth conditions to propositions is to treat them as structures composed of elements of the a-modal world. Somewhat surprisingly, such an account can be found in the work of two well-known opponents of the approach to modality and meaning taken by LMC. Scott Soames and Nathan Salmon both argue for an account of propositions as complex structures composed of objects, properties and relations.²⁶⁷ Soames calls these structured propositions ‘Russellian’ after Russell’s 1903 account in which he treats objects as forming literal parts of propositions.²⁶⁸ Soames and Salmon’s view is that the meaning of a sentence (a proposition) is a composed of the meanings of the parts of the sentence, and has a structure that mirrors the sentence’s syntax. Both theorists endorse the ‘direct reference’ theory according to which the

²⁶⁷ Scott Soames, ‘Direct Reference, Propositional Attitudes, and Semantic Content,’ *Philosophical Topics* Vol. 15, No. 1 (1987): pp.47-87, Scott Soames, *What is Meaning?* (Princeton: Princeton University Press, 2010), Nathan Salmon, *Frege’s Puzzle* (Cambridge, Mass: MIT Press, 1986). For a helpful overview, see Jeffrey C. King, ‘Structured Propositions,’ In Edward N. Zalta Ed. *The Stanford Encyclopedia of Philosophy* (Fall 2017 edition).

²⁶⁸ Bertrand Russell, *Principles of Mathematics* 2nd ed., (London: Routledge, 2010) pp.43-49.

meaning of a name is simply the object it picks out. As such, it is the object itself that forms part of a proposition expressed by a sentence using the name. Properties and relations, as the meanings of predicates, also form part of propositions.

Soames provides a detailed account of the propositions expressed by sentences including sentences using a range of meaningful expressions and instantiating a range of syntactical structures.²⁶⁹ Which proposition is expressed by a sentence is determined relative to a context and an assignment of variables, on Soames's view. His account covers sentences involving quantification, conjunction, negation, belief reports and more. For example, the sentence 'Cormac is a person' expresses the proposition $\langle\langle o \rangle, P\rangle$, where P is the property of being a person, and o is the object referred to by 'Cormac'. The sentence 'Cormac believes that he is hungry' expresses the proposition $\langle\langle o, \text{prop } S \rangle, B\rangle$ where B is the belief relation, o is the object referred to by 'Cormac' and prop S is the proposition expressed by 'that he is hungry'.

Treating propositions as structures composed of objects, properties and relations has a number of advantages and disadvantages, some of which are particularly relevant in the context of LMC. A well-known advantage of the view is that it treats propositions as more fine-grained than propositions represented as sets of possible worlds; it can distinguish 'All triangles are triangular' from 'All triangles are trilateral' for example.²⁷⁰ The proposition expressed by the first sentence will have the property *being triangular* as a constituent, while the proposition expressed by the second sentence will have the property *being trilateral* as a constituent. On the other hand, a purported disadvantage of the view is that it treats the proposition expressed by 'Hesperus is Phosphorus' as identical to the proposition expressed by 'Hesperus is Hesperus,' since the object that is the meaning of 'Hesperus' is the same as the object that is the meaning of 'Phosphorus'. For LMC, this consequence is not so bad, since unlike Soames and Salmon, LMC does not deny that names have non-extensional meanings. According to LMC, names pick out objects in the real world, but they are also governed by linguistic rules that confer them with a kind of *conventional* meaning. Insofar as 'Hesperus' and 'Phosphorus' are governed by different rules, they have different conventional meanings. As we'll see in chapter 7, the rules governing terms can also be used to assign conventional meanings to sentences; this results in intensions for sentences that can be thought of as a conventional proposition. As such, 'Hesperus is Hesperus' and 'Hesperus is Phosphorus' both express the same worldly proposition, but express distinct conventional propositions.

²⁶⁹ Soames, 'Direct Reference, Propositional Attitudes and Semantic Content' pp.72-73.

²⁷⁰ Note that this advantage also requires a sufficiently fine-grained theory of properties such that *triangularity* and *trilaterality* are distinguished.

Another purported disadvantage of the Soames / Salmon view is that the structured entities that constitute propositions do not seem to be the sorts of things that possess conditions of truth or falsehood.²⁷¹ After all, $\langle\langle o \rangle, P\rangle$ is an ordered pair composed of a singleton set containing an object, and a property. However, we normally do not treat sets as having truth conditions. Of course, this purported disadvantage is an advantage for LMC, because it explicitly wishes to avoid assigning modal truth conditions to propositions. However, if structured propositions do not have modal truth conditions, we owe an explanation of how they can be true or false. A simple way to achieve truth or falsehood for structured propositions is to say that true propositions are the ones for which the objects that form part of the propositions instantiate the properties and stand in the relations attributed to them by the propositions. Presumably, there are as many structured propositions in the world as there are ways to construct them using worldly entities. So, for example, both of the following count as propositions according to the view at hand, where *e* is the Eiffel Tower, *l* is London, *p* is Paris, and *S* is the relation of being situated in:

$\langle\langle e, l \rangle, S\rangle$ $\langle\langle e, p \rangle, S\rangle$

The first proposition represents the Eiffel Tower as being situated in London, and is false. The second proposition represents the Eiffel Tower as being situated in Paris, and is true. Using this method, the true propositions can be separated from the false ones without requiring that any proposition is inconsistent with any other, or that any proposition is necessary, and so on.

One objection to the treatment of objects as a-modal claimed that objects so construed did not qualify as *objects*. A similar line of objection could be run against propositions without truth conditions. It might be argued that without conditions of truth and falsehood, propositions cannot be meaningful; one might argue that in order to carry information, propositions require truth conditions. However, structured propositions do carry information; they carry the information that the objects that form part of their structure stand in the relations that form part of their structure. The proposition is *about* objects and properties because those entities form its parts. In fact, structured propositions can even be thought to have truth conditions in an a-modal sense. A proposition is true if and only if it represents the world to be how it in fact is, and it is false otherwise. However, propositions are not associated with sets of possible circumstances in which

²⁷¹ For an argument to this effect, see Michael Jubien, 'Propositions and the Objects of Thought,' *Philosophical Studies* Vol. 104, (2001): pp.47-62.

they are true, and they do not come with modal statuses. For example, where o and o^1 are objects and T is the taller than relation, consider the following propositions:

$\langle\langle o, o_1 \rangle, T\rangle$ $\langle\langle o, o \rangle, T\rangle$

If o_1 is in fact taller than o , both propositions are false. However, according to LMC, the second proposition does not *also* have the status of being impossible. Rather, the *sentence* ‘Object o is taller than itself’ is impossible, due to the linguistic rules governing ‘taller than’.

As in the case of objects, the arguments from chapter 5 cannot be used to show that the rejection of truth conditions entails the rejection of truth. In chapter 5 I argued that if propositions have modal truth conditions, and if those truth conditions are conventional, whether a proposition in fact counts as true must be conventional. However, this argument does not commit LMC to denying that there is truth on the basis that there are no truth conditions. LMC can consistently maintain that truth would be conventional *if* there were conventional modal truth conditions while maintaining that the absence of any truth conditions is compatible with the existence of truth. All that’s required is an account of how propositions have the properties of truth and falsehood that does not rely on the existence of modal truth conditions. Such an account was given above; a proposition is true when its constituent objects stand in its constituent relations and instantiate its constituent properties.

6.4 Properties and reference

Before moving on to discuss the semantics for LMC in detail, I will address one more metaphysical question alongside a semantic question. Firstly, the account of objects provided in section 6.2 and the account of propositions provided in section 6.3 both require the existence of non-conventional properties. As such, some account of the nature of those properties must be provided. Secondly, LMC must be able to account for how it is that our singular terms come to refer to objects, and how our predicates come to pick out properties, however they are characterised. As we will see in chapter 7, the linguistic rules governing terms can be used to create a system or structure that represents the interrelations of meaning between linguistic expressions. However, in order to determine which parts of the language represent which parts of the world, the system must somehow be anchored. As Lewis argues in his paper ‘Putnam’s Paradox,’ this anchoring cannot be achieved simply through structural isomorphism between the system of language and the world. After all, structure is cheap; there are many different systems of entities (for

example mathematical entities) that are structurally isomorphic to any given system of language. As such, the meaning relation must be fixed using some other kind of relationship between entities in the world and language; for example, many have argued that meaning is fixed by causal relationships. I will argue that Frank Jackson's work can be used to demonstrate how the meanings of predicates are fixed to properties, and how the reference of singular terms can then be fixed to objects by association with properties.

Michael Devitt expresses the problem for descriptivist theories as follows:

'Description theories of reference... are *essentially incomplete*. A description theory explains the reference of a word by appealing to the application of descriptions associated with the word. So the theory explains the reference of the word by appealing to the reference of other words. How then is the reference of those other words to be explained? Perhaps we can use description theories to explain their reference too. This process cannot, however, go on forever: There must be some words whose referential properties are not parasitic on those of others. Otherwise, language as a whole is cut loose from the world. Description theories pass the referential buck. But the buck must stop somewhere.'²⁷²

Devitt's thought is that if singular terms have their reference fixed using definite descriptions, definite descriptions must have their reference fixed via some other means. Otherwise, the connection to the world is never made. Specifically, Devitt argues, 'If we are to be naturalistic, it seems that the external relation that we seek must be a causal one.'²⁷³ Devitt's conclusion is that the description theory of reference is inadequate, and must be replaced by a causal theory.

In order for our language to come to be about the world, then, it cannot be that the meanings of terms are given simply by the relations in which they stand to other terms. It must *also* be that terms come to be related with non-linguistic parts of reality. Jackson refers to Devitt's objection as the 'passing the buck' objection and argues that it is misguided.²⁷⁴ According to the description theory he endorses, the reference of singular terms is not secured via association with descriptions conceived as other bits of language. Rather, reference is secured via association of singular terms with *worldly properties*. Jackson endorses a picture of language in the world according to which such associations are taken for granted. He says:

²⁷² Micheal Devitt, *Coming to Our Senses: A Naturalistic Program for Semantic Localism*, (Cambridge: Cambridge University Press, 1996) p.159.

²⁷³ *Ibid*, p.160.

²⁷⁴ Frank Jackson, 'Reference and Description Revisited,' *Philosophical Perspectives* Vol.12 (1998): pp.203-204.

‘If we are to use physical structures to give information on how we take things to be, we need associations in the minds of transmitters and receivers of the putative information between the various structures and the various ways things might be. We use flags to give information about deaths of the famous, roadworks, the nationalities of visiting dignitaries, and so on. The system depends on known associations. Flying a flag at half-mast flag would not be much use for telling about the death of someone famous if the association between flying the flag at half-mast and death were a dark secret. In the same way, if we are to use the physical structures known as words to tell about how we take things to be, we must associate various words with various ways things might be; or, as we will put it, we must associate words with properties.’²⁷⁵

Jackson takes it to be evident that terms in English are associated with worldly properties. He then argues that reference to objects can be fixed by associating terms with properties had by objects. Ultimately, Devitt also endorses a picture according to which we come to associate terms with properties by having experiences of those properties in the world. He argues that finding out about properties requires empirical investigation. Then, we associate predicates like ‘F’ with these empirically discovered properties.²⁷⁶ If Jackson is right, our associating terms with worldly properties allows us to fix reference of singular terms to objects that instantiate the right properties. LMC can make use of this argument to maintain that associating predicates with properties provides the ‘anchor’ to the world that is required to secure reference.

Two questions remain to be answered: What are properties such that we can come to pick them out via our interactions in the world; and how does this view cohere with the position that terms are governed by rules of application and coapplication? The answer to the first question cannot be that properties are sets of objects existing in possible worlds. Perhaps this answer, impermissible for LMC, is suggested by Jackson’s use of the phrase ‘ways things might be’ to represent the nature of properties in the quotation above. However, properties need not be modally characterised. For example, a theory that treats properties as universals in Armstrong’s sense would be amenable to LMC.²⁷⁷ What’s required by LMC is simply that properties are real (non-conventional) features of the world, that we come to know about through the use of our senses, and with which we can come to associate terms. Universals play this role; their principal feature is that they are what is shared by objects similar in some respect, and what explains that similarity. Two red objects are similar, for example, because they share the universal *redness*. As for the

²⁷⁵ Ibid, p.202.

²⁷⁶ Devitt, *Coming to Our Senses*, pp.72-82.

²⁷⁷ See David Armstrong, *Universals and Scientific Realism* Vols. I and II, (Cambridge: Cambridge University Press, 1989). See also David Lewis, ‘New Work for a Theory of Universals,’ *Australasian Journal of Philosophy* Vol. 61, No. 4 (1983): pp.343-377. Note that LMC may require a more theory that treats universals as more abundant than those countenanced by Armstrong.

second question: accepting that properties come to be associated with terms in a language via causal connections need not threaten LMC's position that terms are *also* associated with linguistic rules that connect their use to the use of other terms. The properties *redness* and *greenness* for example, are both worldly entities, and are not conventional in nature. However, there are no worldly facts about whether such properties are inconsistent or consistent. Rather, once the reference of the predicates 'redness' and 'greenness' has been attached to these entities, it is up to the linguistic rules governing those terms to determine whether or not they are consistent, and therefore which modal sentences about them are true and which are false. The truth conditions of such modal sentences, given in terms of linguistic rules, are to be discussed next in chapter 7.

6.5 From worldly meaning to conventional meaning

This chapter has provided an account of the metaphysical picture that should be endorsed by the proponent of LMC who wishes to avoid commitment to conventionalism about objects and conventionalism about truth. Objects ought to be treated as bits of the 'Humean mosaic'; they are extended in time and space, and instantiate non-modal properties, but they do not instantiate any modal properties. Propositions ought to be treated as structured complexes composed of objects, properties and relations. Some of them count as true, and others count as false. However, none of them have modal conditions of truth or falsehood.

I have also argued that LMC can treat properties as worldly entities that we come to know about and associate terms with via our causal interactions with them. As agents moving around and experiencing within the physical world, we stand in acquaintance relations with various properties and the objects that instantiate them. As we become acquainted with these entities, we can fix the meanings of terms in our language such that those terms pick them out. Given that our terms pick out real, worldly objects and properties, our talk succeeds in communicating about those entities, and their arrangements make some of our sentences true. In particular, arrangements of objects and properties are what make our *non-modal* sentences true. The task that remains for LMC is to provide an account of the truth of *modal* sentences. I pursue this task in chapter 7, arguing that the linguistic rules governing terms can be used to construct a set of possible worlds, and that modal sentences can be assigned truth conditions in terms of those worlds.

CHAPTER 7

Linguistic Modal Conventionalism in the Real World: Semantics

In the previous chapter, I argued that the way for linguistic modal conventionalism to maintain realism about objects and non-modal truth is to give up on the view that objects have modal properties and propositions have modal statuses. However, giving up on modal propositions and properties means providing an alternative account of the truth of *de re* and *de dicto* modal sentences. Specifically, LMC must provide truth conditions for modal sentences such that their truth or falsehood is determined by the linguistic rules governing terms. A natural way to achieve this is to construct a set of worlds determined to be possible by the linguistic rules.²⁷⁸ Using that apparatus, LMC can provide truth conditions for *de dicto* and *de re* modal sentences in terms of truth at worlds. This chapter provides a sketch of how this might be achieved. Section 7.1 describes how worlds ought to be built. Section 7.2 provides a brief overview of the approach taken to *de dicto* modal sentences, and section 7.3 provides an in depth discussion of how LMC should treat the semantics of *de re* modal sentences, including an account of cases of *de re* inconstancy. Section 7.4 provides a basic model of the semantics for *de re* modal truth I suggest on behalf of LMC in 7.3. Then, section 7.5 considers how LMC can account for cases of necessary synthetic truth and contingent analytic truth by making use of tools from two-dimensional semantics. Next, section 7.6 presents a revised model. Finally, section 7.7 argues that the position described in this chapter avoids the objections to LMC set out in chapters 3-5.

7.1 Building conventional possible worlds

One way for LMC to treat possible worlds would be as maximal sets of consistent sentences. Theories that characterise possible worlds this way are species of what Lewis calls ‘linguistic ersatzism’.²⁷⁹ Carnap’s treatment of ‘state descriptions’ as maximal sets of atomic sentences is an example of such a view. The variety of linguistic ersatzism I will construct is slightly different; it treats possible worlds as ‘Ramsey sentences’ in the sense described by Lewis.²⁸⁰ A possible world so defined is an existentially quantified

²⁷⁸ Note that there may well be other ways to respond to the challenge set out in chapters 3-5 that are different from the one developed here. As we will see, one benefit of using the apparatus of possible worlds is that doing so makes providing truth conditions for sentences easier; a good example of this is the case of iterated modality discussed in section 7.2.

²⁷⁹ Lewis, *On the Plurality of Worlds*, chapter 3.2.

²⁸⁰ Lewis’s account of Ramsey sentences and Carnap sentences can be found in ‘How to Define Theoretical Terms,’ *Philosophical Papers I* (Oxford: Oxford University Press, 1983) pp.78-82.

sentence using expressions from a fragment of English to be specified shortly. The Ramsey sentence that constitutes a world, in conjunction with the linguistic rules governing terms, will determine for every sentence in English whether that sentence is true or false according to the world in question. In effect, this means the linguistic rules can be used to construct a ‘Carnap sentence’ that connects the Ramsey sentence to each English sentence or its negation. Briefly, here is an example of how this view is intended to work. If a possible world w is constituted by the Ramsey sentence ‘ $\exists x\exists y(Fx \ \& \ Gy)$,’ it might be combined with the Carnap sentence ‘ $\exists x\exists y(Fx \ \& \ Gy) \rightarrow (\exists x(x = a) \ \& \ Fa \ \& \ \exists y(y = b) \ \& \ Gb)$ ’ to produce ‘ $\exists x(x = a)$ ’ and ‘ Fa ’ and ‘ $\exists y(y = b)$ ’ and ‘ Gb ’ as truths at w .²⁸¹

Two points about this strategy must be emphasised. Firstly, a sentence constituting a possible world should ideally be expressed using English, as should the sentences that count as true at worlds. This is because according to LMC the modal truths must be determined by the rules governing the natural language of which they form a part; for us, that will be English.²⁸² After all, the primary epistemological advantage of LMC is that it explains modal knowledge in terms of competence with the conventional rules governing the language we speak. This can only be achieved if modal truth depends on rules governing natural language, rather than some idealised or artificial language. In what follows (especially in 7.4 and 7.6), I make use of a somewhat formalised language that I take to be an approximation of a fragment of English, in order to allow for ease of expression and precision. However, the truth conditions assigned to sentences should be thought of as close to the ones we would assign similar sentences in English. Of course, English is a very complex language, and I will not be able to provide truth conditions for every English sentence type here. Instead, I focus on the parts of English that have tended to cause trouble for LMC, and that have been discussed in earlier chapters: *de re* modal sentences, synthetic necessary sentences and contingent analytic sentences.

The second point is that it is essential that possibilities must be ‘maximal’ in that for every sentence in the language, either it or its negation will be true at each possibility.²⁸³

²⁸¹ Note that this account will be revised slightly below. I argue that there is more than one equally good way to assign extensions to names at a given world. As such, the rules will often associate more than one ‘maximal way things might be’ with a single Ramsey sentences. Details are in section 7.5.

²⁸² The primary objection to using English as the world-making language is that it is not adequately expressive. Section 8.5 discusses this objection as it is put forward by Lewis. Section 8.4 also discusses the objection that according to LMC, the modal truths cannot be translated into other languages. Note that while the natural language used to construct worlds here is English, the project could just as well be pursued in other languages.

²⁸³ There are complications that arise from this requirement, given various ways in which English is messy and imprecise. Examples of when a sentence does not seem straightforwardly true or false at a world include cases of presupposition failure, such as in ‘Jim still swims well’ (given that Jim never swam well), and cases of vagueness, such as in ‘Jim is bald’, if ‘bald’ is a vague predicate and Jim is a borderline case. I will not address these issues here, but LMC ought in principle to be able to account for such cases, even if doing so

An important terminological point to make is that since I am identifying possible worlds with Ramsey sentences expressed in a limited vocabulary, worlds will not *themselves* qualify as maximal. Instead, possible worlds determine what I will call ‘maximal possibilities’ in conjunction with the rules. Below, I often refer to a sentence as ‘true at a world’. This should be read as ‘a member of the set of sentences constituting the maximal possibility that is generated by a Ramsey sentence world in conjunction with the rules.’ The requirement of maximality helps to determine what vocabulary must be used in the Ramsey sentences that constitute worlds. The Ramsey sentences must be constructed using a sufficiently rich vocabulary such that the truth or falsehood of all sentences in English can be determined by them in conjunction with the linguistic rules. Due to complications that arise due to the necessary *a posteriori*, any terms that designate rigidly cannot be included in our Ramsey sentences. As such, the Ramsey sentences will not include any proper names or kind terms; section 7.5 describes how the linguistic rules determine which sentences involving this vocabulary are true at which worlds. The expressions that *will* be used in our Ramsey sentences will be the existential quantifier, variables for individuals, a restricted class of qualitative predicates, the negation sign, the conjunction sign, and the identity sign. The predicates that are to be left out of the Ramsey sentences are the ones which, as we will see in section 7.5, generate *a posteriori* necessities; an example is ‘containing water’.

Importantly, a maximal possibility must be consistent in that it is possible for all sentences it treats as true to be true together. Of course consistency is a modal notion, and according to LMC it must be determined by the conventional linguistic rules governing terms. Determining a relation of consistency is the primary way that the linguistic rules determine which Ramsey sentences count as possible worlds and which do not; the linguistic rules must be able to determine whether a Ramsey sentence is internally consistent. Given that the linguistic rules determine consistency, any internally consistent Ramsey sentence is guaranteed to produce an internally consistent set of sentences that follow from it via the rules. (By definition, the rules won’t take from you a consistency to an inconsistency.)²⁸⁴ Recall that the linguistic rules governing terms determine when it is permissible to apply terms together. So, a rule according to which ‘bachelor’ and ‘unmarried’ cannot be applied together will determine that ‘Something is a married bachelor’ is internally inconsistent, and cannot be true according to any world, or a member of any set of sentences constituting a maximal possibility. The same rule can

requires adopting a three-valued logic. Ultimately, according to LMC the treatment of these cases will be determined by the rules of English.

