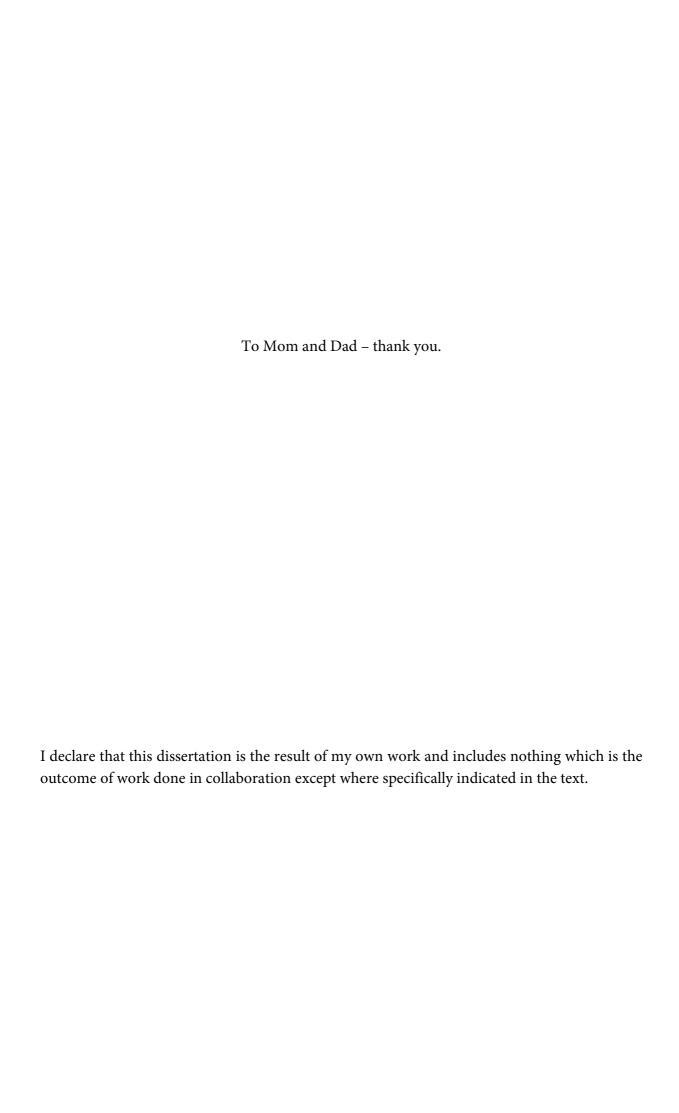# Essential Properties:
Analysis and Extension

Nathan Wildman

Girton College, University of Cambridge, September 2010.
This dissertation is submitted for the degree of Doctor