²⁸⁴ Some cases, such as the liar paradox, might be interpreted as suggesting that the rules of English are inconsistent. Here, I assume on behalf of LMC that the English rules are consistent by their own standards.

determine that ‘If something is a bachelor, it is unmarried’ will follow from all Ramsey sentence worlds. Similarly, ‘A is bachelor’ and ‘A is married’ will be inconsistent with each other, and the truth of one at a world will entail that the other is false at that world.

We can already see how some sentences in English will count as true or false at a world due to rules governing English terms. Firstly, we can abstract smaller English sentences from the big quantified Ramsey sentence that constitutes a world; the rules will determine that these small sentences must be true given that the Ramsey sentence is true. For example, if the Ramsey sentence says ‘There is something white and something green that is distinct from the white thing, and...’ the linguistic rules will guarantee that, ‘There is something white’ is a member of any maximal possibility associated with the world. They will also guarantee that ‘There is something green’ is a member of any maximal possibility associated with the world. Then, the rules for constructions involving terms like ‘or’ and ‘if... then’ will generate truths like ‘There is something white or there is something blue’ and ‘If there is something green, there is something green.’ Say, for example, that the English ‘and’, ‘or’, ‘if... then’ and so on are defined as according to the classical truth tables. Then, the truth of sentences involving them will be determined at a world by the rules from the truth of the simple sentences true at a given world. Of course, if those connectives are defined differently from how they are defined in classical logic, the complex sentences true at each world will be slightly different. And if there are multiple senses of some connectives, then there will be distinct truths at worlds for each distinct use of the term. Finally, the truth values of universally quantified sentences will be determined by the existentially quantified ones.²⁸⁵

7.2 De dicto modal truth at worlds

Armed with a set of possible worlds as Ramsey sentences, we can start to look at how the rules determine truth conditions for modal sentences of various types at those worlds. As noted above, the linguistic rules can be used to determine smaller sentences that follow from each Ramsey sentence. So, for example, the rules might determine that some sentence ‘S’ is true at w by requiring that if the Ramsey sentence that constitutes w is true, ‘S’ is true. For now, the sentences that are true at worlds will only include vocabulary from the Ramsey sentences, plus any vocabulary that is not directly included but whose application is fully determined given the vocabulary that *is* included in

²⁸⁵In order to generate universally quantified sentences from the Ramsey sentence, the Ramsey sentence will have to explicitly say that nothing else exists except the things mentioned. This can be achieved using negation and the identity sign. I.e., a Ramsey sentence can say $\sim\exists x(x \neq y \ \& \ x \neq z...)$ for every variable mentioned in the sentence.

combination with the rules. So, ‘Some chair is comfortable’ and ‘All tables are wooden’ are examples of sentences that might be true at some world given the resources we have so far.

Armed with a set of sentences true at each world, *de dicto* modal truths expressed using this limited vocabulary can be determined at worlds relatively straightforwardly. Which system of modal logic is used will depend on the rules governing the modal terms in our language. For simplicity, assume that the system governing English metaphysical modal adverbs is S5. Then, ‘Necessarily S’ will be true at a world if and only if ‘S’ is true at all worlds. ‘Possibly, S’ will be true at a world if and only if ‘S’ is true at some world. ‘Possibly, necessarily S’ will be true at a world if and only if ‘Necessarily S’ is true, and so on. If it turns out that the best interpretation of English requires the accessibility relation between worlds to be restricted, which modal sentences are true at which worlds will be determined accordingly. Note that treating modal truths as determined by truths at conventionally articulated possible worlds makes the issue of dealing with iterated modality much easier as compared to the traditional treatment of necessity as equivalent to analyticity. On this view, the truth of ‘Necessarily, necessarily S’ does not require that ‘Necessarily, S’ is analytic.²⁸⁶ Instead, the rules governing the modal adverbs directly determine whether, for example, ‘necessarily, necessarily’ ought to be applied where ‘necessarily’ is applied. This general approach to *de dicto* modality will be expanded once *a posteriori* necessity has been dealt with in sections 7.5 and 7.6.

7.3 De re modal truths at worlds

Accounting for *de re* modal truths is not so straightforward. Doing so will require an account of possible individuals existing at a worlds (7.3.1), and the counterpart relations that exist between them (7.3.2). Armed with that apparatus, I will outline a strategy for assigning truth conditions to quantified *de re* modal sentences, including those involving restricted quantification and definite descriptions (7.3.3 – 7.3.8). In 7.4, I construct a model for quantified modal sentences based on the strategy I discuss below.

7.3.1 *Laying the groundwork for de re modal truth: possible individuals*

Most accounts of *de re* modality provided in terms of possible worlds assume the existence of possible individuals at those worlds, and define *de re* modal truth in terms of

²⁸⁶ Gillian Russell notes that this is one implausible consequence of treating necessity as equivalent to analyticity. The present account avoids that consequence. (See Russell, ‘Necessity and Meaning’ pp.786-787.)

the properties had by those individuals. Quantified modal logics normally introduce a domain, and the constants and variables in the relevant language are assigned a member of that domain as their denotation under an interpretation and variable assignment. Then the truth values of formulas such as ‘ $\forall x(\Box Gx)$ ’ or ‘ $\exists x(\Diamond Fx)$ ’ are determined by whether the denotation of the variables and constants are part of the interpretations of the predicates at worlds.

In order to assign truth conditions to *de re* modal sentences then, it is helpful for us to construct possible individuals existing at worlds. We can do this using the existentially quantified sentences that count as true according to our possible worlds. The Ramsey sentence that constitutes a possible world effectively tells us how many objects there are at a world and what they are like, and therefore provides the resources for building entities to act as possible individuals. Lewis offers a way to do this on behalf of the linguistic ersatzer.²⁸⁷ He notes that a possible individual should not be represented as a subset of a world, or in other words, as a subset of the sentences that make up a world set or are evaluated as true at a world. After all, he notes, a subset of the full sentences true at a world is an incomplete description of a world, not a complete description of an individual. Lewis’s suggestion is that a possible individual can be represented as a maximal consistent set of open sentences with a free variable, or equivalently, a maximal consistent set of predicates. For us, the rules will determine which sets of predicates are consistent. In fact, for every maximal set of predicates that the rules determine to be consistent, there will be a sentence true at some world that asserts that such an individual exists. So, if {F, G, H} are one such set, there’ll be some world where $\exists x(Fx \ \& \ Gx \ \& \ Hx \ \& \ \sim Ix \ \& \ \sim Jx\dots)$ will be true. An individual exists at a world if and only if there is an existentially quantified sentence true at that world according to which there is something that instantiates all the predicates in the individual’s set.

Here, we have a choice. We can include *every* predicate that is true of an individual in the individual’s set, or only the ones that use the limited vocabulary that makes up our Ramsey sentence. I will opt for the latter as it makes dealing with *de re* inconstancy and *a posteriori* necessity easier later on. Remember that the vocabulary in the Ramsey sentences is intended to be sufficiently rich such that all English sentences can be assigned truth values at worlds on the basis of the linguistic rules. Similarly, the possible individuals constructed using the Ramsey sentence vocabulary will be such that the rules determine whether any other predicate is consistent or inconsistent with those included in the individual’s set. So, for example, if the sentence ‘ $\exists x(Fx \ \& \ Gx)$ ’ is true at a world, ‘F’

²⁸⁷ Lewis, *On the Plurality of Worlds* pp.148-150.

and 'G' will be members of the set of predicates that constitutes an individual at that world. However, if the rules require that 'H' is applied wherever 'G' is applied but 'H' is not directly mentioned in the Ramsey sentence, 'H' will not be included in the individual's set. On the other hand, it will remain the case that at the world in question, it is true that there is something that is F, G and H. An important consequence of adopting this approach, as we will see later (7.3.3), is that modal predicates do not form part of an individual's predicate set.

As with worlds, the set constituting an individual will not itself be maximal, but the set of predicates true of an individual will be maximal. Note that since the set of predicates true of an individual is maximal, no two worlds will contain the same possible individual. To exist at a world where 'S' is true, for example, will be part of what defines an individual existing at that world. As Lewis puts it, 'by the time we are done describing an individual completely, we have *en passant* described the world wherein it is situated.'²⁸⁸ Above, I noted that an individual exists at a world if and only if there is an existentially quantified sentence true at that world according to which there is something that instantiates all the predicates in the individual's set. Lewis's point is that for an individual to be maximal it will need to contain complex predicates such as 'coexists with something F,' 'is such that S is true', and so on. An individual of this sort will be such that only a single world contains the existentially quantified sentence according to which there is something with all the predicates in the individual's set.

It is important to note that individuals defined as maximal consistent sets of predicates do not replace objects in our theory. As argued in chapter three, LMC ought to endorse object realism. But, the maximal consistent sets of predicates that constitute 'possible individuals' are pieces of language, not the flesh and blood objects that vindicate object realism. Such flesh and blood objects should still constitute the referents of our names and definite descriptions as they are used by us in speech and writing, as part of the happenings of the physical universe we inhabit. Sometimes, a flesh and blood object will instantiate all the non-modal properties picked out by the predicates in a set that constitutes an 'individual'. In these cases, we can say that the individual is *actualised*. Indeed, all the possible individuals that exist according to the actual maximal possibility will correspond to flesh and blood objects. This chapter includes much talk about entities such as people, statues and lumps. Unless otherwise specified, it should be assumed that the entities in questions are *possible individuals* as defined above, rather than flesh and blood objects.

²⁸⁸ Ibid, p.149.

7.3.2 *Laying the groundwork for de re modal truth: counterpart relations and dominant sortals*

Using the notion of a possible individual, we can start to think about what it takes for *de re* modal sentences to be true at worlds. Ultimately, the truth of sentences involving modal predicates must be determined by the linguistic rules governing terms. Broadly, my strategy will be to argue that the modal predicates that apply to some individual are determined by the rules governing the predicates that make up the individual's set. So for example, if a predicate in some individual's set is 'person', and the rules governing 'person' say that the term must only be applied where 'worthy of moral concern' is applied, the predicate 'necessarily worthy of moral concern' will apply to the individual. Of course, we must say *which* predicate in an individual's set is the one that determines which modal predicates true are true of it. Plausibly, the rules for English determine that some predicates are the ones with which we tend to associate conditions of existence, identity and persistence while others are not. For example, we do not judge that someone's status as a *bachelor* is what determines what they could survive. After all, we do not treat bachelors as ceasing to exist after they are married. Normally, we judge it to be a bachelor's *personhood* that determines what he can survive and what he cannot survive. I will use the term 'dominant sortal' to pick out those predicates with which we associate EIP conditions, and which determine the modal predicates that apply to a given possible individual.²⁸⁹ Usually, there is just one dominant sortal belonging to any individual's set. A person might be a philosopher, a sister, tall, friendly, and so on, but none of the latter predicates determine her modal properties. In some cases, English *does* allow for more than one dominant sortal to apply to a given individual. These are the cases that generate *de re* inconstancy, as we will see shortly.

Which *de re* modal predicates apply to an individual, then, is determined by its dominant sortal(s). In effect, we want the rules governing dominant sortals to define a counterpart relation among individuals at worlds. Then, we can say that an individual is possibly F if one of its counterparts is F. While a similar strategy might define a cross-world identity relation among individuals rather than a counterpart relation, I use a counterpart relation for two reasons. Firstly, it's plausible that the rules might provide a given individual with more than one counterpart in a single world. Secondly, using counterpart relations rather than cross-world identity helps deal with cases of *de re* inconstancy. Both such cases are also discussed below.

²⁸⁹ This terminology comes from Michael Burke, 'Preserving the Principle of One Object to a Place: A Novel Account of the Relations among Objects, Sorts, Sortals and Persistence Conditions,' *Philosophy and Phenomenal Research*, Vol. 54. (1994): pp.591-624. Note however that Burke argues that there is only one dominant kind per object, and his account of which kind is dominant is not conventionalist.

So, how can dominant sortals define counterpart relations for individuals at worlds? A natural first pass is to say that an individual u qualifies as a counterpart of a second individual v so long as v falls under a dominant sortal ‘G’, such that it is permissible according to the rules to apply all the predicates in the set corresponding to u alongside ‘G’. Intuitively, this captures the thought that u is a counterpart of v when v ’s dominant sortal determines the predicates in u to be a way for v to be. This first pass treats every member of a dominant sortal as a counterpart of every other member of the dominant sortal; every person will be a counterpart of every other person, for example. That means denying that people have their origins essentially, or that they have any other features essentially that are not had by all people essentially. I think this position is at least plausible; after all, it seems possible that I could have been just like you in all qualitative respects and you could have been just like me in all qualitative respects. However, section 7.5 below discusses how the LMC could adopt a position like the essentiality of origin if she wished, and how counterpart relations in general can be restricted. I’ll maintain the assumption that all members of a dominant sortal are counterparts of all other members for the rest of section 7.3. Taking this approach is one of the reasons why we had to analyse *de re* modal truth in terms of counterpart relations, rather than cross-world identity relations: very often, an individual will have more than one counterpart within a single world.

7.3.3 *How not to assign truth conditions to de re modal sentences*

Armed with a relation of counterparts between individuals, we can start to think about how to spell out the truth conditions for *de re* modal claims. When doing so, there are two important desiderata that must be met. Firstly, the account must live up to the standards set for it in chapters 3 – 6. In chapters 3 and 4, I argued that views according to which we endow objects with modal properties lead to object conventionalism. And in chapter 6, I argued that the way for LMC to avoid that uncomfortable consequence was to deny that (flesh and blood) objects have modal properties. Secondly, the position must be able to account for cases of *de re* inconstancy, like the statue / lump case. In chapter 3 I argued that treating the statue and the lump as distinct due to modal differences was untenable if LMC wishes to avoid object conventionalism. As a result, the strategy pursued here must treat statues and lumps as identical. These desiderata mean the position must be spelled out such that a) it is not committed to the view that objects come to have conventional modal properties and b) it can account for cases of *de re* inconstancy without falling into contradiction. The first step toward achieving this second goal is already taken by treating individuals as standing in counterpart relations to individuals at other worlds rather than

cross-world identity relations, since it is open to LMC to treat these counterpart relations as sortal-relative, but harder to treat identity as sortal-relative.²⁹⁰

Both desiderata would create issues if we had included modal predicates such as ‘ $\diamond F$ ’ or ‘ $\Box G$ ’ as members of the sets of predicates that constitute individuals. Say, for example, that the set of predicates constituting an individual at a world includes {statue, lump, beautiful, admired, valuable...}. We could argue that when something has a counterpart that is F, ‘ $\diamond F$ ’ goes into the set that constitutes the individual. However, this leads to problems on two fronts. First of all, given that one of this individual’s lump counterparts is squashed into a ball of clay, the individual will end up satisfying the predicate ‘possibly squashed into a ball of clay’ *simpliciter*, even though none of its statue counterparts are squashed. Secondly, it is difficult to avoid the commitment that we endow objects with modal properties if we include modal predicates in the sets that constitute individuals, given that which modal predicates go in the sets must be determined by conventional linguistic rules.²⁹¹ As noted above, whether or not some possible individual corresponds to a flesh and blood object is determined by whether some flesh and blood object satisfies all the predicates in the set that constitutes the individual. If modal predicates are included in those sets, either none of them will correspond to flesh and blood objects, or flesh and blood objects must come to instantiate modal properties by convention.

Sidelle’s strategy for avoiding the problem of inconsistent modal predicates applying to a single individual was to deny that two dominant sortals governed by different rules can ever form part of the same individual’s set, given that they induce different counterpart relations.²⁹² (At least, that is Sidelle’s solution translated into the language used here; his way of putting things is very different.) This strategy would allow us to put modal predicates in the sets for individuals, but leads to object conventionalism so long as flesh and blood objects correspond one-to-one to possible individuals, as per Sidelle’s argument discussed in chapter 3. Briefly, here is why. In order to avoid object conventionalism, the physical world must determine how many objects there are. In chapter 6, I suggested that LMC should treat objects as portions of space-time instantiating non-modal properties. As such, the world will determine whether any portion of the world instantiates both of the non-modal properties *statuehood* and *lumphood*. It seems that these properties in fact *are* both instantiated by a single portion

²⁹⁰ Note that treating counterpart relations as sortal-relative does not fall prey to the objections raised for the Abelardian approach in chapter 3 because real world, flesh and blood objects are not treated as satisfying modal predicates at all on the view defended here. As a result, they do not end up with sortal-relative EIP conditions.

²⁹¹ In section 7.7, I consider that objection that even allowing modal predicates to be true of actualised possible individuals endows flesh and blood objects with conventional modal properties.

²⁹² See Sidelle, ‘Modality and Objects’, and also chapter 3 of this thesis for discussion.

of the world. But, the Sidellian strategy requires that all lumps are distinct from statues. That means that, once again, unless non-identical possible individuals can correspond to a single flesh and blood object, conventional practices determining that individuals are distinct must also determine that flesh and blood objects are distinct. A second way to avoid the problem of contradictory modal predicates applying to statues / lumps is to relativise modal predicates to dominant sortals. Then, ' $\diamond F$ qua statue' can go in the same set as ' $\sim \diamond F$ qua lump', since the predicates do not contradict one another. However, this option still means that we endow objects with modal properties, insofar as a flesh-and-blood object must satisfy all the predicates in an individual's set in order for it to correspond to an individual. As argued in chapter 3, endowing objects with modal properties (even sortal-relative ones) means endowing them with conditions of existence, identity and persistence, which once again leads to object conventionalism.

7.3.4 *Relativising reference*

The strategy I will pursue here does not include modal predicates in the sets of predicates that constitute individuals. As noted above, the only predicates included in an individual's set are those that are included in the Ramsey sentence constituting the world at which the individual exists. Nonetheless, I will assign truth conditions to quantified *de re* modal sentences such as ' $\exists x(\diamond Fx)$ ' so that they sometimes come out true, and their truth is determined by the rules governing dominant sortals. The strategy will account for *de re* modal inconstancy by treating *reference* as relative to a counterpart relation or dominant sortal. Rather than treating predicates like 'possibly squashed' as implicitly meaning 'possibly squashed as a lump' or 'possibly squashed as a statue', I treat referring terms as associated with a denotation (here a possible individual, rather than a flesh and blood object), only under a dominant sortal. Once again, we are still setting aside sentences involving names for now; we will simply look at quantified sentences involving variables, modal operators and qualitative predicates, such as 'Something is possibly F' or 'All bachelors are necessarily people'.

To see how reference can be 'sortal relativised' in a way that meets our desiderata, we need to start with a picture of how truth values are usually assigned for ordinary sentences involving quantification. (This picture will be altered shortly to allow for sortal relativity.) Usually, we check whether 'Something is F' is true by checking whether there is something in our domain which is part of the interpretation for the predicate 'F'. For us, the domain is our set of individuals, which is to say a set of sets of predicates. The interpretation of a predicate will be a subset of the domain. In particular, the interpretation of 'F' will be those individuals that include 'F' as one of their members.

Slightly more technically, we should say that a ‘variable assignment’ assigns each of our variables ‘ x ’, ‘ y ’, ‘ z ’ and so on a denotation that is a member of the domain. Then, we check the truth of ‘ $\exists x(Fx)$ ’ by checking whether for, some member of the domain u , when the variable assignment is altered just so that ‘ x ’ is assigned u as its denotation, ‘ Fx ’ is true.²⁹³ We check the truth of ‘ $\forall x(Fx)$ ’ by checking whether for every member of the domain, when the denotation of ‘ x ’ is fixed to that member, ‘ Fx ’ is true. What about quantified sentences with modal predicates? ‘ $\exists x(\Diamond Fx)$ ’ is normally taken to be true when there is some member of the domain u such that when the variable ‘ x ’ is assigned u as its denotation, $\Diamond Fx$ is true. For counterpart theorists, $\Diamond Fx$ is true when x picks out u so long as u has a counterpart that is in the interpretation of ‘ F ’ at some world.

The strategy I’ll adopt is to argue that variables are assigned denotations only relative to a dominant sortal. Given that dominant sortals induce counterpart relations between possible individuals, $\Diamond Fx$ will then depend for its truth on the counterpart relation induced by the dominant sortal via which ‘ x ’ refers. One way to achieve this result is to treat the values assigned to variables as pairs consisting of an individual and a dominant sortal that is a member of the individual’s set. Say that ‘ F ’ and ‘ G ’ are both dominant sortals, and u is an individual that includes F and G as members. The variable ‘ x ’ might be assigned $\langle u, F \rangle$ by a variable assignment, while the variable ‘ y ’ is assigned $\langle u, G \rangle$. Predicates will still be assigned members of the domain (individuals) *simpliciter* by an interpretation function. We’re only interested in one such interpretation of our predicates: the one that treats an individual as part of the interpretation of a predicate if and only if the individual includes that predicate as a member.

7.3.5 Truth conditions for *de re* modal sentences

Now, we can start to assign truth conditions for various *de re* modal sentences. First of all, when will ‘ $\exists x(\Diamond Fx)$ ’ be true? The truth of this sentence will require that there is some member of the domain u paired with some dominant sortal G such that when ‘ x ’ picks out $\langle u, G \rangle$, ‘ $\Diamond Fx$ ’ is true. This latter condition will be met when the dominant sortal from the pair (G) induces a counterpart relation such that one of the counterparts of the individual from the pair (u) is F . For example, ‘Something is possibly a carpenter’ will be true if an individual u in the domain is a person, because the ‘person’ sortal provides any person with counterparts that are carpenters. That means the pair $\langle u, \text{person} \rangle$ will be a value of ‘ x ’ that can make the sentence true. How about ‘ $\forall x(\Diamond Fx)$ ’? This will be true when *every*

²⁹³ In what follows I often casually refer to ‘when a variable is assigned u ’ or ‘when the denotation of ‘ x ’ is fixed to u ’ in the context of discussing truth conditions for sentences. This should be read as holding fixed some variable assignment that is altered such that ‘ x ’ is assigned u .

value of ‘ x ’, or every individual / sortal pair, satisfies $\Diamond Fx$. In other words, ‘Everything is possibly F’ will only be true if every counterpart relation for every individual includes a counterpart that is F.

This strategy meets our first desideratum because it does not require us to assign modal properties to ‘real objects’, and those objects don’t ‘satisfy’ modal predicates in that modal predicates don’t make up the possible individuals which represent objects. However, we are not forced to give up on the truth of *de re* modal sentences. This strategy should also allow us to account for cases of *de re* inconstancy, and thereby to meet our second desideratum. If something in our domain (u) is a clay statue, then when ‘ x ’ is assigned $\langle u, \text{lump} \rangle$, ‘ x is possibly squashed ($\Diamond Sx$)’ should be true. When ‘ y ’ is assigned $\langle u, \text{statue} \rangle$, ‘ $\Diamond Sy$ ’ should be false. So far so good; however, we still need to show we haven’t committed ourselves to contradictions. Is it the case that $\exists x(\Diamond Sx \ \& \ \sim \Diamond Sx)$ is ever true? The answer is no; that would require that some value of x pairs a member of the domain with a dominant sortal that has in its interpretation *at least one* individual that include ‘squashed’ as a member, and *no* individuals that include squashed as a member. Of course, there is no such dominant sortal.

Still, the sentence ‘ $\exists x \exists y (\Diamond Fx \ \& \ \sim \Diamond Fy \ \& \ (x = y))$ ’ can be true according to this strategy, if we spell out what it takes for ‘ $x = y$ ’ to be true in the right way. In order for ‘ $x = y$ ’ to be true, x and y must be assigned the same denotation, but it doesn’t matter under which counterpart relation. In other words, the pairs that constitute the values for the variables x and y under our variable assignment must pair the same member of the domain with some sortal, but it doesn’t matter if the sortals in each pair are different. ‘ $x = y$ ’ is true even if the value of x is $\langle u, G \rangle$ and the value of y is $\langle u, H \rangle$. In order for ‘ $\exists x \exists y (\Diamond Fx \ \& \ \sim \Diamond Fy \ \& \ (x = y))$ ’ to be true, it must be that there are two individual / sortal pairs $\langle u, G \rangle$ and $\langle u, H \rangle$ such that a) G permits the application of F , so that when x is assigned $\langle u, G \rangle$ $\Diamond Fx$ is true, and b) H does not permit the application of F , so that when y is assigned $\langle u, H \rangle$, $\sim \Diamond Fy$ is true. Given that the truth of ‘ $x = y$ ’ pays attention only to which individual the variable picks out, not the sortal it’s paired with, ‘ $x = y$ ’ is also true. In general this strategy has the result that variables picking out the same individual can be substituted while preserving truth in non-modal contexts no matter what sortal they are associated with. This is because the truth of sentences involving non-modal predicates such as ‘ F ’ depends only on the individual picked out, not the sortal it’s selected under, and the same applies to identity sentences. In modal contexts, however, this isn’t so; in these cases, which sortal an individual is selected under matters. Given that the truth conditions for *de re* modal sentences do not allow us to substitute x and y in modal contexts even when $x = y$ is true,

the truth of $\exists x \exists y (\diamond Fx \ \& \ \sim \diamond Fy \ \& \ (x = y))$ does not commit us to a contradiction. With this basic strategy in place, I will go on to discuss cases of restricted quantification and definite descriptions. Note however, that the model presented in section 7.4 is based purely on the strategy articulated above.

7.3.6 *Three strategies for restricted quantification*

As things stand, the strategy of relativising reference does not appear to get the right truth conditions for sentences involving restricted quantification. Take for example, ‘Some statue is possibly squashed’, or $\exists x (Stx \ \& \ \diamond Sx)$. This sentence is apparently false, but it comes out true given what’s been said so far. In order for the sentence to be true on the relativised reference strategy, there must be some value of x that is in the interpretation of ‘statue’ that also satisfies $\diamond Sx$. If u is a clay statue, $\langle u, \text{lump} \rangle$ will be such a value of x . After all, ‘statue’ will be one of the predicates in the set that constitutes u , and non-modal predicates do not care about dominant sortals. So ‘Stx’ should be true when x takes the value $\langle u, \text{lump} \rangle$. And, given that $\diamond Sx$ pays attention to the sortal paired with u , which is ‘lump’, $\diamond Sx$ should be true also. This looks like the wrong result. Similarly, ‘All lumps are possibly squashed’ will be false when it should be true, because an individual / sortal pair $\langle u, \text{statue} \rangle$ will satisfy ‘lump’ while failing to satisfy ‘possibly squashed.’

There are three options available for us when it comes to these cases. The first option is to change our truth conditions to account for them. One way to do that would be restrict the values of variables that can satisfy dominant sortals. We already know that the values of x that can satisfy $\diamond Sx$ are only the ones that pair an individual with a dominant sortal with which ‘S’ can be applied. However, we could also require that if ‘F’ is a dominant sortal, ‘Fx’ is only satisfied by values of x that pair an individual with F itself.²⁹⁴ If we institute this requirement, $\exists x (Stx \ \& \ \diamond Sx)$ comes out false, because ‘Stx’ is not satisfied by $\langle u, \text{lump} \rangle$, and $\diamond Sx$ is not satisfied by $\langle u, \text{statue} \rangle$. The problem with this approach is that other sentences that we wanted to be true are now false also. For example, $\exists x (Stx \ \& \ Lx)$ will be false, because the only values of x satisfying ‘St’ are those pairing individuals with the ‘statue’ sortal, and the only values of x satisfying ‘L’ are those pairing individuals with the ‘lump’ sortal. This result is particularly strange given that the sentence $\exists x (Stx \ \& \ Lx)$ is treated as false even though a single individual includes both ‘St’ and ‘L’ as predicates that make up its set. Of course, we could still maintain the truth of $\exists x \exists y (Stx \ \& \ Ly \ \& \ (x = y))$, because the truth of $x = y$ does not require the values of x and y to pair individuals with the same sortal. In effect, this option allows dominant

²⁹⁴ Note that on this strategy, if the rules require that ‘G’ can only be applied where some dominant sortal ‘F’ is applied, ‘Gx’ will only be satisfied by values of ‘x’ that pair some individual with ‘F’.

sortals to create ‘modal contexts’ themselves in that terms picking out the same individual won’t be substitutable in those contexts unless they refer via the same sortal.

The second option available is to leave our truth conditions as they are and allow conversational context to restrict the domain of individual / sortal pairs over which we quantify when we are making modal assertions. For example, in the context of discussing a particular piece of art, we may ignore all $\langle u, \text{lump} \rangle$ pairs. With such pairs temporarily removed from our domain of quantification, ‘ $\exists x(\text{Stx} \ \& \ \diamond \text{Sx})$ ’ comes out false because there is no $\langle u, \text{lump} \rangle$ to satisfy ‘ $\diamond \text{Sx}$ ’. On the other hand, in the philosophy classroom, ‘ $\exists x(\text{Stx} \ \& \ \diamond \text{Sx})$ ’ can rightly be considered true, since our domain of quantification is unrestricted. (Consider: a philosopher who favours a ‘monist’ solution to the statue / lump problem may well want to say, ‘There is some object, namely a lump of clay, that counts as a statue but could be squashed.’) This option for dealing with restricted quantification may be preferable to the first option because it allows context to select dominant sortals (and the counterpart relations they induce) for attention in vastly more complex ways than simply by ‘mentioning’ one over another in the sentence, as we do when we consider whether a *statue* is possibly squashed, or a *lump* is possibly squashed. Perhaps merely being in an art gallery is enough to make us ignore the $\langle u, \text{lump} \rangle$ pairs and focus on $\langle u, \text{statue} \rangle$ pairs when considering possibilities for certain individuals. Similarly, watching an artist create and mould clay might bring the $\langle u, \text{lump} \rangle$ pairs into focus.

Finally, a third option leaves our domain of quantification fixed across conversational contexts, and relativises truth conditions to contexts. It allows context to decide when a sentence has truth conditions like those originally provided in 7.3.5, and when a sentence has truth conditions like those provided according to the first option described above. The idea would be that *sometimes* sentences of the form ‘There is an F that is G’ are made true only by $\langle u, F \rangle$ pairs that satisfy G, and other times they are made true by any $\langle u, \Pi \rangle$ pair that satisfies G. If LMC were to adopt this option, it would be helpful to modify its syntax so that similar sentences with different truth conditions can be distinguished. For example, when ‘Some F is G’ is such that it can only be made true by $\langle u, F \rangle$ pairs, it could be written ‘ $\exists x:Fx(Gx)$ ’. And, when the same sentence can be made true by any $\langle u, \Pi \rangle$ pair, it could be written ‘ $\exists x(Fx \ \& \ Gx)$ ’. While it seems that one of the two contextual approaches will serve better than the first approach discussed, I will not commit to a hard and fast commitment on behalf of LMC to any of these three options. However, note that the model constructed below assumes the second option described in this section.²⁹⁵

²⁹⁵ A number of authors have provided contextualist solutions to problems involving modals. For example, see Angelika Kratzer, ‘What “Must” and “Can” Must and Can Mean,’ *Linguistics and Philosophy* Vol. 1, No.

7.3.7 Definite descriptions

With truth conditions for quantified *de re* modal sentences in place, we can also deal with definite descriptions by analysing them in terms of quantification. We can do this using Bertrand Russell's theory of definite descriptions. (However, Russell's account will have to be modified slightly, as we'll see in a minute.) For Russell, 'The unique F is G' can be written as ' $\exists x(Fx \ \& \ \forall y(Fy \rightarrow (x = y)) \ \& \ Gx)$ '.²⁹⁶ Treating definite descriptions this way allows us to give *de re* modal sentences involving them truth conditions using the resources we already have. Take for example the sentence, 'The biggest thing in the universe in the world is necessarily massive.' According to Russell's strategy, this says ' $\exists x(BTx \ \& \ \forall y(BTy \rightarrow (x = y)) \ \& \ \Box Mx)$ '. For us, the truth of that sentence requires that there is individual / sortal pair $\langle u, F \rangle$ such that when x is assigned that pair as its value, BTx is true, and every individual / sortal pair that satisfies BT is such that when 'y' is assigned that pair as its value, ' $x = y$ ' is true, and ' $\Box Mx$ ' is true. The latter will be true so long as F induces a counterpart relation such that all F counterparts of u satisfy M .

While this account will work in many cases, it doesn't work in cases of *de re* inconstancy. If the biggest thing in the universe is a clay statue, 'The biggest thing in the universe is not possibly squashed' will be true, as will 'The biggest thing in the universe is possibly squashed.' This is because all that's required for ' $\exists x(BTx \ \& \ \Diamond Sx)$ ' to be true is that some value of x satisfying BT also satisfies $\Diamond S$. $\langle u, lump \rangle$ will do this. Similarly, for ' $\exists y(BTy \ \& \ \sim \Diamond Sy)$ ' to be true, all that's required is that some variable value satisfies both BT and $\sim \Diamond S$. $\langle u, statue \rangle$ will do this. And of course, this is compatible with the truth of ' $\forall y(BTy \rightarrow (x = y))$ ' because, ' $x = y$ ' is true when x picks out $\langle u, lump \rangle$ and y picks out $\langle u, statue \rangle$. As a result, ' $\exists x(BTx \ \& \ \forall y(BTy \rightarrow (x = y)) \ \& \ \Diamond Sx)$ ' is true, as is ' $\exists x(BTx \ \& \ \forall y(BTy \rightarrow (x = y)) \ \& \ \sim \Diamond Sx)$ '.²⁹⁷

Fortunately, fixing the problem is straightforward; all we need is to change our interpretation of definite descriptions slightly. We can analyse 'The biggest thing in the

3 (1977) pp.337-335 and David Lewis, 'Scorekeeping in a Language Game,' *Journal of Philosophical Logic* Vol. 8, No. 1 (1979) pp.339-359 for examples of how different 'flavours' of modality might be thought to express the same concept, with truth relativised to context. Among others, Keith DeRose, 'Epistemic Possibilities,' *Philosophical Review* Vol. 100, No. 4 (1991) pp.581-605 and Andy Egan, John Hawthorne and Brian Weatherston, 'Epistemic Modals in Context,' in G. Preyer & G. Peter eds., *Contextualism in Philosophy* (Oxford: Clarendon Press, 2005) offer a contextualist treatment of epistemic modality. These accounts may offer useful guides as to how LMC could relativise metaphysical modal claims to context in order to account for *de re* inconstancy and definite descriptions.

²⁹⁶ See Bertrand Russell, 'On Denoting,' *Mind* Vol. 14, No. 56 (1905): pp.479-493.

²⁹⁷ Note that given Russell's interpretation of definite descriptions, combined with the account given above according to which the truth of ' $x=y$ ' does not permit the substitution of ' x ' and ' y ' in modal contexts, 'The biggest thing in the universe is possibly squashed' and 'The biggest thing in the universe is not possibly squashed' do not directly contradict one another. However, as is explained below, altering Russell's account slightly can remove even the appearance of contradiction.

universe is possibly squashed' as ' $\exists x(BTx \ \& \ \forall y(BTy \rightarrow ((x = y) \ \& \ \diamond Sy)))$ ' This sentence says that there is some variable value (say $\langle u, \text{lump} \rangle$) such that a) it satisfies 'the biggest thing in the universe, b) every variable value that satisfies BT is identical to our first variable value, (this can be true if $\langle u, \text{statue} \rangle$ also satisfies BT), and c) every variable value that satisfies BT also satisfies $\diamond S$. This last requirement is not met, however, because as we know, $\langle u, \text{statue} \rangle$ satisfies BT but not $\diamond S$. One consequence of this view is of course that now neither ' $\diamond S$ ' nor ' $\sim \diamond S$ ' is true of 'the biggest thing in the universe'. Both are ruled out by the requirement that *everything* satisfying 'BT' satisfies the modal predicate. As such, the sentence 'If there is a biggest thing in the universe, either it is possibly squashed or it is not possibly squashed' will come out false. However, we could use the contextual strategies discussed in section 7.3.6 to account for these cases. Perhaps in the majority of contexts, some dominant sortal is selected such that ' $\diamond S$ ' or ' $\sim \diamond S$ ' does apply when 'BT' applies. However, there may be a perfectly good sense in which ' $\exists x(BTx \ \& \ \forall y(By \rightarrow ((x = y) \ \& \ \diamond Sy)))$ ' and ' $\exists x(BTx \ \& \ \forall y(By \rightarrow ((x = y) \ \& \ \sim \diamond Sy)))$ ' are both false in the context of a philosophy classroom. Another option would be to suggest that when context does not supply a dominant sortal, or at least a ranking of sortals, our use of a definite description does not succeed in picking anything out.

One of the three strategies discussed in 7.3.6 will also have to be used to account for cases in which the definite description directly mentions a dominant sortal. If we go for our first option, the rules mentioned kick in. Take for example 'The most beautiful statue in the world is not possibly squashed.' This sentence is analysed as ' $\exists x(BSx \ \& \ \forall y(BSy \rightarrow ((x = y) \ \& \ \sim \diamond Sy)))$ ' On the first strategy, this sentence would count as true because for a variable value to satisfy 'BS' it must pair an individual with 'statue'. So, $\langle u, \text{statue} \rangle$ will be the only value that satisfies 'most beautiful statue'; $\langle u, \text{lump} \rangle$ won't count. Therefore, the strategy allows for the truth of ' $\forall y(BSy \rightarrow \sim \diamond Sy)$ '. On the other hand, we could account for such cases by allowing the conversational context to restrict either a) which individual / sortal pairs are considered when determining the truth of the sentence, or b) which truth conditions are had by a sentence.

7.3.8 A note on contingent identity and Leibniz's Law

Finally, before we move on from discussion of *de re* modality, we must acknowledge that by allowing for *de re* inconstancy, we are also allowing for identity sentences to be contingent. As yet, we have not said anything about truth conditions for modal sentences involving names. However, ultimately, our account will require that in most cases, names are associated with dominant sortals in a way that is 'rigid'. The details to do with rigidity

are to be spelled out in the section 7.5; however, we can say for now that a name is *always* associated with the same dominant sortal, wherever it picks out anything at all. Say at world w , ‘Lumpl’ picks out $\langle u, \text{lump} \rangle$, and ‘Goliath’ picks out $\langle u, \text{statue} \rangle$. At w ‘Lumpl = Goliath’ will be true. However, the counterpart relation induced by ‘lump’ allows ‘Lumpl’ to pick out $\langle v, \text{lump} \rangle$ at w_1 , where ‘statue’ is not a member of the predicate set associated with v . As such v cannot be paired with any sortal to count as a value of ‘Goliath’ at w_1 , so ‘Lumpl = Goliath’ must be false at w_1 . This means we are committed to the truth of ‘Lumpl = Goliath’ at w , as well as the truth of $\sim\Box(\text{Lumpl} = \text{Goliath})$. Does this commit us to a contradiction? Once again, the answer should be ‘no’ because our truth conditions do not allow that terms pairing the same individual with different sortals can be substituted in modal contexts while preserving truth. Allowing for contingent identity means breaking Leibniz’s Law, since there is at least one predicate that applies to ‘Lumpl’ that does not apply to ‘Goliath’. However, Leibniz’s Law is broken in a principled way. Firstly, flesh and blood objects do not instantiate any incompatible properties, as they do not instantiate any modal properties at all. Secondly, since co-referential terms cannot be substituted in *de re* modal contexts, we are not committed to contradictions.

7.4 A model for quantified modal truths without constants

To sum up, we can construct a simple model to help describe the truth conditions for modal sentences. Once again, we will leave out constants for individuals. This will be remedied in section 7.6 below. Note that this model assumes option 2 for accounting for restricting quantification is adopted, and that context does the work required to restrict our variable domain where necessary.

The language we are modelling consists of the following vocabulary:

- Connectives: \rightarrow, \sim
- Quantifier: \forall
- Variables: a, a_1, \dots
- For each $n > 0$, n -place predicates F, G, \dots
- Parentheses
- Modal operator: \Box

A well-formed formula is defined as follows:

- If Π is an n -place predicate and $a_1 \dots a_n$ are variables, $(\Pi a_1 \dots a_n)$ is a well-formed formula
- If (ϕ) is a well-formed formula and (ψ) is a well-formed formula and a is a variable then $(\sim\phi)$, $(\phi \rightarrow \psi)$, $(\forall a(\phi))$ and $(\Box(\phi))$ are well-formed formulas.²⁹⁸

Our model M consists of an ordered quintuple $\langle D, D_v, R, W, I \rangle$ where:

- D is a non-empty set (the set of individuals)
- D_v is a non-empty set (a set of pairs of members of D with predicates)
- R is a binary relation on D_v (the counterpart relation)
- W is a non-empty set (the set of worlds), such that each member of W is a subset of D_v
- I is a function (the interpretation function) that assigns each n -place predicate a set of $n+1$ -tuples of the form $\langle u_1 \dots u_n, w \rangle$, where $u_1 \dots u_n$ are members of D and w is a member of W .

A variable assignment g for M is a function that assigns each variable a member of D_v .

An individual-variable assignment h for M is a function that assigns each variable a member of D .

A valuation function for M relative to g and h ($V_{M,g,h}$) assigns to each well-formed formula ‘T’ or ‘F’ relative to a world as follows:

- For any world w and any variables a and b , $V_{M,g,h}(a = b, w) = \text{T}$ iff $h(a) = h(b)$, and for some Π , $\langle h(a), \Pi \rangle \in w$.
- For any world w , any n -place predicate Π , and any variables $a_1 \dots a_n$, $V_{M,g,h}(\Pi a_1 \dots a_n, w) = \text{T}$ iff $\langle h(a_1) \dots h(a_n), w \rangle \in I(\Pi)$.
- For any world w and any formula ϕ , $V_{M,g,h}(\sim\phi, w) = \text{T}$ iff $V_{M,g,h}(\phi, w) = \text{F}$.
- For any world w and any formulas ϕ and ψ , $V_{M,g,h}(\phi \rightarrow \psi, w) = \text{T}$ iff $V_{M,g,h}(\phi, w) = \text{F}$ or $V_{M,g,h}(\psi, w) = \text{T}$.
- For any world w , any variable a , and any formula ϕ , $V_{M,g,h}(\forall a(\phi), w) = \text{T}$ iff for every $\langle u, \Pi \rangle \in w$, $V_{M,g,h}(\phi, w) = \text{T}$ when $g(a) = \langle u, \Pi \rangle$.²⁹⁹

²⁹⁸ Note that in what follows, parentheses are sometimes omitted.

²⁹⁹ Here ‘when $g(a) = \langle u, \Pi \rangle$ ’ should be read as ‘when the variable assignment g is altered just so that a picks out $\langle u, \Pi \rangle$.’

From here, things become trickier, because we need separate truth conditions for when modal operators attach to open formulas as compared to when they attach to full sentences.

- For any world w , any variables $a_1...a_n$, and any n-place predicate Π , $V_{M,g,h}(\Box\Pi a_1...a_n, w) = T$ iff for all $\langle u_1, \Omega_1 \rangle$ such that $\langle g(a_1), \langle u_1, \Omega_1 \rangle \rangle \in R...$ and all $\langle u_n, \Omega_n \rangle$ such that $\langle g(a_n), \langle u_n, \Omega_n \rangle \rangle \in R$, if for some $v \langle \langle u_1, \Omega_1 \rangle, \dots, \langle u_n, \Omega_n \rangle \rangle \in I(\Pi)$, $\langle u_1...u_n, v \rangle \in I(\Pi)$.
- For any world w , any variable a and any formula ϕ , $V_{M,g,h}(\Box\forall a(\phi), w) = T$ iff $V_{M,g,h}(\forall a(\phi), v) = T$ for every v in W .
- For any world w , and any variables a and b , $V_{M,g,h}(\Box a = b, w) = T$ iff $g(a) = g(b)$, and $g(a) \in w$.
- For any world w and any formula ϕ , $V_{M,g,h}(\Box\Box\phi, w) = T$ iff $V_{M,g,h}(\Box\phi, w) = T$.

The possibility operator and the existential quantifier can be defined using negation, the necessity operator and the universal quantifier as follows:

- For any world w and any formula ϕ , $V_{M,g,h}(\Diamond\phi, w) = T$ iff $V_{M,g,h}(\sim\Box\sim\phi, w) = T$
- For any world w , any formula ϕ and any variable a , $V_{M,g,h}(\exists a(\phi), w) = T$ iff $V_{M,g,h}(\sim\forall a(\sim\phi), w) = T$.

This model ought to provide truth conditions for any well-formed formula that can be constructed using the means set out above.

Intuitively, D_v is intended to contain the \langle individual, dominant sortal \rangle pairs that form the values of variables according to the strategy outlined in section 7.3.4. The counterpart relation R will be determined by the rules governing the dominant sortals with which individuals are paired in D_v . Despite the fact that in the version of LMC explicated above worlds are construed as Ramsey sentences, they are here construed as sets of individual / sortal pairs in order to simplify the model. In order to make sense of the idea that an individual can have multiple counterparts in a single world, individuals exist at a single world only. What's more, variable assignments assign variables denotations *simpliciter* rather than relative to worlds. This means that each variable does not have a distinct denotation in every world. Instead, there is a counterpart relation R connecting individual / sortal pairs, and the truth conditions for *de re* modal sentences are given in terms of it. 'Necessarily Fx ' is true at a world, for example, if the individual / sortal pair picked out by x only has counterparts that are F .

Even though variables are given an absolute value by a variable assignment, truth should still be treated as relative to worlds. Intuitively, we do not want ‘ Fx ’ to be true at w if the value of x exists at v , not w . To capture this, I have required that sentences involving variables are true at a world only if the values of those variables exist at the world of evaluation. For example, ‘ $x = y$ ’ is true at a world only if x and y are the same individual, and that individual exists at w . And, ‘ Fxy ’ is true at a world only if x and y both exist at that world, and are related by F . More generally, n -place predicates are assigned n -tuples plus a world as their interpretations, such that the n -tuples are related by the property picked out by the predicate, and exist at that world. Ultimately, this was a matter of choice. If you think ‘ $x = y$ ’ should be true at the actual world even if x and y are (identical) merely possible individuals, the model could be altered such that ‘ $x = y$ ’ is true at every world. However, this would have the odd result that ‘ $x = y$ ’ can be contingent even though it is true at every world. This is because the truth condition for ‘ $\Box(x = y)$ ’ is given in terms of the dominant sortals with which the individuals picked out by ‘ x ’ and ‘ y ’ are paired.

The two different variable assignments g and h were required to supply truth conditions both for sentences sensitive to the dominant sortal paired with an individual, and for sentences that are not sensitive to the dominant sortal paired with an individual. If g assigns a variable $\langle u, \Pi \rangle$, h will assign the same variable u . In other words, h will be a function composed of g and a function that assigns members of D_v members of D . Call the latter function f . Then, $h = f \circ g$, such that if $g(a) = \langle u, \Pi \rangle$, $h(a) = f(g(a)) = u$.

7.5 Synthetic necessities, analytic contingencies and actual-world dependence

Up to now, I have explicitly left out proper names and kind terms in my account of worlds and modal truth at worlds. In order to put them in, a strategy must be developed for dealing with necessary *a posteriori* truths, or synthetic necessary truths. We left names and kind terms out of the Ramsey sentences that constitute our worlds because consistency relations between names and kind terms cannot be determined directly by the linguistic rules. This is apparent when we consider necessary synthetic truths. For example, given that ‘Water is H_2O ’ is a necessary truth, it ought to be case that ‘There is something that’s water and not H_2O ’ is a sentence that is internally inconsistent, and can be true at no worlds; but the linguistic rules do not determine that to be the case in an obvious way. After all, there’s no rule governing our use of ‘water’ that directly restricts its application to where ‘ H_2O ’ applies. If there *were* such a rule, we’d expect the sentence

to be knowable *a priori*, and of course it isn't. The same goes for 'Hesperus is Phosphorus'. This sentence is true necessarily since both 'Hesperus' and 'Phosphorus' name the same planet, but it isn't plausibly *a priori* or analytic. Up until now I have also left indexical expressions out of the account of worlds. These cause trouble in the other direction; they generate sentences that are analytic without being necessary. The sentence 'I am here now' is an example.

7.5.1 *The necessary synthetic: basic strategy*

In order to deal with these cases, we will need to borrow some tools from the framework of two-dimensional semantics. First of all though, we can look in a general way at why they arise from the perspective of LMC. To do so, we will need to introduce the notion of a 'rigid designator'. To be a rigid designator is to be a term that picks out one and the same thing in every world in which it designates anything at all. For us, of course, what counts as 'the same thing' in different worlds is determined by linguistic rules, and in particular, by the counterpart relations induced by the rules governing dominant sortals. Names, by definition, are used as 'identity tracking' terms and thereby qualify as rigid designators; we judge that different uses of the same name count as picking out the same individual. (And as we'll see shortly, the same applies to kind terms.) Translated into the system introduced above in section 7.3 we can say that names, like variables, are associated with individual / sortal pairs. Unlike variables in the system above however, the same name can refer in more than one world. The model outlined in 7.4 treats individuals as confined to worlds, and assigns each variable a single individual. A name, on the other hand, can be assigned 'extensions' (individual / sortal pairs) in multiple worlds; which individual it picks out at a world will be determined by the counterpart relation induced by the sortal with which it is associated.

Since names are rigid designators, when two different names are associated with the same dominant sortal, and pick out the same individual, they must *rigidly* pick out the same individual. That is to say, unlike descriptions, at any given world a name will only pick out counterparts of the individual it picks out at the actual world, determined by the sortal with which it is associated. For example, while 'the happiest being' might pick out a human at the actual world, and a dog at world w , the name 'Fin' can only pick out counterparts of the person it picks out at the actual world. Note that as discussed in section 7.3.8, when co-referring names are associated with different sortals, those sortals will induce different counterpart relations such that the two names might co-refer only contingently. However, co-referring names associated with the same sortal will co-refer necessarily; their reference at any given world will be the same if they refer to anything at

all.³⁰⁰ And identity statements connecting names that co-refer at every world will be true necessarily by virtue of being true at every world. This gives us a beginning of an explanation of the ‘Hesperus’ and ‘Phosphorus’ case. Given that ‘Hesperus’ and ‘Phosphorus’ are both names, they both designate rigidly. What’s more, they pick out the same individual, under the same dominant sortal. That means that an identity statement between them (‘Hesperus is Phosphorus’) must be true necessarily.

Explaining how linguistic modal conventionalists should deal with rigid designation, however, is not enough to show how it is that *synthetic* necessary sentences arise. Given that the linguistic rules determine that ‘Hesperus’ and ‘Phosphorus’ co-refer in every world, why isn’t ‘Hesperus is Phosphorus’ analytic? Synthetic necessary identity statements like this one arise because of how we fix reference. When we fix the reference of a name, we often do so in a state of ignorance about many or most of the features of its referent. Recall that at the end of chapter 6, I argued that reference gets fixed to flesh and blood objects in the world because we interact with them causally, and associate properties instantiated by objects with names. Here’s an example of how that might happen. An observer of the stars might decide to associate the name ‘Hesperus’ with the property of being the celestial body first visible in the evening. And she might associate the name ‘Phosphorus’ with the property of being the celestial body visible last in the morning. Each of these names will then pick out an object in the world. The object picked out by each name will satisfy a set of predicates that constitutes the possible individual that represents the object. Given that reference is fixed in this way, the possible individual that is associated with the name ‘Hesperus’ must have as part of its set the predicate ‘visible first in the evening’. Similarly, the individual that is associated with ‘Phosphorus’ must include ‘visible last in the morning’ in its set. However, reference can be fixed in *ignorance* of whether both these descriptions apply to the same individual. As it happens, a single object has both the properties via which reference was fixed, and therefore the names are associated with a single individual. As a result, ‘Hesperus is Phosphorus’ is true. And, insofar as the dominant sortal (‘celestial body’, say) with which the names are associated is the same, the sentence will also be necessary. However, it is neither analytic nor *a priori*. What’s more a similar story can be told for all sorts of reference-fixing mechanisms. Perhaps the reference of each name is fixed simply by pointing to a star and saying, ‘Let that celestial body be called “Hesperus”’ or ‘Let that celestial body be called “Phosphorus”.’ Again, insofar as the dominant sortal associated with both names is the same, and the identity statement is true, it will be true necessarily.

³⁰⁰ Note that this ‘sortal-relative’ rigid designation is what Lewis calls ‘quasi-rigid designation’. (Lewis, *On the Plurality of Worlds*, p.256.)

To sum up, we can isolate the factors that combine to make ‘Hesperus is Phosphorus’ necessary, despite being synthetic and *a posteriori*. Firstly, ‘Hesperus’ and ‘Phosphorus’ are names, and therefore are identity-tracking terms. As a result, so long as they are associated with the same dominant sortal, actual co-reference means necessary co-reference, according to the linguistic rules for names. Secondly, reference is fixed via a mechanism that a) is not such that the rules explicitly require the two names to be applied together,³⁰¹ and b) involves ignorance of at least some of the properties had by their intended referents. Finally, the object to which the reference of one name is fixed is the same as the object to which the reference of the other name is fixed. Together these three factors determine that ‘Hesperus is Phosphorus’ is true necessarily, but it is neither analytic nor *a priori*. Note that the final factor leads to a kind of actual world-dependence for the necessity of ‘Hesperus is Phosphorus’. There seems to be some sense in which it is possible that the names could have turned out to refer to *distinct* celestial bodies, in which case ‘Hesperus is Phosphorus’ would have been not just false, but impossible. Assume that reference was fixed by description; then, had the non-modal sentence ‘The celestial body visible first in the evening is the celestial body visible last in the morning’ actually been false, ‘Hesperus is Phosphorus’ would have been necessarily false. We will return to this actual-world dependence in section 7.5.3.

A second kind of synthetic necessity arises if we allow, contra the assumptions made in section 7.3, that not all members of a dominant sortal are counterparts of all other members. As we left the discussion in the previous section, every member of a dominant sortal was treated as a counterpart of every other member. Every person, for example, was treated as a counterpart of every other person. Perhaps, however, some sortals determine more restricted counterpart relations. For example, a person’s particular genetic makeup may be essential to her. Say, for example, that Fin’s genetic makeup can be described using the predicate ‘G’. Then, ‘Fin has genetic makeup G’ is necessary but is not analytic. In order to explain this case, we must first explain how the linguistic rules can restrict counterpart relations in the relevant way. Remember that the rules governing sortals are what determine sortal-relative counterpart relations between individuals. What’s possible for something that counts as an F must always be determined by the rules governing ‘F’, and in particular the coapplication conditions for ‘F’. So, the rule that’s needed to restrict the ‘person’ counterpart relation must require that ‘same person’ is applied to two possible individuals only if they a) instantiate the sortal ‘person’, and b) share *one* of a specified set of predicates. Say that ‘G’, ‘H’ and ‘I’ are all the predicates

³⁰¹ An example of such a process would be a stipulation that ‘Hesperus’ is to apply to the same celestial body as ‘Phosphorus’.

describing genetic makeup. The rules governing 'person' can require that 'person' applies only where 'G' or 'H' or 'I' is applied. That would make it analytic that every person has some genetic makeup or other. Any predicate set of which 'person' is a member must then also have 'G' or 'H' or 'I' as a member. The rules can also require, however, that 'same person' applies to two individuals only if 'G' applies to both, 'H' applies to both or 'I' applies to both. This procedure restricts the 'person' counterpart relation such that all of a person's counterparts share the same genetic makeup.

Now, we have a restricted counterpart relation among people such that a person's counterparts all share the same genetic makeup. How does this help us to explain the synthetic necessity of 'Fin is G'? First of all, we know that 'Fin' is a rigid designator associated with the 'person' dominant sortal; any use of 'Fin' qualifies as applying to one and the same individual. For us, that means that the reference of 'Fin' at a given world will be a person-counterpart of the individual 'Fin' picks out at the actual world. And, the rules for 'person' specify that 'same person' only applies to two individuals where they share their genetic makeup predicate. That means that given that 'G' is one of the predicates that forms part of Fin's set, all Fin's counterparts will include 'G' in their sets. This is enough to determine that 'Fin is G' is true necessarily. However, the reference of 'Fin' can be fixed in ignorance of many or most of the predicates in his set. Perhaps reference is fixed by a definite description, such as 'Cecily's second child', or perhaps it is fixed by ostension, or by a process such as a baptism ceremony. Given that reference can be fixed without knowing Fin's genetic makeup, we'd expect 'Fin is G' to be *a posteriori*. Also, even though the rules for 'person' guarantee that all a person's counterparts share a genetic makeup predicate, they do not connect the use of 'Fin' to 'G' directly, so 'Fin is G' is not analytic. The rules require that 'Fin' applies where 'G' applies only indirectly, by first fixing the reference of 'Fin' to a person, and then restricting the counterpart relation for persons by genetic makeup. Again, this case involves a kind of actual-world dependence. We can imagine a sense in which it is possible that 'Fin is G' could have turned out to be not just false, but impossible. If the actual world had been such that 'Cecily's second child is H' had been true instead of 'Cecily's second child is G', 'Fin is H' would have been true necessarily, and 'Fin is G' would have been false necessarily.

Now, we can turn to the case of 'Water is H₂O'. This case is similar on the surface to the 'Hesperus is Phosphorus' case in that it involves a necessary identity statement connecting two rigid designators. However, it is also different in important respects. In this case, the rigid designators pick out a natural kind, rather than an individual object. As with ordinary objects, the matter of what individuals constitute members of the same kind

at different worlds must be determined by conventional linguistic rules. This can be achieved by treating entities like bodies of water as possible individuals defined as sets of predicates. (Consider: the physical body of water that is the Indian Ocean is a bit of space-time instantiating non-modal properties; the predicates true of it make up a set that constitutes a possible individual.) Then, the rules ought to determine which individuals at worlds qualify as falling under the same kind term. It is tempting then, to explain 'Water is H₂O' in the same way as 'Hesperus is Phosphorus' by arguing that the case involves two rigidly designating names applying to the same kind in ignorance of the fact that they co-refer. However, there are necessary sentences involving 'water' that are not identity statements. An example is 'All water is partly composed of hydrogen atoms.' This sentence is true necessarily but synthetic, and cannot be explained in terms of necessary co-reference, like in the 'Hesperus is Phosphorus' case.

In the new sentence, 'water' operates like a *predicate* picking out entities that qualify as members of the relevant kind, rather than as a name of a kind. But, it remains *a posteriori* which entities qualify as satisfying this predicate. Similar cases will arise with other predicates. If what counts as a lion is determined by genetic features, then 'All lions have such and such genetic features' will also be necessary synthetic. So, how does LMC explain such sentences? We need a rule governing 'water' that restricts which possible individuals count as water in such a way that all individuals qualifying as water share a predicate, but empirical investigation is required to work out which predicate. Our treatment of Fin's necessary genetic features can help us provide an account to do that job. Say that 'water' is introduced, as Sidelle suggests, as a 'chemical kind' term and that the rules say that 'member of the same chemical kind' applies only to individuals that share certain chemical features. As in the case of genetic features, the chemical features that might be had by some individual can be given by a predicate set. Say that this set is {C, D, E}. Then, the linguistic rules will require that 'member of the same chemical kind' applies to two individuals so long as they share 'C' or 'D' or 'E' as members. Given that 'water' names a chemical kind, 'water' used as a predicate will also apply to two individuals only if they share one of those predicates. Just as which individuals counted as Fin's counterparts depended on which genetic features Fin had, which substances count as water depend on which chemical features the thing we actually refer to as 'water' has. The rules for 'same chemical kind' determine which individuals qualify as the members of the same kind. However, when we introduce a term as a chemical kind term, we are often in ignorance of which chemical features the kind we are referring to has. In the case at hand, the term 'water' is introduced as a chemical kind term, and its reference is fixed by some process such as description, ostension, etc. And the rules for

chemical kind terms dictate that substances qualify as belonging to the same chemical kind so long as they share certain chemical features. Given that 'being partly composed of hydrogen atoms' is one of the predicates that is had by all members of the chemical kind we actually refer to as 'water', 'All water is partly composed of hydrogen atoms' will be true necessarily.

Now, we can see how the sentence 'All water is partially composed of hydrogen atoms' is necessary although synthetic. Firstly, 'water' is a rigidly designating term picking out a chemical kind. As a result, it must pick out the same kind in any world in which it designates anything at all. Secondly, the rules require that 'member of the same chemical kind' applies to two individuals only if they share the same member of the 'chemical features' predicate set. One member the predicates shared by all members of the kind we refer to as 'water' is 'being partly composed of hydrogen atoms'. As such, when 'water' is used as a predicate ranging over individual samples of stuff, it only picks out entities that are partly composed of hydrogen atoms. However, when the reference of 'water' is fixed, it is fixed in ignorance of many of the properties of the flesh and blood substance the term is used to pick out. Perhaps the reference of 'water' is fixed, for example, when someone says, "'Water' is to pick out the chemical kind to which the substance in this glass belongs.' Such a reference-fixing process can take place without knowing which chemical feature predicate is instantiated by the substance in the glass. Nonetheless, the rules governing 'member of the same chemical kind' determine that individuals only qualify as belonging to the same kind if they share the same member of the chemical features predicate set. So long as the substance in the glass is in fact composed of H₂O molecules, individuals qualifying as water must share 'being partly composed of hydrogen atoms' as a member of their sets. As a result, 'All water is partly composed of hydrogen atoms' is necessary, but is *a posteriori* and synthetic. Once again, there remains a sense in which the sentence might have been false; if the substance in the glass had instantiated a different predicate from the chemical features set, 'All water is partly composed of hydrogen atoms' would have been necessarily *false*. Once again, the case involves dependence on truths at the actual world.

All three cases of synthetic necessity discussed share some features in common. Here are some of those features:

(1) A term (Hesperus, Fin, water) is used as a rigid designator. That means that the rules require that it picks out the 'same thing' in every world in which it designates anything at all.

(2) The term is associated by the rules with some sortal (celestial body, person, chemical kind) such that the rules governing that sortal determine which individuals that satisfy it count as the ‘same thing’ in each world, or which individuals belong to the ‘same kind’ in each world.

(3) The rules governing the relevant sortal F require that ‘same F’ is only applied to individuals sharing the same member of some specified set of predicates.

(Note that (1), (2) and (3) alone guarantee that the rigidly designating term will only pick out individuals sharing the same member of the relevant specified set.)

(4) The reference of the term is fixed in ignorance of which member of the specified set is instantiated by its referent.

This gets us our necessity *a posteriori*. The rules require that ‘same F’ applies only where some unknown predicate ‘G’ applies, and they also require that our referring term (Hesperus, Fin, water) applies only where ‘same F’ applies. As such, our referring term only applies where some unknown predicate applies.

(5) The final feature of the cases is that the place to check which member of the specified predicate set an individual instantiates is *the actual world*.

At this point, it’s worth revisiting a problem that was raised for Sidelle’s account of the necessary *a posteriori* back in section 2.1. Recall that Sidelle’s account took such sentences to be generated by an analytic truth in combination with a contingent, empirical truth. His idea was that the necessity of such sentences could be explained by the analytic truth, while their *aposteriority* could be explained by the empirical truth. For example, the analytic ‘If water is a chemical kind, then if its chemical composition is H₂O, it is H₂O in every possible circumstance in which it exists’ was to combine with ‘Water is a chemical kind’ and ‘Water’s chemical composition is H₂O’ to make ‘Water’s chemical composition is H₂O’ necessary. The problem was that ‘Water’s chemical composition is H₂O’ was meant to be contingent and empirical on Sidelle’s account. However, that is the same sentence that is made *necessary* by the analyticity of the conditional. I suggested that this problem might be helped by changing the ‘empirical discovery’ sentence to read, ‘Water’s chemical composition is *actually* H₂O’. Then at least, the sentence whose necessity is being explained is not the same sentence that is taken to be a contingent empirical discovery. This also helped to capture Sidelle’s central thought that the necessity of ‘Water is H₂O’ depends partly on linguistic conventions and partly on what we discover about the world we inhabit.

The problem was that ‘Water’s chemical composition is actually H₂O’ was also plausibly necessary rather than contingent, insofar as all truths of the form ‘Actually, S’ are necessary. The strategy suggested on behalf of LMC in this section does not fall prey to this problem because it does not require that a contingent truth plays any role in helping to determine necessary synthetic truths. In the water case, the necessity of ‘Water is H₂O’ is determined by a) the reference-fixing process for ‘water’ at the actual world, and b) the conventional ‘same substance’ relation that connects water to other possible substances at other worlds. The *aposteriority* of the sentence is not explained by the *contingency* of discoveries about water in the actual world. Instead, it is explained by ignorance about the features of the thing to which reference has been fixed.

7.5.2 *The contingent analytic: basic strategy*

Finally, we must address how LMC should diagnose cases of analytic contingencies. In these cases, the linguistic rules associated with terms guarantee the truth of a sentence, rendering it analytic, even though the sentence is contingent. A commonly cited example of such a sentence is ‘I am here now.’ The reason ‘I am here now’ is treated as analytic is because the rules for the indexical expressions ‘I’, ‘here’ and ‘now’ guarantee that whatever context the sentence is uttered in, it will express a truth. Indexical expressions have the feature that what they pick out depends on the context of utterance. If Madeleine is the speaker, ‘I’ picks out Madeleine. But if Angus is the speaker ‘I’ picks out Angus. Similarly, if the sentence is uttered on Monday, ‘now’ picks out Monday, and if the sentence is uttered on Tuesday ‘now’ picks out Tuesday. Following Kaplan, the aspect of meaning of an expression that determines what it picks out relative to a context of utterance has been called the ‘character’ of the expression.³⁰² In the case of ‘I am here now,’ the character of ‘I’, ‘here’ and ‘now’ guarantee that the sentence will express a truth relative to any context, because the speaker of the utterance is always located at the place of the utterance at the time of utterance. There is no way to shift the context of utterance to make ‘I am here now’ express a falsehood. However, it is plausibly *contingent* that I am here now. After all, I could have chosen to stay at home today rather than go out, or I could have chosen to leave later.

In order to deal with this case, indexical expressions must be included either in the Ramsey sentences that constitute worlds according to LMC, or in the maximal possibilities that those worlds generate in accordance with the rules. The next section will deal more thoroughly with how to add names, kind terms and indexicals into maximal

³⁰² David Kaplan, ‘Demonstratives,’ in Joseph Almog, John Perry & Howard Wettstein eds., *Themes from Kaplan* (Oxford: Oxford University Press, 1989).

possibilities. For now, note that a common way to add indexicals to worlds is to give them a ‘centre’ by specifying a single individual at a single time and place. Then the individual at the centre is picked out by ‘I’, the place at the centre is picked out by ‘here’ and the time at the centre is picked out by ‘now’. In section 7.5.4 I’ll describe how centres should be added to worlds according to LMC.

As with synthetic necessities, analytic contingencies can be explained by LMC using the notion of actual-world dependence. First of all, note that ‘I’ has two interesting features. On the one hand, it is pronoun and therefore works similarly to a name. That means that it designates rigidly; relative to a context of utterance, ‘I’ picks out the same individual in any context of evaluation. That is why when I say, ‘I could have been elsewhere today’ I express a truth. The truth of that sentence is determined by whether I have counterparts that are elsewhere today; and, given the rules for ‘person’ (my dominant sortal), it’s plausible that I do. This explains the contingency of ‘I am here now’. The second interesting feature of ‘I’ comes from its Kaplanian character, as mentioned above. This character helps to explain why ‘I am here now’ is analytic; the reference-fixing mechanisms for those terms guarantee the truth of ‘I am here now’ in any context of utterance, given that the context of utterance is also the context of evaluation. These two features can be accounted for by LMC by, once again, using actual-world dependence. Start with a maximal possibility at which I am at the centre. Given that ‘I’ designates rigidly, ‘I’ picks out *my* counterparts at other worlds. As a result, ‘Possibly, I am elsewhere’ is true so long as one of my counterparts is elsewhere. However, the analyticity of ‘I am here now’ can be explained by the fact that relative to the actual centred maximal possibility, ‘I am here now’ is true. And, if we treat different centred maximal possibilities as actual, ‘I am here now’ will remain true. After all, the individual at the centre is in the time and place at the centre of each possibility.³⁰³

Gillian Russell has argued that Sidelle’s modal conventionalism struggles to account for indexicals.³⁰⁴ Interestingly, the trouble for Sidelle doesn’t come from the contingent analyticity of ‘I am here now’; instead it comes from cases in which ‘I am here now’ is used to express a *necessary* truth. More specifically, the problem is that the sentence can sometimes be used to express something contingent, and other times used to express something necessary. Russell’s example is a case in which ‘I am here now’ is expressed by a necessarily existing, omnipresent god. In the mouth of such a god, ‘I am here now’ must be necessary, because the god is in all places at all times. Nonetheless, it remains the

³⁰³ The notion of treating other maximal possibilities as actual is explicated further in the next section.

³⁰⁴ Gillian Russell, ‘A New Problem for the Linguistic Doctrine of Necessary Truth,’ in C. Wright and N. Pedersen eds., *New Waves in Truth*, (Basingstoke: Palgrave Macmillan, 2010) pp.267-281.

case that all *my* utterances of ‘I am here now’ express contingencies, since I am neither fixed in one place and time, nor omnipresent.

Sidelle’s view, Russell argues, struggles to account for this case because the conventions governing the sentence can, on his view, either be such that they make it contingent or that they make it necessary, both not both. Her diagnosis of the problem is that necessity should be thought of as attaching primarily to propositions, rather than to sentences. The fact that ‘I am here now’ expresses different propositions in different contexts would then explain why the sentence sometimes says something contingent and other times says something necessary. That fact would also explain why the rules governing the sentence alone aren’t sufficient to make it necessary or contingent. Sidelle allows for two different ways that analyticity can act as the source of necessity. The first is by making an analytic sentence itself necessary, as in ‘All bachelors are unmarried.’ The second is by combining with some empirical discovery to make a sentence necessary, as in synthetic necessary sentences like ‘Water is H₂O.’ Clearly, the first strategy won’t work for ‘I am here now,’ because we want a result where it is sometimes necessary and sometimes contingent. What of the second? Russell argues that there isn’t any straightforward way to combine an analytic truth with an empirical truth to get the result that ‘I am here now’ is in some contexts necessary and in others contingent. She suggests that one option Sidelle might take is to make the analytic sentence that is (sometimes) the source of necessity for ‘I am here now’ conditional on who ‘I’ picks out. For example, the analytic sentence could be something like, ‘If I am god, then if I am here now I am necessarily here now.’ However, then the ‘empirical’ truths that combine with the sentence to yield the necessity have to be a) I am here now, and b) I am god. Neither of these look like good candidates for empirical discoveries.

Of course, LMC cannot accept Russell’s diagnosis of the problem; it cannot take propositions to be the primary bearers of necessity or contingency. Luckily, the strategy suggested above can help LMC diagnose the case. According to the suggested account, ‘I am here now’ is contingent because the speaker at the actual world has non-actual counterparts at other worlds; it is analytic, however, because it is true at every centred world when it itself is considered as actual. On this approach, the contingency of ‘I am here now’ is due to the fact that some of the speaker’s counterparts are not in the place of utterance at the time of utterance. Then, if the actual world is centred on an omnipresent god, ‘I am here now’ will, as Russell argues, qualify as necessary. Which modal status attaches to ‘I am here now’ relative to which world considered as actual remains conventional because the rules for the ‘I’, ‘here’ and ‘now’ are conventional, as are the counterpart relations that individuals stand in.

Finally, note that the same strategy used for dealing with ‘I am here now’ can be used to apply to truths involving the ‘actually’ operator. Normally, we treat sentences of the form, ‘If actually S, then S’ as contingent, since ‘Actually, S’ is true at every world considered as counterfactual so long as ‘S’ is true at the actual world, while ‘S’ may be false at other worlds. The sentence seems analytic, however, since the rules for ‘actually’ plausibly entail that if ‘S’ is actually true, ‘S’ is true. As with the indexical case, the contingency of ‘If actually S, then S’ can be explained by the fact that ‘Actually S’ can be true even though the rules do not guarantee the truth of ‘S’. Its analyticity, however, can be explained by the fact that the sentence is true relative to every world considered as actual.

7.5.3 Adding an extra dimension for actual-world dependence

One of the features had in common by the cases of necessary synthetic truth discussed above was that how a rigidly designating term applied in different worlds was determined by truths at the *actual world*. This allowed for a sense in which if the actual truths had been different, the modal truths would have been different. Similarly, cases of contingent analytic truth relied on treating a centred world as actual. Accounting for this actual-world dependence requires us to augment our story about how truth at worlds works. To do so, we can borrow some tools from two-dimensional semantics. The framework of two-dimensional semantics has been used by philosophers to represent how varying one aspect of the meaning of a term can have implications for other aspects. For example, as we’ve just seen, varying the context of utterance of indexicals changes their content. (When you are the speaker, ‘I’ picks out you, and when I am the speaker, ‘I’ picks out me.) Importantly for us, two-dimensional semantics has been used by philosophers such as Frank Jackson and David Chalmers to explain the necessary *a posteriori*.³⁰⁵

Given these applications, two-dimensional semantics is well-suited for our purposes of explaining necessary synthetic truths and contingent analytic truths. The guiding thought of the Jackson / Chalmers framework is that even though there’s an aspect of the meaning of some terms that’s settled by the external world, there must be some aspect of meaning that is settled by our internal states if we are to explain our competence in judging the application of terms in various circumstances. The fact that we can use thought experiments like Putnam’s twin earth scenario to make judgments about the application of ‘water’, for example, suggests that even the aspects of meaning that are determined by

³⁰⁵ See Frank Jackson, *From Metaphysics to Ethics: A Defence of Conceptual Analysis* (Oxford: Oxford University Press, 1998) and Jackson, *Reference and Description Revisited*. See also chapter 2 of David J. Chalmers, *The Conscious Mind* (Oxford: Oxford University Press, 1996), David J. Chalmers, ‘On Sense and Intension,’ *Philosophical Perspectives* Vol. 16 (2002): pp.135-182, and David J. Chalmers, ‘Epistemic Two-Dimensional Semantics,’ *Philosophical Studies* Vol. 118 (2004): pp.153-226.

the external world are ‘anchored’ in an aspect of meaning that is *a priori* and / or settled by us in some way. It is open to LMC to argue that this *a priori* or internal aspect of the meaning of terms is a conventional aspect, determined by linguistic rules.

The basic strategy used by two-dimensionalists is to argue that the application of our terms at worlds depends in part on how those terms apply in the actual world. To see how we can make use of the strategy, let’s revisit how worlds are defined. For us, possible worlds are Ramsey sentences expressed in a fragment of English. In section 7.1, I argued that linguistic rules governing terms determine which Ramsey sentences are internally consistent. And, I argued, the linguistic rules governing terms can also be used to determine a maximal set of sentences in English that are a) guaranteed to be true if the Ramsey sentence is true, given the rules, and b) are consistent with each other, since they follow from an internally consistent sentence by the rules. I suggested that the set of sentences following from a possible world should be called a ‘maximal possibility’. One of the Ramsey sentences that constitutes a possible world will be *true*. This is the actual world. As such, the set of English sentences that follow from it will be the actual maximal possibility. As yet, we don’t know how the rules determine all of the English sentences in a set from a given Ramsey sentence; the Ramsey sentences included logical vocabulary, variables and those qualitative predicates that cannot be used to generate synthetic necessities. (For example, ‘blue’ is included, but not ‘contains water’.) At this point, we still haven’t said how to get the sentences including names, kind terms, indexicals and the missing predicates from the Ramsey sentence that constitutes a world. In what follows, I’ll outline a strategy for using two-dimensional semantics to get maximal possibilities from Ramsey sentences.

To help demonstrate how the strategy works, we can work through an example. Let’s use the example of Fin and his genetic properties. First of all, we can start from the Ramsey sentence that is true: the actual possible world. This sentence describes all the individuals in the world, and their qualitative properties; for example, it describes all the people there are, and each person’s genetic makeup. As flesh and blood people moving about in the physical universe, we come to associate names with people via various processes of reference-fixing. Assume that via one of these processes, the name ‘Fin’ comes to refer to a given person. This person instantiates a range of qualitative properties. Corresponding to the properties, there is a set a set of predicates that constitutes the possible individual representing Fin. The rules governing a name like ‘Fin’ can express conditionally the various reference-fixing processes that might connect ‘Fin’ to a <possible individual / sortal> pair. So for example, the rules might say, ‘If “Such and such physical process occurs” is true, “‘Fin’ refers to the individual {F, G, H...} and is associated with ‘person’”

is true.’ This allows us to move from the Ramsey sentence that is the actual world to the truth of “‘Fin’ is associated with ‘person’ and picks out individual {F, G, H...}.’

With reference fixed, we have truths about Fin at at least one maximal possibility: the actual maximal possibility. However, we need to say something about the truths involving the name ‘Fin’ at other maximal possibilities. How do we get from other Ramsey-sentences-as-worlds to truths about Fin? In order to work out how, we need to return to the considerations discussed in 7.5.1. Say that the rules for ‘person’ tell us that ‘same person’ applies to any two possible individuals only if they share the same genetic makeup predicate. One of the predicates in Fin’s set will be his genetic makeup predicate. Say, for example, that predicate is ‘G’. Then, the rules determine that ‘Fin’ must pick out an individual at another possible world only if that individual includes G as a member. More generally, the rules for ‘person’ determine the reference of ‘Fin’ in other possible worlds by determining a counterpart relation among persons. Given that ‘Fin’ only applies to individuals that are ‘G’, ‘Fin is G’ will be true necessarily, even though it is synthetic and *a posteriori*.

At this point, we can turn to why the necessity of ‘Fin is G’ involves actual-world dependence. First of all, note that the reference-fixing process at the actual world is what determined the reference of ‘Fin’ at *all* worlds. At a given world w , the Ramsey sentence and the rules alone are not enough to determine which individual ‘Fin’ picks out. Instead, which individual ‘Fin’ picks out partly depends on the Ramsey sentence that is the actual world. At the actual world, it is true that *if* process p occurs, ‘Fin’ refers to an individual with genetic makeup G. And, the antecedent of that sentence is true. Let’s go to world w . No matter what reference-fixing processes are in place at w , ‘Fin is G’ remains true, given that at the actual world, ‘Fin’ picks out an individual who is G, and the rules governing person terms determine that all his counterparts must be G. However, there does remain a sense in which the rules alone do *not* guarantee that ‘Fin is G’ is necessary. We can capture that sense by considering how things would have been if w had been the actual world. Say the reference-fixing process at w fixes the reference of ‘Fin’ to an individual that includes ‘G₁’ as the genetic makeup predicate in his set instead of ‘G’. Then, when w is considered as actual, ‘Fin is G₁’ is necessary, and ‘Fin is G’ is impossible.

Similar considerations apply to the case of ‘water’; starting with the actual world, the reference-fixing processes in place can generate a maximal possibility in which ‘All water is composed of H₂O molecules’ is true. Then, the application conditions for ‘water’ determine that the term will pick out substances composed of H₂O molecules at every maximal possibility. The actual-world dependence in both cases can be represented if

sentence truth is relativised to a pair of worlds, rather than to an individual world. The first world in the pair relative to which truth is assessed is a world considered as actual, and the second is a world considered as counterfactual. Say that at w the reference of ‘Fin’ is fixed to an individual including the genetic makeup predicate ‘G’. Then, ‘Fin is G’ will be true at the following world pairs: $\langle w, w \rangle$, $\langle w, w_1 \rangle$, $\langle w, w_2 \rangle$, $\langle w, w_3 \rangle$... $\langle w, w_n \rangle$. However, changing the world considered as actual changes the truth of ‘Fin is G’ at worlds considered as counterfactual. Assume that the reference-fixing process at w_1 connects ‘Fin’ to an individual whose genetic makeup predicate is G_1 . Then, ‘Fin is G_1 ’ will be true relative to the following world pairs: $\langle w_1, w \rangle$, $\langle w_1, w_1 \rangle$, $\langle w_1, w_2 \rangle$, $\langle w_1, w_3 \rangle$... $\langle w_1, w_n \rangle$. Recall that maximal possibilities are intended to be determined by Ramsey sentence worlds in accordance with the rules. A first pass at how to achieve this is to treat maximal possibilities as determined by pairs of worlds, rather than individual ones. (This first pass will be revised slightly in the next section.)

The two-dimensionalist strategy of assessing truth relative to world pairs can also help with accounting for analytic contingent truths. Starting with a given Ramsey sentence world, we can add a centre wherever we like.³⁰⁶ Say that we make Madeleine on Tuesday the centre of a maximal possibility generated by some world. Given that ‘I’ designates rigidly, ‘I’ will pick out Madeleine at every maximal possibility considered counterfactually. At many of those, ‘I am here now’ will be false. However, relative to any maximal possibility which is itself considered as actual, ‘I am here now’ will be true. So, for example, ‘I am here now’ will be true at the following world pairs: $\langle @, @ \rangle$, $\langle w_1, w_1 \rangle$, $\langle w_2, w_2 \rangle$, $\langle w_3, w_3 \rangle$... $\langle w_n, w_n \rangle$, but can be false at the following world pairs: $\langle @, w_1 \rangle$, $\langle @, w_2 \rangle$, $\langle @, w_3 \rangle$... $\langle @, w_n \rangle$.

7.5.4 *From possible worlds to maximal possibilities*

On the two-dimensional picture, a Ramsey sentence possible world on its own can no longer be taken to straightforwardly determine a single maximal possibility. Recall that in order for a set of sentences to count as maximal, it must include every sentence expressible in English or its negation. As we’ve seen, however, which sentences involving names, kind terms and indexicals are true at a given maximal possibility depends on which world is actual and where its centre is added. As noted above, a first pass for dealing with these terms is to treat maximal possibilities as generated from world pairs, rather than from individual worlds. However, accounting for indexicals means adding a centre to maximal possibilities, and the rules plus a Ramsey sentence world

³⁰⁶ Note that this will mean that there is more than one maximal possibility associated with any particular Ramsey sentence world. This is discussed in section 7.5.4.

treated as actual do not suffice for that centre to go in any specific place; after all 'I' can be used by anyone. A natural solution would be to treat *worlds* as centred by adding indexicals to our Ramsey sentence vocabulary. As we've seen, however, the truth of sentences involving indexicals at maximal possibilities involves actual-world dependence. We'd be in trouble if a Ramsey sentence world w had 'I' pick out an individual in Australia if relative to some other word considered as actual, 'I am in Australia' was *false* at w . Because of their actual-world dependence, indexicals must be added to maximal possibilities, rather than to worlds. However, the fact that we have to leave indexicals themselves out of our worlds doesn't mean we have to leave *centres* out. LMC could maintain that indexicals get added to maximal possibilities instead of worlds, but include a centre marker using other terms that do not designate rigidly. Then, relative to any given world pair, 'I' would pick out the individual at the centre of the world considered as actual from the pair. Adding a centre marker to a Ramsey sentence world on this approach means using the resources from the vocabulary in the Ramsey sentence to describe a person, place and time such that the rules determine that *if* the Ramsey sentence is true, 'I' picks out that person, 'here' picks out that place and 'now' picks out that time. A natural way to do that is to provide a description according to which some individual at some time is the speaker. Then, any maximal possibility generated from that Ramsey sentence considered as actual will be such that 'I' refers to that individual and 'now' refers to that time.

However, there's also another reason why a single world pair can be thought to generate many different maximal possibilities. Back in section 7.3, I argued that some sortals might induce very liberal counterpart relations such that all members of a dominant sortal count as counterparts of each other. Let's assume a 'liberal' counterpart relation among people, for example, according to which every person is a counterpart of every other person. This makes sense of the intuition that you could have been just like your friend in all qualitative respects, and your friend could have been just like you. Holding fixed some world as actual, assume that 'Cormac' comes to refer rigidly to a person at the actual world. As such, 'Necessarily, Cormac is a person' is true at the actual world. And, 'Necessarily, Cormac is F' is true at the actual world for every F that the rules require to be applied with 'person'.

This suffices for 'Cormac is a person' to be true at all maximal possibilities relative to the actual world. How though do we fill in other truths about Cormac at each individual world considered as counterfactual? First of all, remember that individuals are sets of predicates using the same vocabulary as the vocabulary in the Ramsey sentences. As such, the same individuals must exist at any maximal possibility associated with a world,

no matter which world is actual. What's dependent on the world considered as actual is which name is associated with which individual. On our liberal counterpart relation, every person at every world qualifies as a person-counterpart of the individual 'Cormac' picks out. However, we can't say that a possible world with two or more people corresponds to a maximal possibility in which 'Cormac' picks out two or more people, because we will end up being committed to saying that Cormac is possibly in two places at once, that Cormac is possibly both tall and short, and so on. However, the option of denying that names refer at all at worlds where there are equally good candidates does not seem viable either. After all, *any* world in which there is more than one person counts as a world with equally good candidates for a person name given our liberal counterpart relation.

To avoid that commitment, we can borrow a suggestion from Lewis.³⁰⁷ Lewis rejects haecceitism, which he defines as the denial of a particular supervenience thesis: that what a world represents of individuals *de re* supervenes on their qualitative character. Still, Lewis accepts that there will be circumstances in which two or more qualitatively described individuals within a world count as counterparts of someone in another world. Perhaps, for example, there is world in which your mother gives birth to twins with your genetic makeup. It seems that in such a world, there is no qualitative difference that can single out one twin as 'you' rather than the other. But it would also be wrong to say that you do not exist in such a world. Lewis's response is so say that representation *de re* of individuals is not something that is done by possible worlds as a whole, but it is done by *possible individuals*. Given that both twins are your counterparts, they are both possible ways you might have been. Of course, the representation of you provided by the first twin includes that you are not at the same time the second twin. And, the representation of you provided by the second twin includes that you are not at the same time the first twin.

LMC can make use of a similar strategy by arguing that relative to a single world considered as actual, there can be many maximal possibilities associated with other worlds considered as counterfactual. Given our liberal counterpart relation induced by 'person', there are equally good ways of assigning names to individuals relative to a single world pair. For each of these equally good ways, there is a distinct maximal possibility associated with that world pair. Let's return to the example of Cormac. We know that the reference of 'Cormac' has been fixed to an individual at the actual world. Now, let's go to a Ramsey sentence world that says one person is F and G and another person is F and H. Relative to the actual world, that world will be associated with one

³⁰⁷ Lewis, *On the Plurality of Worlds* pp.230-235.

maximal possibility according to which Cormac is F, G and not H, and another maximal possibility according to which Cormac is F, H and not G.

Now, we are in a position to say how possible worlds construed as Ramsey sentences determine maximal possibilities. First of all, remember that according to LMC, the Ramsey sentences themselves are determined to be possible by the linguistic rules governing English, and count as complete descriptions of ways things might be in a limited vocabulary. Effectively, the Ramsey sentences include terms whose conditions of application do not depend on which world is considered as actual. However, maximality requires that every English sentence is determined to be true or false at a maximal possibility, and that includes sentences including names and kind terms. Given that there is more than one maximal possibility per world, maximal possibilities cannot be represented as functions from single worlds to sets of sentences, or even as functions from world pairs to sets of sentences. Instead, LMC must argue that a set of maximal possibilities (i.e., a set of sets of sentences in English) is determined relative to each centred world considered as actual, plus the set of other centred worlds. The Ramsey sentence constituting a possible world will be true at every maximal possibility generated when that world is considered as counterfactual, no matter which world is considered as actual. As such, it will be a member of all those maximal consistent sets of sentences. Effectively, some maximal possibilities will contain the same possible worlds as parts.

To sum up, maximal possibilities are generated from worlds as follows. Each centred possible world will generate a single maximal possibility when it is considered both as actual and counterfactual. However, considering one world as actual and a distinct one as counterfactual can generate many different maximal possibilities as there will often be more than one equally good way of assigning names at a world relative to some other world considered as actual. As a result, the relation between world pairs and maximal possibilities will be one-to-many. This has an interesting consequence. Normally, two-dimensional models provide sentences truth conditions in terms of functions from world pairs to truth values, such that one and the same world can be treated as either actual or counterfactual; it can be either member of the pair. This approach won't work given the considerations noted above, since a world pair alone is not enough to provide a verdict on many sentences. Instead, truth conditions must be given relative to worlds considered as actual, and maximal possibilities generated from those worlds.

7.6 A two-dimensional model

Based on the account given above, I will now construct a basic model for a limited number of sentences including names, predicates, variables, quantifiers and modal operators. (Note that this model does not include indexicals.)

The language we are modelling consists of the following vocabulary:

- Connectives: \rightarrow, \sim
- Quantifiers: \exists, \forall
- Variables: x, y, \dots
- Constants: a, b, \dots
- For each $n > 0$, n -place predicates F, G, \dots
- Parentheses
- Modal operators: \Box, \Diamond

A well-formed formula is defined as follows:

- If Π is an n -place predicate and a_1, \dots, a_n are variables or constants, $\Pi a_1, \dots, a_n$ is a well-formed formula
- If ϕ is a well-formed formula and ψ is a well-formed formula and a is a variable then $\sim\phi, (\phi \rightarrow \psi), \forall a(\phi), \Box(\phi)$ and $\Diamond(\phi)$ are well-formed formulas

Our model M consists of an ordered sextuple $\langle D, D_v, W, P, I, I_c \rangle$ where:

- D is a non-empty set (the set of individuals)
- D_v is a non-empty set (a set of pairs composed of a member of D and a predicate)
- W is a non-empty set (the set of worlds), such that each member of W is a subset of D_v
- P is a non-empty set (the set of maximal possibilities), such that each member of P is a set of ordered quadruples composed of a member of W , a second member of W , a constant, and a member of D_v .³⁰⁸
- C is a non-empty set (the set of sets of counterparts), such that each member of C is a subset of D_v

³⁰⁸ Intuitively, the set of quadruples that makes up a maximal possibility is as follows. The first member of each quadruple is the world considered as actual, the second member is the world considered as counterfactual, and the third and fourth members are a constant and an individual assigned to that constant relative to the world considered as actual and counterfactual. Within a given set of quadruples (a maximal possibility), the world considered as actual and the world considered as counterfactual will be the same in each quadruple. However, two different maximal possibilities can assign constants differently relative to the same pair of worlds, so two different sets of quadruples might share the same worlds as the first two members in each quadruple, but assign names differently.

- I is a function (the interpretation function) that assigns
 - each n-place predicate paired with a member of P a set of n-tuples of the form $\langle u_1 \dots u_n \rangle$, where $u_1 \dots u_n$ are members of D ; and,
 - each constant paired with a member of P a member of D_v .
- I_c is a function that assigns each constant paired with a member of P a member of D .

A variable assignment g for M is a function that assigns each variable a member of D_v .

An individual-variable assignment h for M is a function that assigns each variable a member of D .

Denotation is defined as follows. $[a, p]_{M, g, h} = I_c(a, p)$ if a is a constant, and $[x, p]_{M, g, h} = h(x)$ if x is a variable. Terms are constants or variables.

A valuation function for M relative to g and h ($V_{M, g, h}$) assigns to each well-formed formula ‘T’ or ‘F’ relative to a world and a maximal possibility as follows:

- For any world w , any maximal possibility p , and any terms a and b , $V_{M, g, h}(a = b, w, p) = T$ iff $[a, p]_{M, g, h} = [b, p]_{M, g, h}$
- For any world w , any maximal possibility p , any n-place predicate Π , and any terms $a_1 \dots a_n$, $V_{M, g, h}(\Pi a_1 \dots a_n, w, p) = T$ iff $[a_1, p]_{M, g, h} \dots [a_n, p]_{M, g, h} \in I(\Pi, p)$
- For any world w , any maximal possibility p and any formula ϕ , $V_{M, g, h}(\sim \phi, w, p) = T$ iff $V_{M, g, h}(\phi, w, p) = F$.
- For any world w , any maximal possibility p and any formulas ϕ and ψ , $V_{M, g, h}(\phi \rightarrow \psi, w, p) = T$ iff $V_{M, g, h}(\phi, w, p) = F$ or $V_{M, g, h}(\psi, w, p) = T$
- For any world w , any maximal possibility p , any variable x , and any formula ϕ , $V_{M, g, h}(\forall x(\phi), w, p) = T$ iff for every $\langle u, \Pi \rangle \in \langle w, w \rangle \times c$, $\langle u, \Pi \rangle \in p$, $V_{M, g, h}(\phi, w, p) = T$ when $g(x) = \langle u, \Pi \rangle$.

Again, we need separate truth conditions for when modal operators attach to open formulas as compared to when they attach to full sentences.

- For any world w , any maximal possibility p , any variable x and any predicate Π , $V_{M, g, h}(\Box \Pi x, w, p) = T$ iff $g(x) = \langle u, \Omega \rangle$ such that $I(\Omega, p_x) \subseteq I(\Pi, p_x)$ for all $p_x \in P$.
- For any world w and maximal possibility p , any constant a , and any predicate Π , $V_{M, g, h}(\Box \Pi a, w, p) = T$ iff $I(a, p) = \langle u, \Omega \rangle$ such that $I(\Omega, p_x) \subseteq I(\Pi, p_x)$ for all $p_x \in P$.

- For any world w and any maximal possibility p , any variable x and any formula ϕ , $V_{M,g,h}(\Box\forall x(\phi), w, p) = T$ iff $V_{M,g,h}(\forall x(\phi), w, p) = T$ for every $p \in P$ such that w forms the first member of all its sets.
- For any world w , any maximal possibility p , and any terms a and b , $V_{M,g,h}(\Box a = b) = T$ iff $I(a, p) = I(b, p)$ or $g(a) = I(b, p)$ or $g(b)$.
- For any world w and any maximal possibility p and any formula ϕ , $V_{M,g,h}(\Box\Box\phi, w, p) = T$ iff $V_{M,g,h}(\Box\phi, w, p) = T$
- For any world w and any maximal possibility p and any formula ϕ , $V_{M,g,h}(\Diamond\phi, w, p) = T$ iff $V_{M,g,h}(\sim\Box\sim\phi, w, p) = T$
- For any world w and any maximal possibility p and any formula ϕ and any variable x , $V_{M,g,h}(\exists x(\phi), w, p) = T$ iff $V_{M,g,h}(\sim\forall x(\sim\phi), w, p) = T$.³⁰⁹

This model is intended to fill in some of the gaps left by the model in section 7.4, most notably by including truth conditions for sentences involving constants. It retains the approach to *de re* modal truth taken in 7.3 and 7.4 by treating *de re* modal truths as dependent on the dominant sortals with which individuals are paired. However, it captures the insight that the individual a name picks out depends on which world is considered as actual by relativising truth to a world considered as actual paired with a maximal possibility, rather than simply a single world. A maximal possibility is represented as a set of sets intended to contain the information needed to get the right truth conditions for sentences. They tell you which world is to be considered as counterfactual, which world is to be considered as actual, and which constants are paired with which possible individuals. While I have not added indexicals to the model above, doing so should be relatively straightforward. Currently, worlds are represented as sets of possible individuals paired with sortals. Centres could be added to worlds by specifying one such individual as ‘special’. (Of course, we would need a separate centred world for each possible individual existing at a non-centred possible world.) Then, sentences involving ‘I’ would need to be assigned truth conditions relative to the counterpart relations governing the individual at the centre of the world considered as actual.

7.7 Have modal properties and propositions snuck in the back door?

In chapters 3-5, I argued that if LMC accepts there are modal conditions of existence, identity and persistence had by objects, and modal truth conditions had propositions,

³⁰⁹ Note that this model is just one suggestion for how sentence truth at maximal possibilities might be represented following the strategy outlined in section 7.5. There may well be other (perhaps simpler) ways to flesh out the same approach.

conventionalism about objects and truth follows. The strategy for avoiding this consequence was to deny that flesh and blood objects and structured propositions have any of these modal features, and instead to argue that modal sentences should be assigned truth conditions based on the rules themselves, independent of any worldly matters. It might be objected, however, that the system described in this chapter is a way of constructing modal properties and modal propositions. After all, it includes modal predicates that will be true of terms referring to worldly objects. And, it allows modal adverbs to attach to sentences that express worldly propositions. Why is it then, that these do not confer modal properties on objects and modal statuses on propositions in such a way that object conventionalism and truth conventionalism result, via the arguments in chapters 3-6?

The central argument from those chapters appealed to existence, identity and persistence conditions for objects, and truth conditions for propositions. The argument was that if worldly objects and propositions have such conditions, they end up conventional. This was because EIP conditions partly determine what exists, and truth conditions partly determine what's true. For an object to be possibly ground to sawdust, for example, is for it to be such that it can survive that change in its composition taking place in the real world. Similarly, for a proposition to be true necessarily is for it to be true no matter how things are in the world, and for two propositions to be inconsistent is for the truth of one to preclude the truth of the other.

It's important then, that the system outlined here does not supply flesh-and-blood objects and structured propositions with modal EIP conditions and truth conditions. The difference between the Sidellian strategy described in chapter 3 and the strategy described here is that Sidelle wanted to take seriously the idea that objects in the world have modal features that are just like their non-modal features. The same applied to Thomasson, who wanted to maintain that pleonastic modal properties are just as real as non-pleonastic ones. The source of the trouble was that worldly modal features have implications for how the world is carved up into objects. The strategy described here does not require anything of flesh and blood objects in order for modal sentences to be true. The truth or falsehood of all modal sentences is determined by the linguistic rules governing terms via possible worlds constructed from those rules. This applies even in the cases of actual-world dependence described above; the modal truths at a given maximal possibility are relativised to which centred world is considered as actual, but the rules alone connect centred worlds considered as actual to maximal possibilities. While one such world in fact corresponds to how things are in the physical universe, how things are in the physical

universe is not what determines the modal truths at any maximal possibility; rather, that job is done directly by the rules.

It's true that in the system described above modal predicates can be correctly applied to referring terms; however, the conditions under which they apply are entirely conventional and linguistic. In chapter 6, I argued that non-modal predicates pick out real, worldly properties that might be considered to be universals, for example. There are no corresponding modal properties had by objects on the view defended here. There are two different ways to think of the *de re* / *dicto* distinction. One is in terms of the logical form of sentences. Modal sentences that are logically *de re* have modal operators attached to open formulas, rather than to full sentences. The other way to think of the distinction is to treat *de re* modality as a feature of things, and *de dicto* modality is a feature of sentences. On this second way of looking at things, modal statuses had by propositions might be thought of as a kind of '*de re*' modality, given that propositions are entities independent of language. The view defended here treats all modality as *de dicto* in this second sense. However, this is compatible with maintaining that some sentences are logically *de re*; a method for dealing with such sentences is provided in sections 7.3 and 7.4. By doing away with *de re* modality in the worldly sense, LMC can avoid conventionalism about objects and truth.

7.8 Conclusion

In previous chapters, I argued that linguistic modal conventionalists ought to provide truth conditions for modal sentences such that modal truth is determined by linguistic rules alone, rather than by any features of objects or of propositions. The aim of this chapter was to provide a sketch of how this may be done, and call attention to some of the more difficult aspects of the task. In particular, the linguistic modal conventionalist will have more trouble than some realist modal theories when it comes to explaining *de re* modal truths, necessary synthetic truths and contingent analytic truths. While the task is by no means complete, I have suggested here that relativising reference to dominant sortals may be helpful for providing truth conditions for *de re* modal sentences, and that taking advantage of insights from the framework of two-dimensional semantics may be helpful for accounting for necessary synthetic truths and contingent analytic truths. The framework sketched here could be developed to provide more rigorous truth conditions for a range of modal sentences in English, compatible with the approach to modal truth taken by LMC.

CHAPTER 8

Desiderata Revisited, and Objections and Replies

Having set out a proposal for linguistic modal conventionalism to avoid object conventionalism and truth conventionalism, I will now revisit the desiderata established for LMC in the introduction and evaluate how well the theory is able to satisfy them. In the context of doing so, I will raise some objections to the theory and discuss if and how those objections can be deflected. Section 8.1 discusses LMC's epistemological desiderata and related objections, and section 8.2 discusses its metaphysical desiderata and related objections. Sections 8.3 – 8.5 respond to other objections, including that LMC makes the modal truths contingent (8.3), that modal truths in LMC are specific to English and cannot be translated into other languages (8.4) and Lewis's objections to linguistic ersatzism as they apply to LMC (8.5).

8.1 Epistemological desiderata and objections

One of the primary motivations for LMC is that it promises to explain our knowledge of modal truths in a way that is compatible with empiricism and methodological naturalism, and meets the integration challenge posed by Benacerraf and Peacocke. Briefly, that challenge is to provide a semantics for modal sentences that is compatible with knowledge of modal truths. Whatever it takes for a modal sentence to be true, it must be such that we are capable of gaining knowledge of such things, at least in those cases where we are confident that we *do* have modal knowledge. LMC aims to meet this challenge by treating the truth of modal sentences as fully dependent on the conventional linguistic rules governing the terms in which those sentences are expressed. This semantics was set out in chapter 7; the rules governing English terms establish a set of internally consistent maximal possibilities, and modal sentences are assigned truth conditions relative to those possibilities. Given that modal truth depends on linguistic rules, a solution to the integration challenge requires that we have knowledge of the rules to explain our knowledge of modal truths.

8.1.1 Objection: English speakers have insufficient knowledge of the rules of English

One way to object to LMC is therefore to deny that we have the requisite knowledge of the rules of our language. The objector might claim that it is implausible that any average speaker of English knows all the rules of the language she speaks. And, if we don't know

the rules of English that determine modal truths but we do know the modal truths, the integration challenge isn't solved.

A promising line of response to this objection argues that the sort of knowledge of the linguistic rules that is required for knowledge of modal truths does not entail that we are able to write down every rule of English. Rather, LMC can argue that knowing the rules means *being able to follow them*. In particular, someone who is competent with English should be able to recognise when a transgression of the rules has been made. A similar point has been made by Chalmers and Jackson when it comes to concepts.³¹⁰ They argue that many concepts are analysable, and are understood by us, even though it is implausible that we can write down necessary and sufficient conditions for when the concepts apply and when they don't. An example of such a concept is 'knowledge' itself. Gettier cases, as well as counterexamples for numerous attempts to revise analyses since, suggest we may never be able to establish necessary and sufficient conditions for when the concept applies. However, that doesn't mean that the concept doesn't have conditions of application, or that we don't have knowledge of those conditions. Rather, Chalmers and Jackson argue that our ability to make judgments about whether specific cases constitute knowledge demonstrates that the concept is analysable, and that we understand it. In fact, our understanding of the concept is reflected in our ability to decide whether it applies in a given situation, and to construct complex counterexamples to purported analyses.

LMC can argue that similar abilities reflect knowledge of the linguistic rules. While we may not be able to write down the rules governing some particular term in English, we are able to make judgments about whether the term applies given a description of a scenario. What's more, we are able to judge whether the description of the scenario itself is consistent or inconsistent. It's plausible that this is the sort of knowledge of the rules that is required as the basis of modal knowledge. According to LMC, a sentence such as 'Possibly, some F is G' is true because the linguistic rules allow 'F' to be applied where 'G' is applied. As such, our ability to recognise that a description of a scenario in which an F is a G is not inconsistent can be the basis of our knowledge that possibly, some F is G. Our ability to decide, for example, that the term 'coloured' applies to something if it is described as 'blue' reflects knowledge of the rule that 'coloured' should be applied where 'blue' applies. Once again, this can form the basis of our knowledge of the sentence, 'Necessarily, everything blue is coloured.' A similar point is often made about grammar; the rules of English grammar are enormously complicated, and only experts are able to

³¹⁰ David J. Chalmers & Frank Jackson, 'Conceptual Analysis and Reductive Explanation,' *The Philosophical Review* Vol. 110, No. 3. (2001): pp.315-360.

write them down. However, most of us demonstrate a grasp of those rules by being able to follow them and by being able to recognise when one is broken. LMC can claim that semantic rules are in this respect just like grammatical rules.

A second line of defence comes from Lewis, who notes that while those who are party to a convention (e.g. a convention of language) require knowledge that the convention holds, the knowledge required can be of a very minimal sort.³¹¹ For example, the knowledge might be ‘irredeemably non-verbal’. Lewis describes a case in which two people rowing a boat have tacitly arrived at a convention to row using a certain rhythm and technique, but neither is able to adequately describe using words the specific timing or rhythm used. This is similar to the case of the rules of grammar. The convention to follow the rules is in place, and speakers of a language have knowledge of the convention in some sense, but they may not be able to verbalise that knowledge. Lewis also says that knowledge of convention may be of a ‘potential’ sort. Knowledge of a convention does not require that we have considered whether the convention holds in every specific circumstance; all that’s required is that we are able to work out what the convention dictates when we are faced with the circumstance. LMC can argue that knowledge of the conventional semantic rules that determine the modal truths is sometimes non-verbal or potential. An example of non-verbal knowledge comes from the English convention governing adjective order. In English, adjectives follow a specific order: quantity, quality, size, age, shape, colour. For example, the English phrase, ‘The three great big old square green buildings...’ is acceptable, while, ‘The great three old big green square buildings...’ is not.³¹² Many English speakers are not explicitly aware of this rule, but follow it anyway; this suggests that they have non-verbal knowledge of the convention. Examples of potential knowledge of semantic rules come from cases in which we can only articulate our knowledge when we are asked to consider the rule explicitly. For example, you might correct a non-native English speaker by saying, ‘That’s a bottle, not a jug.’ However, when asked *why* it’s a bottle, not a jug, you might have to think before concluding that jugs must have handles, where bottles do not, or that jugs have spouts where bottles do not.

As with grammatical rules, there are some semantic rules that only experts are competent with, even implicitly. In cases of arcane or obscure grammatical rules, ordinary speakers of English may not be able to even recognise when the rule is broken, let alone write it down. Similarly, there will be semantic rules in English that are only known by experts.

³¹¹ Lewis, *Convention* pp.63-64.

³¹² Note that this rule is not without exceptions. For example, while we follow the rule in ‘ugly, little’ we also tend to say, ‘big, ugly’.

Clear examples of such cases come from science. Only physicists will be able to recognise when certain rules governing terms like ‘quark’, ‘neutron’, and so on are broken. Only psychologists and neuroscientists will be able to recognise when rules governing terms like ‘reuptake inhibitor’ and ‘axon’ are broken. Therefore, as you would expect, there will be certain modal truths that only the experts in these fields know.

A further objection, therefore, suggests that there are some modal truths that even the experts don’t know. One example is mathematical truths. There are still theorems that remain to be established by mathematicians but are nonetheless true necessarily if true at all, and are expressed using terms that already form part of our language. A famous example of such a case is Goldbach’s conjecture that every even integer greater than two is the sum of two primes. According to LMC, given that Goldbach’s conjecture is expressed in English, the rules governing its terms must determine if it is true necessarily. However, if even the experts do not know whether Goldbach’s conjecture is necessary, the objection runs, its necessity cannot be determined by linguistic rules.

One point to make in response to this objection is that because rules governing terms arise naturally, they may require study in order for us to make them explicit. English linguistic rules have two features that may help to explain cases like Goldbach’s conjecture. Firstly, they are at no point legislated by a person or group of people; instead they arise implicitly. Secondly, they are often very complex. It’s unsurprising that rules with these two features can require significant study if we want to make them explicit. A parallel comes from social rules and customs. An anthropologist or sociologist might have to engage in significant research to describe the customs of her own society, even though she is able to conform with those customs without thought. The same can apply to the rules of language. Sometimes, the rules governing language can be complex, and what follows from them can be difficult to establish. Nonetheless, mathematicians’ attempts to prove theorems are navigated in a confident way in that they recognise when their attempts fail and when they succeed. This confident navigation suggests a grasp of what counts as an inconsistency, or according to LMC, a grasp of what counts as contravening a rule and what doesn’t. LMC might argue that mathematicians might be characterised as having ‘potential’ knowledge of what follows from the rules, even though it is very difficult to bring that potential to fruition.

A second line of response that might be suitable for some mathematical cases suggests that when it comes to highly specialised fields like mathematics, the process of working out what follows from the rules is partly creative or constitutive; the rules after all are up to us. Perhaps in some cases, our rules governing terms might themselves be incomplete

or inconsistent by their own standards. This is to be expected in circumstances where the rules are very complex, especially given that they arise implicitly, rather than being explicitly laid down. Experts in fields like mathematics might be thought of as having the job of revising existing rules and constructing new ones during the course of their work. This allows them to fill in gaps where the rules are incomplete, and fix internal inconsistencies. Part of the job of cutting-edge theorists is to help construct systems of rules by extending and revising existing systems; this job is done alongside the job of establishing what follows from existing rules.

8.1.2 Objection: In order for knowledge of linguistic rules to provide modal knowledge, we must all be linguistic modal conventionalists

A second epistemological objection calls into question whether even perfect knowledge of linguistic rules would allow for knowledge of modal truths, granting that the modal truths are determined by the rules. The objector might ask why we should expect knowledge that ‘bachelor’ should be applied only where ‘unmarried’ is applied to translate to knowledge that ‘Necessarily, all bachelors are unmarried’ is true. Surely, the objection runs, in order for the connection to be made, we must *also* know that the rules determine the modal truths. In other words, we must all be conscious adopters of LMC. Put in the context of the integration challenge, the objection suggests that integration requires more than that we have knowledge of the reduction base for our target. We must also have knowledge *that* the target reduces to the base.

Plausibly, this objection sets the bar for meeting the integration challenge too high; it is a standard that almost any informative theory of modality will struggle to meet. For example, those who argue that modality reduces to goings-on at possible worlds must explain not only how we know about possible worlds, but also how we know that modal truths depend on them. Of course, it’s implausible to suggest that anyone without philosophical training could know that modal truths depend on possible worlds; yet many such people have modal knowledge. The same goes for theories that reduce modality to essence, and a range of other theories. In order to be interesting and substantive, theories that explain modality in terms of some other sort of fact or entity will make claims that are not known by most people. According to this objection, any such theory precludes our having modal knowledge.

It’s worth noting, however, that while LMC cannot claim that we have explicit knowledge of how the modal truths are connected to the rules, it can explain our intuitive modal judgments better than its rivals. In section 2.2.2 I referred to an example Thomasson uses to provide evidence that analyticities are reflective of rules. When a

child asks ‘Will Aunt Dora always be a bachelor?’ we might respond by saying, ‘Bachelors *must* be men’. According to LMC, this kind of modal judgment derives from our understanding of the rules governing the term ‘bachelor’. This example helps demonstrate how knowledge of linguistic rules can inform intuitive modal judgments, even if ordinary speakers cannot explicitly make the link between modal sentences and linguistic rules. Note that according to Thomasson, modal sentences are nothing more than expressions of the rules. As a result, she may wish to respond to this objection by claiming that knowledge of the rules simply *is* modal knowledge, even if we are unaware that modal sentences are simply different ways to express rules.

8.2 Metaphysical desiderata and objections

In the introduction, I argued that LMC ought to aim for a reductionist theory that avoids primitive modality, and that it ought to be parsimonious when it comes to ontological types and tokens. The central ontological commitments of the version of LMC I have described are to:

- a) matter occupying space-time
- b) non-modal properties and relations instantiated by matter
- c) objects construed as bits of matter instantiating non-modal properties and relations
- d) propositions construed as complexes composed of objects and non-modal properties and relations
- e) a rule-governed natural language
- f) sets

In chapter 6, I argued that LMC’s metaphysical desiderata are met by the metaphysical picture contained in a) – d). After all, a) – d) presents a reductionist metaphysics in which matter occupying space-time and non-modal properties and relations are the only fundamental entities, with objects and propositions reducible to constructs out of those entities. As such, the key challenges for LMC come from e) and f). In section 2.4, I noted that LMC would need to appeal to the resources of set theory, as well as abstract sentences in a natural language. Ultimately, it’s unclear whether the naturalist can do without these entities, or whether they can be reduced to the kind of entities contained in a) – d). If not, LMC will not be able to do away with abstract entities altogether, as may

seem desirable according to a strict naturalist position.³¹³ Here, I will focus on the extent to which e) can be elucidated in such a way that primitive modality is avoided. I'll discuss two objections according to which it cannot, as well as a third objection according to which LMC fails to satisfy its metaphysical desiderata due to a treatment of the laws of nature as conventional.

8.2.1 *Objection: the rules require primitive modality*

The key objection to LMC's claim to avoid primitive modality is that linguistic rules themselves require modality. In order for language to be rule-governed, there must be applications of a term that the rules *permit*, and others that they *prohibit*. However, these notions of permission and prohibition are usually elucidated modally. What is permitted by the rules is what is *possible* given the rules; what is prohibited by the rules is what is *impossible* given the rules. Of course, if the linguistic rules have modal import, LMC cannot claim to have achieved a fully reductionist theory of modality. Thomasson's response to this objection is to grant it. She explicitly states that her modal normativism does not claim to reduce modal notions to non-modal notions; instead, she claims to have reduced *metaphysical* modality to *deontic* modality.³¹⁴ As such, she denies that deontic modality must be analysed in terms of metaphysical modality and instead takes deontic modality to be the primitive notion. Metaphysical modal sentences, she suggests, are simply commands in disguise. One option for LMC, then, is to accept that its metaphysical desiderata are not fully met, and to retain primitive deontic modality.

On the other hand, if LMC wants to deny primitive deontic modality, what's required is an account of the rules governing language use such that they can be stated in purely descriptive terms. One place to look for such an account is once again in Lewis's theory of convention. Lewis's account of how conventions arise and what it takes for a convention to be in place does not require that conventions have modal force. The basic account is given in terms of *regularities*. Lewis says that a regularity in the behaviour of members of a population counts as a convention, when, for some reoccurring situation, everyone in the population conforms to the regularity in the situation, everyone expects everyone else to conform to the regularity in that situation, and everyone benefits from conforming to the regularity. The latter condition is met when some problem of coordination is solved by conformity.³¹⁵ This account of convention simply requires that

³¹³ Lewis argues that sets offer such utility in philosophical theories that we ought to accept their existence; by appealing to sets our theories incur extra ontological commitments, but that is paid for by a large increase in explanatory power. (Lewis, *On the Plurality of Worlds* pp.3-4.)

³¹⁴ Thomasson, 'Modal Normativism and the Methods of Metaphysics' pp.136-137.

³¹⁵ Lewis, *Convention* p.42. For this solution to be helpful, it must be that what counts as a 'benefit' can also be spelled out non-modally. Note that for Lewis himself, what's required for conformity to be beneficial is

people *in fact* tend to regulate their behaviour in certain ways, rather than that they *must* or *ought* to regulate their behaviour in those ways.

LMC might construct a non-modal theory of rules that takes advantage of this definition of convention in terms of actual regularities. A convention to sometimes apply a term and other times withhold it, determined by actual patterns of behaviour, could be treated as sufficient for a rule of use for that term. Alongside patterns of use for a term, our behaviour also exhibits patterns of sanctioning for uses that do not conform, and approbation for uses that do conform. If rules of use are determined simply by actual regularities, and actual patterns of sanctioning and approbation, modal facts need not be assumed in order to get rules of use.³¹⁶ Above, I argued that one way our knowledge of rules is revealed is by our ability to judge whether a term applies in a given situation. If conventional rules are spelled out non-modally in the way suggested, our judgment need not reflect knowledge that a term *must* or *must not* be applied in the situation described. Instead, our judgment can be taken to reflect a recognition of the extent to which the scenario is similar to or different from scenarios in which members of the linguistic community have used the term in the past, and a desire to conform due to mutual benefit. If actual regularities are sufficient to establish conventions of use for terms, and those conventions determine modal truths, LMC need not rely on primitive modality in its rule-based theory of modal truth.

A related objection, however, questions how any regularities or patterns of past use could determine whether future uses do or do not conform to a given convention. This sort of objection is raised in Kripke's famous interpretation of Wittgenstein in *Wittgenstein on Rules and Private Language*.³¹⁷ Kripke's line of argument is that there is no way of determining from past uses of a term what convention for use is actually in place. Say that as a community, our convention to apply 'bachelor' to unmarried men is constituted by an actual regularity of applying and withholding the term. How do we know that the rule for 'bachelor' wasn't that it applies to unmarried men only up until yesterday, and applies to married men from today onwards? The objection is that there can be no feature of our

that the behaviours constitute a 'coordination equilibrium'. This condition is met when no single actor *would* have achieved a better outcome by acting differently (pp.8-24). Since this condition is modal, LMC must either explain why the use of the modal condition is non-viciously circular, or provide a way for the benefit of conformity to be described without appealing to such modal conditions.

³¹⁶ Below, in section 8.2.3, I argue that LMC should embrace the 'best systems' theory of natural laws. One interesting line of investigation would be whether similar techniques could be established to determine a set of 'linguistic' laws in English. Perhaps the 'axioms' of English can be determined by examining the simple, strong regularities in the use of sentences in English.

³¹⁷ Saul A. Kripke, *Wittgenstein on Rules and Private Language: An Elementary Exposition* (Cambridge, Mass: Harvard University Press, 1982).

past behaviour of applying terms that can determine the appropriateness of future applications.

One response to this objection comes from Kripke's own analysis of the Wittgensteinian argument. Kripke says a 'sceptical' response to the problem points out that whether some application of a term is right or wrong can only be determined by a community as a whole, not by a single individual.³¹⁸ He suggests that when it comes to new applications of a given term, we cannot establish in advance a rule for whether the application is correct or incorrect. Instead, individuals simply have 'inclinations' about whether to apply the term or not. By itself, a single person's inclinations cannot reflect a rule of use.³¹⁹ However, we judge that when there is great consensus among community members' inclinations, those who do not share them are to be treated as 'wrong'. On this line of thought, linguistic rules are constituted by very minimal patterns of use, approbation and sanction among speakers. Whether or not a term applies given a description of a hypothetical scenario is determined by patterns of response in the linguistic community. While these patterns of use are rules only in a minimal sense, Kripke's considerations may provide a promising line of argument for LMC if it is to construct a theory of linguistic rules that does not rely on primitive modality.

8.2.2 *Objection: the modal truths stand in a modal dependency relation to the rules*

Setting aside whether or not the rules themselves are modal, a second place to look for primitive modality in LMC is in the relation that stands between the linguistic rules and the modal truths. In describing LMC, I have often made claims such as 'Metaphysical modal truth depends on linguistic rules,' or 'The rules determine the modal truths.' LMC must say something about the relation of dependency at stake. One objection to the theory argues that this dependency relation must be construed modally, and as a result, that LMC at best requires primitive modality, and at worst is guilty of vicious circularity. According to the objection, the dependency relation between the rules and the modal truths must have modal force in order for it to be strong enough to do its required work. Say, for example, that some linguistic rule makes some modal sentence true. Is it necessary that when the rule is in place, the modal sentence is true? If not, there will be some possibility in which the rule is in place but the modal sentence fails to be true. But then, the rule itself can't be doing all the work in determining the modal truth. On the other hand, if it is necessary that the modal truth holds whenever the rule is in place, a modal property is antecedently required in order for modality to be determined by the rules. Of course,

³¹⁸ Ibid, pp.86-92.

³¹⁹ After all, if a single person's inclinations were the judge of whether or not a rule is accurately followed, there is no sense in which she could be wrong, or fail to follow the rule. (See Kripke, *ibid* p.88.)

LMC cannot claim to have fully explained modal truth in terms of linguistic rules if doing so requires a pre-existing modal relation between rules and modal truths.

One response to this objection points out that that LMC should not countenance questions about the dependency relation's modal status that assume it must be determined independently of the rules. The objection suggested that if the dependency relation does not have modal force, there will be some possibility where the linguistic rule is in place but the modal truth fails to hold.³²⁰ Given that LMC does not accept that there is non-linguistic modality, it ought not accept that independently of linguistic convention, we can assess whether linguistic rules *necessitate* modal truths. If there are no non-conventional possibilities, we cannot assess what goes on at them. What's more LMC can claim that the dependency relation between the rules and the modal truths has modal force without being committed to the claim that there are modal truths only due to the pre-existence of a modal dependency relation. Rather, LMC can assert that the modal status of the dependency relation is determined linguistically, just as the modal status of any other sentence is determined linguistically. Here is an analogy. One possible theory of aesthetic value is that it is determined in some way by human brains. According to such a theory, there is a dependency relation between human brains and aesthetic properties. Perhaps there are formal or logical properties of that dependency relation that render it beautiful. If so, the dependency relation itself has aesthetic properties. Perhaps also the human brains that are said to determine aesthetic value also have aesthetic properties. The objection that such a theory fails due to circularity is misguided, since the aesthetic properties that are had by human brains and dependency relations do not themselves play a role in determining the existence of aesthetic properties.

In order for the case of the modal features of the dependency relation between linguistic rules and modal truths to be analogous to aesthetic value case, it must be that the modal status of the dependency relation isn't required in order for linguistic rules to produce modal truths. As such, an account must be given of the actual-world relation that stands between modal truths and the rules. One such account comes from Thomasson. She argues that the modal truths are simply *expressions* of the linguistic rules. If modal truths are simply expressions of the rules using the indicative rather than imperative mood, there need be no relation of dependency whatsoever between the rules and the modal truths.³²¹

³²⁰ It should be noted that this circumstance will trivially fail to occur regardless of the 'strength' of the dependency relation if S5 holds. In that case, any modal truth will be true at all possibilities if it is true at any possibility.

³²¹ Thomasson's treatment of modals as expressions of rules is discussed in detail in section 2.2.2 and in section 4.2. See Thomasson, 'Modal Normativism and The Methods of Metaphysics' section 2.1 and *Ordinary Objects* section 3.3.

More generally, it should be noted that LMC has interesting and perhaps controversial consequences when it comes to dependency relations that *are* essentially modal. Often, metaphysical dependence relations like grounding, supervenience and truth-making are taken to be inherently modal relations. According to LMC then, whether or not those relations hold between entities will be determined partly by linguistic convention.

8.2.3 *Objection: LMC makes laws of nature conventional*

One of the metaphysical desiderata of LMC was that it is consistent with metaphysical naturalism. One might argue that LMC fails to meet this desideratum if it is committed to taking the laws of nature to be conventional. If laws of nature are objective features of the physical universe, examinable by scientists, they ought not be considered conventional by naturalists. However, on at least some accounts of lawhood, laws of nature are defined as requiring the existence of necessary connections between properties. According to such views, the way that mere regularities are distinguished from laws of nature is that mere regularities hold only contingently, while laws of nature hold necessarily. On Armstrong's view, for example, it is a law that all Fs are Gs if there is a non-logical necessitation relation between F and G.³²² This relation might be thought of as a relation of physical necessity. If laws require physical necessity, and physical necessity is a restricted form of metaphysical necessity, the laws of nature must be conventional according to LMC.

Nonetheless, those attracted to LMC are unlikely to embrace these sorts of theory of lawhood. Rather, they are more likely to embrace a 'Humean' theory of lawhood that avoids commitment to necessary connections. One such account comes from Lewis in his 'best systems' theory of laws.³²³ According to Lewis, sets of truths can be arranged into numerous different deductively closed systems. In these systems, the virtues of simplicity and strength will be traded off. Some such systems will have a great deal of strength, in that they account for a large number of truths, but little simplicity, in that they have numerous axioms. An example is the system in which every truth is included as an axiom. Other systems will have a great deal of simplicity, in that they have few axioms, but little strength, in that they do not include many truths. The system in which a single sentence is the only axiom and the only truth is an example of such a system. Generally, extra simplicity in a true deductive system comes at the cost of extra strength, and *vice versa*. According to Lewis, the 'best' systems are those that achieve the greatest amount of simplicity that can be had without sacrificing too much strength, and the greatest amount

³²² David Armstrong, *What is a Law of Nature?* (Cambridge: Cambridge University Press, 1983.)

³²³ See David Lewis, *Counterfactuals* (Oxford: Basil Blackwell, 1973) pp.72-77, and Lewis, *New Work for a Theory of Univiersals*, p.367.

of strength without sacrificing too much simplicity. And, he says, the laws of nature are the regularities that are taken as axioms in the best system, or all the best systems if there are ties.

This sort of view has the advantage that it does not explicitly refer to necessitation in its account of what qualifies as a law. As such, it ought to be attractive to proponents of LMC. While the ‘Humean’ view comes with extra advantage that it coheres well with LMC’s other metaphysical motivations, a second view that does not appeal to necessity to explain the laws of nature is the primitivism endorsed by Maudlin, who suggests that the explanatory power had by laws of nature justifies treating lawhood as primitive in a system of metaphysics.³²⁴ A third non-modal approach comes from Carroll, who argues that merely being a non-accidental regularity is constitutive of lawhood.³²⁵ It remains the case that if physical necessity is conceived as a restricted form of metaphysical necessity it must be treated as conventional by LMC. Nonetheless, this consequence need not be a threat so long as physical necessity is not required to account for features of the world that we want to accept as non-conventional. If the laws of nature are in this category, adopting a best systems theory of lawhood, or another non-modal theory of lawhood can help achieve this.

8.3 Objection: LMC makes the modal truths contingent

Another objection that has been raised against LMC is that it treats the modal truths as themselves true only contingently.³²⁶ Usually, modal truths are taken to be true necessarily; if it necessary that p , it is necessarily necessary that p . However, LMC treats metaphysical modal truth as determined by which linguistic rules happen to be in place, and the matter of which rules are in place is not necessary. As a result, the objection runs, the contingency of the rules follows through to the modal truths. If the linguistic rules had been different, the modal truths would also have been different; as a result, the objection suggests that LMC cannot endorse the S4 axiom that if $\Box\phi$, $\Box\Box\phi$. As Simon Blackburn puts the problem, any theory that claims that ‘Necessarily, p ’ is true because of F must treat F itself as either necessary or contingent. If the former holds, the necessity itself has

³²⁴ See chapter 1 of Tim Maudlin, *The Metaphysics within Physics*, (Oxford: Oxford University Press, 2007.)

³²⁵ John W. Carroll, ‘Nailed to Hume’s Cross?’ in *Contemporary Debates in Metaphysics*, J. Hawthorne, T. Sider and D. Zimmerman eds., (Oxford: Basil Blackwell Publishing, 2008.)

³²⁶ Descriptions of this objection can be found in Alan Sidelle, ‘Conventionalism and the Contingency of Conventions,’ *Noûs* Vol. 43, No. 2 (2009): pp.224-241, Iris Einheuser, ‘Counterconventional Conditionals,’ Simon Blackburn, ‘Morals and Modals’ and Jonathan Livingstone-Banks, ‘The Contingency Problem for Neo-Conventionalism,’ *Erkenntnis* Vol. 82 No. 3 (2017): pp.451-714. Livingstone-Banks also argues that the objection applies to both Sider’s conventionalism and Cameron’s deflationism.

not been adequately explained. If the latter holds, then the necessity of p is undermined, because there will be at least some possibility in which p is false.³²⁷

The first point to make in response to this objection is that the truth conditions for iterated modal sentences provided in the previous chapter make modal sentences come out necessary, rather than contingent. According to semantics set out at the end of chapter 7, $\Box\Box\phi$ was treated as true at some maximal possibility so long as $\Box\phi$ was true at that maximal possibility. And, $\Box\phi$ was treated as true so long as ϕ was true at all maximal possibilities determined by some world considered as actual (when ϕ is a full sentence). As such, the truth of ϕ at all maximal possibilities is sufficient for the truth of $\Box\phi$ at all maximal possibilities, which is sufficient for the truth of $\Box\Box\phi$ at all maximal possibilities. According to LMC, whether or not the modal truths are contingent or necessary is determined by whether the linguistic conventions treat them as contingent or necessary. If the rules say that ‘necessarily, necessarily’ applies wherever ‘necessarily’ applies, then sentences with the form ‘Necessarily, S’ will count as necessary, not contingent.

Ultimately, when evaluating what is necessary and what isn’t, we must pay attention to the rules governing ‘necessarily’. If the rules determine that worlds in which the conventions are different are *not* worlds in which the modal truths are different, then S4 can be maintained. A simple diagnosis of the objection is therefore that it mistakes use for mention. The fact that ‘dog’ might have meant something different in English in virtue of being governed by different rules does not show that it is not necessary that all dogs are canines. When we assess what is in fact true necessarily, we hold fixed the meanings of our terms. Consider the following sentence: ‘If “bachelor” had meant what “unmarried woman” means, the sentence “Necessarily, all bachelors are male” would have been false.’ This sentence is true because it *mentions* the sequence of symbols ‘bachelor’ and considers how things would have been if that sequence had a different meaning. On the other hand, the sentence ‘If “bachelor” had meant what “unmarried woman” means, some bachelor might have been a woman’ is false because its consequent *uses* the English term ‘bachelor’. No matter what the sequence of symbols ‘bachelor’ had meant, it would remain necessary that all bachelors are males.

Sidelle and Einheuser offer defences to this objection on behalf of conventionalism along these lines.³²⁸ In Einheuser’s framework, a possible world is constituted by a non-conventional substratum paired with a conventional ‘carving’. However, the conventional

³²⁷ Blackburn, ‘Morals and Modals’ pp.53-54.

³²⁸ See Iris Einheuser, ‘Counterconventional Conditionals,’ *Philosophical Studies* Vol. 127, No. 3 (2006): pp.459-482 and Alan Sidelle, ‘Conventionalism and the Contingency of Conventions,’ *Noûs* Vol. 43, No. 2 (2009): pp.224-241.

‘carving’ need not be determined by the practices of the people inhabiting the world in question. Instead each substratum can be paired with a number of different carvings, based in various different conventional practices. The actual world pairs our actual substratum with the carving determined by our actual conventional practices. Einheuser says that questions about how things would have been had our conventions been different can be interpreted in two ways. Firstly, they might be interpreted as asking how things would have been had the *substratum* been different, with our conventions held fixed. She says that read as a ‘countersubstratum’ conditional, ‘If our conventions had been different, “Necessarily, S” would not have been true’ is *false*. This is because ordinarily, we hold our actual conventions fixed when assessing such conditionals. On the other hand, the sentence might be read as a ‘counterconventional conditional’. On this reading, we are asked to hold fixed the actual substratum and see how things would have been if a different carving were applied to it. Then, the sentence is *true*. Einheuser’s framework explains why S4 can be maintained by conventionalists; when we assess hypothetical scenarios where linguistic rules are different, we hold our actual conventions fixed in assessing truths. However, she also provides a sense in which different conventions *do* determine different modal truths, by allowing for ‘counterconventional’ conditionals in which different conventions are treated as actual.

8.4 Objection: English modal truths cannot be translated into other languages

According to LMC, the modal truths are determined by rules in English. However, other languages are governed by different rules. That suggests that according to LMC, the modal truths are specific to English, and cannot be translated into different rule-governed languages. What’s more, it suggests that the modal truths for German speakers, for example, are different from the modal truths for English speakers. This objection can be answered using similar considerations to the previous objection: the rules for use of English terms will determine whether it is permissible to translate ‘necessary’, ‘possible’ and so on into other languages. More generally, the rules of use for our terms should tell us the conditions under which translation is permissible. Plausibly, the rules *for English* say that the modal truths do not depend on the language you speak, just as they say the modal truths are not contingent. That suggests that English modal truths ought to be expressible in other languages, and that translation must be possible. As you would expect, the rules will not allow a translation of a necessary sentence in English into a contingent or false sentence in another language. So for example, ‘It is possible that when

translated into German “Some bachelor is married” is true’ is false in English according to the rules of English.

Nonetheless, accepting that the rules for English allow for the translation of modals is not enough to show that in practice translation can be achieved. The rules governing German can be used to represent various modal truths in German. And, the system constructed on the basis of German rules will no doubt be different to the system constructed on the basis of English rules. As such, it is worth considering how translation between modal sentences in the two languages can work, given that they are governed by different rules. One way to answer this question is to relax the requirements for translation such that exact similarity between the rules of different languages is not necessary for translation. This solution is used by Block and Harman in responding to a similar problem that arises for meaning holism.³²⁹ If the meaning of a term is determined by its relationships to other terms in a language, or by its conceptual role, no English term will exactly match any German term in meaning. Block suggests that usually, ‘close enough’ similarity is enough to warrant translation. If approximate similarity is enough, then plausibly many German modal truths will translate well into English modal truths.

8.5 Lewis’s objections to linguistic ersatzism

Given that the system outlined in chapter 7 is a version of linguistic ersatzism, time should be taken to respond to the objections Lewis famously raised against linguistic ersatzism in ‘On the Plurality of Worlds’.³³⁰ There are two main lines of objection Lewis presents, one of which will be addressed here, and the other of which has already been noted above. The objection noted above relates to the relation of consistency that must hold between sentences true at a maximal possibility. Lewis points out that since consistency is a modal notion, the linguistic ersatzer cannot claim to have achieved a complete reduction of modality so long as the consistency relation between sentences is taken as primitive. For LMC, the consistency relation is determined by linguistic rules. As such, the prospects for avoiding primitive modality for LMC depend on the prospects for articulating the rules, and the dependency relation between rules and modal truths, non-modally. Whether this can be done remains an open question; section 8.2 suggests some lines of argument LMC might pursue to show that it can.

³²⁹ Ned Block, ‘Advertisement for a Semantics for Psychology,’ *Midwest Studies in Philosophy* Vol. 10, No.1 (1987): pp.615-678 and Gilbert Harman, *Thought*, (Princeton: Princeton University Press, 1973) pp.107-110.

³³⁰ Lewis, *On the Plurality of Worlds* pp.142-165.

The second class of objections Lewis raises relate to the descriptive power of the world-making language in which the sentences making up maximal possibilities are expressed. The first problem Lewis raises relates to the use of a natural language such as English as the worldmaking language, which is a requirement for LMC. Lewis's objection to using a natural language as the worldmaking language is that its vocabulary is too limited to distinguish all the possibilities.³³¹ He argues that natural languages have finite vocabularies, but there are possibilities in which there are infinitely many things. For example, he says, there is a possible world where there are continuum many space-time points. A finite vocabulary (or even a countably infinite vocabulary) won't be able to be used to describe such a possibility. Lewis's response to this objection on behalf of linguistic ersatzism is to give up on using a natural language. He argues that ersatzers should use what he calls a 'Lagadonian' language, where every entity represents itself; objects function as names for objects, and properties function as predicates, for example. Unfortunately, this response is unavailable to LMC, because a crucial feature of the theory is that our knowledge of modal truths is explained by our knowledge of the conventions governing our own natural language.

The second problem of descriptive power arises for indiscernible objects. Given that linguistic ersatz worlds are descriptions, Lewis argues that the theory will not be able to account for descriptively indiscernible worlds or objects. Lewis accepts that indiscernible worlds may in fact not exist, but argues that indiscernible objects within worlds *do* exist. He provides the example of a world with 'eternal two-way recurrence' where an infinite series of qualitatively identical 'epochs' occur, in which the same events repeat over and over again. An individual in one epoch is indistinguishable from an individual with the same role in any other epoch, since the description for each will be the same. A second well known example comes from Max Black: a world might contain nothing but two exactly similar spheres in space, two miles apart.³³² Any description true of one sphere will be true of the other sphere. Given that individuals are represented as maximal consistent sets of predicates, we do not have enough possible individuals at our disposal to represent the distinct but indiscernible individuals in each case, as the same set of predicates apply to each indiscernible individual.

Lewis notes one move that he argues will not help with this problem: we could easily create more entities to describe indiscernible possibilities by pairing descriptions with the positive integers. In Max Black's case, one of the two spheres would then be represented by a description paired with '1' while the other would be represented by a description

³³¹ Ibid, pp.143-144.

³³² Max Black, 'The Identity of Indiscernibles,' *Mind* Vol. 61, No. 242, (1952): pp.153-164.

paired with '2'. Lewis argues that this solution won't work because it creates an 'irrelevant multiplicity'. His worry is that the two entities we end up with do not each unambiguously represent one of the two spheres. Instead, *both* entities ambiguously represent *both* of the two spheres; there is no way of determining which description / integer pair represents which sphere.

The third objection of descriptive power is the problem of alien properties.³³³ Lewis argues that there are possible features things might have that are not features had by anything actual. Given that we do not have any experience of properties that are merely possible, we will not have predicates in our language that pick them out. What's more, many 'alien' properties won't be fully describable in terms of the relations they have to familiar properties. As such, descriptions will not be able to fully capture those possibilities in which alien properties are instantiated. To demonstrate the problem, Lewis imagines a philosopher living in a simpler world than ours who wishes to construct a set of ersatz worlds using some world-making language.³³⁴ Perhaps in her world, unlike in ours, protons lack parts. As such, the simple world philosopher will have no predicates with which to pick out the properties of proton-parts. This means she will not have the vocabulary to represent our world and our world will not be represented as a possible world according to her ersatz model. Nonetheless, surely our world *is* possible relative to the simple world, and the linguistic ersatzer has therefore failed to adequately represent the possibilities. Lewis's conclusion is that we are likely in the same position as the simple world philosopher; we have no reason to think that all possible properties are instantiated here, and if they're not, we will lack the vocabulary to represent some possibilities.

Lewis accepts that while we won't have *names* for alien properties, we can speak of them by quantification.³³⁵ This suggests one way the ersatzer might respond to the problem. She might say that while the simple world philosopher doesn't have predicates for the proton-part properties in her world-making language, she can still provide a representation according to which protons have parts, and there are properties X, Y and Z had by proton-parts such that each proton-part has exactly one, and those proton-part properties are distinct from other properties, and so on. Unfortunately, Lewis argues, the ersatzer will still end up conflating possibilities because she can't describe *isomorphic* possible scenarios involving alien properties. Say that the description above accurately describes the actual world when it comes to proton-parts; there are indeed three different

³³³ Lewis, *On the Plurality of Worlds* pp.158-165.

³³⁴ *Ibid*, pp.159-160.

³³⁵ *Ibid*, pp.161-164.

properties had by proton-parts such that each proton-part has exactly one. What should we say about a world where the roles of two of the proton-part properties are switched? We can describe such a possibility, because we have names for the proton-part properties. However, the philosopher in the simple world must conflate the isomorphic possibilities because she only has the resources of quantification at her disposal. Her description, in which she says that there are three properties had by proton-parts, that are distinct from all actual properties, and so on, must be the same for both the distinct but isomorphic possible scenarios.

The problem takes a slightly different form for LMC as compared to how it arises for other forms of linguistic ersatzism. Lewis expresses the objection as though it is taken for granted that the possibility of alien properties is a modal fact, and the linguistic ersatzer has the responsibility of demonstrating that her worlds are able to accurately account for that modal fact. For LMC, the possibility or impossibility of alien properties is determined by the linguistic rules. So, in order to decide whether this objection must be taken seriously, we must first decide whether the rules do in fact allow for the possibility of alien properties. It's plausible though that the answer is that they *do* allow for alien properties, given the notion of an alien property does not seem incoherent or contradictory in meaning.

If the rules allow that alien properties are possible, it must be true at some world that an alien property is instantiated. The temptation is to allow for the possibility of alien properties by including in world sets sentences like, 'There is something that instantiates a property that isn't F, or G, or H....' and so on for all the actually instantiated predicates. However, simply adding such a sentence would render the world in question incomplete, because at least one object would not be fully described. The description as it stands does not say *which* alien property the object instantiates. However, the linguistic rules apparently cannot determine of any particular alien property that *it* is possible. If they could, they would have to provide rules of use for the alien predicate that connects its use to other predicates. Then, the property would no longer be truly alien since it would be fully specifiable using predicates that are actually instantiated. The same strategy could be used to account for worlds with more than countably many objects, but the same problem of incompleteness would arise. We could include in a maximal possibility the sentence 'There are continuum many space-time points,' but our world would be incomplete. In order to have a complete maximal possibility, we'd also need each space-time point to be described individually.

Daniel Nolan and Theodore Sider have both made suggestions about how the linguistic ersatz can allow for representations of particular alien properties.³³⁶ Both take on board Lewis's point that distinct possibilities will be conflated if we attempt to capture the possibility of alien properties simply by including sentences in our world sets that quantify over properties and describe their patterns of instantiation. Instead, they argue, we should describe worlds *together* rather than *separately*. Nolan suggests that possibilities involving alien properties can be represented using a very long Ramsey sentence that makes quantifications over worlds as well as the objects and properties within them. The sentence will have variables for worlds, objects and properties, and will specify which objects instantiate which properties at which worlds. This sentence, which Nolan calls the 'world-book', can distinguish between the isomorphic possibilities to which Lewis refers. Because worlds are described all at once rather than individually, the sentence can say that there is some property X that plays such and such a role in world w , and some property Y that plays the same role in world w_l . Sider's solution is similar. He argues that rather than constructing possible worlds separately, the linguistic ersatz should construct a single ersatz 'pluriverse' that describes worlds together. By describing the worlds together using one long sentence rather than separately using different sentences for each world, the variables for properties are bound by quantifiers that range over everything in the pluriverse, rather than simply the contents of an individual world. As a result, the sentence describing the pluriverse or world-book can say of a single property that it is instantiated by particular individuals in some worlds, and other individuals in other worlds. Finally, individual worlds can be recaptured from the world-book or pluriverse by introducing what Nolan refers to as 'dummy' names for non-actual objects and 'dummy' predicates for non-actual properties. Using these, it is possible to provide a complete description of each world individually, with worlds where alien properties play isomorphic roles distinguished by the use of different predicates corresponding to different alien properties.³³⁷

This solution ought to be attractive to LMC. The linguistic rules governing 'property' should determine in a general way restrictions on the kind of thing a property can be. Given that properties are the things picked out by predicates, the rules governing how predicates can be used will also determine the possibilities for properties. Given that worlds are linguistic, for there to be an alien property instantiated at a world according to LMC must be for there to be a possible predicate that applies at that world that is not part

³³⁶ Daniel Nolan, *Topics in the Philosophy of Possible Worlds* (New York: Routledge, 2002) pp.95–129 and Theodore Sider, 'The Ersatz Pluriverse,' *The Journal of Philosophy* Vol. 99, No. 6, (2002): pp.279-315.

³³⁷ See Nolan (ibid) pp.120-126 for details on how to abstract individual possible worlds from the world-book.

of the world-making language (for us, English). After all, if that predicate *were* part of the world-making language, it wouldn't pick out an alien property. This suggests that alien properties at worlds should be represented by LMC by predicates that are not part of English, but are permissible relative to the rules of English. Plausibly, the rules for English do more than merely specify the application conditions of particular English predicates, names and so on. They also specify how terms of various lexical categories can be used in a general way. Many of these general rules may be syntactic; they may say that a predicate can modify a noun, for example, but cannot modify a connective. The general rules of use for nouns, predicates, and so on provide restrictions on the sort of role that can be played by a member of that category in the language, and the rules that can govern a member of that category. The rules for English might say that 'F', 'G' and 'H' are permissible predicates, and 'a', 'b', and 'c' are permissible names, when the rules require 'F' to be applied where 'G' is applied, that 'H' must be applied where 'b' is applied, and so on, even if some of those predicates and names are not in fact parts of English. These general rules could be used to construct the infinitely long 'world-book' or 'pluriverse' with variables for properties, variables for objects and variables for worlds. Each property variable will correspond to a predicate-role that is permissible in English and each object variable will correspond to a name-role that is permissible in English. In some cases, we will have predicates in English that correspond to the role played. In the cases where we don't, the variables will pick out alien properties.³³⁸

Finally, note that similar resources can be used to account for the existence of possibilities in which there are descriptively indistinguishable individuals in a single world. Consider Lewis's example of two-way eternal recurrence. As Lewis says, no description will allow us to uniquely pick out an individual existing in one epoch as opposed to another. However, the world-book can at least describe this world using quantification. Say that one of the things that exists in each epoch is F, G and H. The world-book can say that at the world in question Fx, Gx, Hx, Fy, Gy, Hy and $x \neq y$. The same goes for Black's spheres. The world book can say that at the world in question there is a sphere that is round and large, and a sphere that is round and large, and that the first sphere is not identical to the second. Once again, we can introduce 'dummy names' corresponding to each of the variables, by including ' $x = a$ ', ' $y = b$ ', and so on in the world-book. Lewis argues if possible individuals are sets of predicates, we cannot distinguish between the individuals in each epoch because they will be described by the same set of predicates. However, once we have dummy names for each individual, the set

³³⁸ Note that switching to a 'pluriverse' rather than from individual words would take some considerable reworking of the semantics set out in chapter 7. I will not attempt to do so here.

associated with '*a*' for example, will include that it is not identical to *b*, and the reverse will apply for '*b*'. One concern is that the addition of dummy names might be thought to create an 'irrelevant multiplicity' of the sort that Lewis rejected. However, this objection has less force for the conventionalist ersatzer than it does for a realist ersatzer. According to LMC, sets of predicates do not merely represent 'real' possible individuals. All there is for an individual or state of affairs to be possible is for the rules to permit a description of that possibility. As such, the question of whether a description ambiguously represents more than one possibility doesn't arise; there is no independently existing possible individual that must be matched to each description.

Unfortunately, the resources provided by Nolan and Sider do not help to counter objections that arise from using English as our world-making language. Ultimately, the resources of English cannot be used to fully describe worlds with more than countably many entities. Even including extra predicates and names for non-actual objects (as suggested above) can only allow us to extend the language to include countably many predicates, names, variables and so on. As a result, we will run out of predicates for a world with continuum many properties, for example. Briefly, here are two options LMC could pursue in responding to this objection. The first option is to 'bite the bullet' and deny that there are any such possibilities. This option, however, requires the implausible commitment that the rules of English do not permit the assertion that there are continuum many space-time points. The second option is to argue that according to LMC, the rules of English are imperfect by their own standards. If the rules of English do in fact permit the possibility of worlds in which there are continuum many space-time points, those possibilities must always be incompletely described. For example, a maximal possibility could include the sentence 'There are continuum many space-time points' in its set, without including separate sentences to describe each space-time point. In order to fully account for Lewis's objections from descriptive power, LMC must develop one of these suggestions, or a new line of response, for how to deal with such infinitely large possible worlds.

8.6 Summing up

In this chapter, I have done two things. Firstly, I have evaluated the extent to which LMC is able to keep its epistemological and metaphysical promises. Secondly, I have noted some objections that might be raised against LMC and looked at avenues for reply. In some cases, how well LMC does at satisfying its desiderata is determined by how well it can answer its objections. This is particularly the case when it comes to the question of

whether an account of linguistic rules can be given that avoids commitment to primitive modality, and permits modal knowledge. While the avenues for response I have explored here are by no means exhausted, they demonstrate that the theory goes a significant way towards satisfying its empiricist and naturalistic desiderata.

CONCLUSION

Linguistic Modal Conventionalism in the Real World

Critiques of linguistic theories of modality have tended to centre on Quine's objections to the analytic / synthetic distinction and on the necessary *a posteriori*. My focus in this thesis has been on a different problem: the threat of object conventionalism and truth conventionalism. I began in the introduction by setting out the theoretical background of linguistic modal conventionalist theories in broad terms, paying particular attention to the motivations for the view. Those motivations were translated into a set of desiderata that a successful version of the theory should aim to satisfy: empiricism, reductionism, and epistemological and metaphysical naturalism. My aim in the introduction was to demonstrate that if a plausible version of LMC could be established it would be an attractive theory for those inclined towards empiricism and naturalism, doing better on a number of fronts than prominent rivals.

In chapter 1, I described the historical variants of LMC in detail, as well as the major objections that those views faced. The purpose of chapter 1 was to provide greater clarification on the virtues and vices of the theory by placing it in its historical context. I argued in chapter 1 that the Quinean and Kripkean objections that motivated the rejection of LMC are not insurmountable. In chapter 2, I described two modern theories that have aimed to overcome those objections: Alan Sidelle's and Amie Thomasson's. I noted that while both theories include promising responses to Kripkean arguments, more work was required in order to fully account for the necessary synthetic. I ended chapter 2 by setting out parameters for LMC. Specifically, a theory must meet two criteria to qualify as linguistic modal conventionalism: it must deny that there is any non-linguistic metaphysical modality, and it must take all metaphysical modal truths to be determined in a non-trivial way by linguistic rules.

My project in chapters 3 – 5 was to demonstrate that object conventionalism and truth conventionalism are genuine threats to LMC. In chapter 3, I described two arguments that show that conventionalism about the modal features of objects leads to conventionalism about the objects themselves. The first argument connected the modal properties of objects to their conditions of existence, identity and persistence. If what's possible for an object and what's not possible for an object is a matter of convention, the conditions under which the object can exist and persist are also conventional. However, conventionalism about such conditions leads quickly to conventionalism about which objects in fact populate the world. The second major argument from chapter 3

demonstrated that the combination of conventionalism about modal properties and non-conventionalism about objects leads to a position in which a single object can have incompatible modal properties. I argued that Sidelle's proposed solution of embracing object conventionalism is unattractive for LMC, particularly in light of its empiricist and naturalistic motivations.

In chapter 4 I examined whether Amie Thomasson's work could be used to construct a version of LMC that avoids the problematic commitment to object conventionalism. I argued that it cannot, and presented a dilemma to help make that case. If we accept that objects have modal features, linguistic conventions can play either a weak or a strong role in determining truths about them. The weak role is simply to help fix the reference of our referring terms such that they pick out the right objects with the right modal properties. Such a view does not qualify as a genuine linguistic conventionalist theory however; it fails to meet the conditions for LMC set out in chapter 2. On the other hand, the strong role for convention is to make it the case that objects have the modal features they do. This position meets the conditions to qualify as a version of LMC, but it is committed to object conventionalism for the reasons outlined in chapter 3.

Chapter 5 developed a structurally parallel dilemma in application to the modal status of propositions. If we take for granted that propositions have modal truth conditions, conventions can play either a weak or a strong role in determining the truth of sentences that express such propositions. On the one hand, the weak role for linguistic conventions is simply to determine which proposition is expressed by which sentence. This position once again fails to meet the conditions to qualify as a linguistic conventionalist theory of modality. On the other hand, a stronger role for convention is to make it the case that propositions have the modal statuses they do. I provided two arguments to show that this position leads to a problematic conventionalism about non-modal proposition truth. These arguments paralleled those provided in chapter 3 that led from conventionalism about modal properties to conventionalism about objects. Firstly, there is a tight connection between the modal consistency relations between propositions and their truth conditions. If it is a matter of convention that proposition p is inconsistent with proposition q , it is matter of convention that the falsehood of q is a condition of p 's truth. However, conventionalism about truth conditions leads quickly to conventionalism about whether a proposition is in fact true. Secondly, combining conventionalism about the modal statuses of propositions with non-conventionalism about propositions themselves leads to the possibility that a single proposition can be both necessary and contingent.

Chapters 6 and 7 were devoted to providing a version of LMC that does not fall prey to the objections set out in chapters 3 – 5. Chapter 6 argued that the way to avoid these problems is to do away with the problematic ontology. Specifically, LMC should deny that objects are entities that come with modal conditions of existence, identity and persistence; it should also deny that propositions are entities that come with modal conditions of truth. In order to explicate this view, I provided an account of the metaphysics of objects and propositions LMC ought to endorse. I argued that LMC should take objects to be spatiotemporally-extended entities that instantiate non-modal properties but lack modal properties. And, I argued that propositions should be treated as constructs out of objects and non-modal properties. I finished chapter 6 by providing an account of how reference is fixed in a world without modal features.

Chapter 7 gave a semantics for modal sentences compatible with the metaphysical picture described in chapter 6. I argued that LMC should support a version of linguistic ersatzism according to which possible worlds are construed as Ramsey sentences expressed in a fragment of ordinary English. Which Ramsey sentences qualify as possible worlds is entirely conventional on the view described; it is determined by the linguistic rules governing English. I argued that the framework of two-dimensional semantics can be used to account for the existence of synthetic necessary truths and contingent analytic truths. What qualifies as a maximal consistent set of sentences in English is partly determined by the nature of the actual world. Then, truth conditions for both *de dicto* and *de re* modal truths can be given in terms of the truths at conventional maximal possibilities.

Finally, chapter 8 revisited the desiderata established for LMC in the introduction, and provided brief responses to a number of objections. The prospects for LMC to meet its desiderata are promising. Challenges arise for the theory when it comes to demonstrating its ability to be genuinely reductionist. To achieve this goal, the linguistic rules governing terms must be spelled out non-modally, and the theory must be able to show that it need not rely on modal dependency relations in a circular way. A further challenge for the view is to demonstrate that we have the knowledge of linguistic rules required to adequately explain our modal knowledge. Nonetheless, there are promising lines of response to each of these objections.

The positivist theories described in chapter 1 treated necessity as the same property as analyticity. Since analyticity is a feature of sentences, this traditional approach has trouble explaining ‘worldly’ modality such as the modal features of objects and propositions. Many authors, following Quine, have argued that the role of convention in

truth is trivial only; conventions are for determining what our linguistic expressions mean, they suggest, not for founding truths. In this thesis, I have looked at the other side of the coin by examining what happens if we treat the world as having modal features that really are endowed upon it by convention. My argument has been that opting for that position means committing to a far more widespread conventionalism than conventionalism about modality; if modality is both worldly and conventional, ordinary objects and non-modal truths depend on our conventions too.

If LMC is to be a viable theory of modality, it must walk a tightrope between ontological conventionalism on the one hand and ‘trivial’ conventionalism on the other. I have argued that the way to achieve the requisite balance is to confine modality to the realm of language: those who are suspicious of modal features of propositions or objects for empiricist and naturalistic reasons ought to reject those features altogether. What’s more, doing so need not mean giving up on modal truths; the truth of *de dicto* and *de re* modal sentences can be determined directly by the linguistic rules that govern terms. I have argued that constructing possible worlds on the basis of linguistic rules represents a good strategy for providing truth conditions for modal sentences. One way of achieving this is provided in chapter 7. This method also helps avoid a number of other pitfalls for LMC, including the contingent analytic, the necessary synthetic and the treatment of iterated modalities. If LMC can avoid trivial conventionalism on the one hand and widespread ontological conventionalism on the other, it has the potential to do better than many of its rivals. In chapter 2, I described a number of deflationist and conventionalist theories of modality. The deflationist theories of Sider and Cameron avoid ontological conventionalism, but take modal properties to be real, convention-independent features of the world. On the other hand, Goswick and Einheuser’s theories treat both objects *and* modal properties as conventional. The strategy for developing linguistic modal conventionalism I have described in this thesis promises the empiricist that she can have her cake and eat it too; conventional modal truth need not preclude us from occupying the real world.

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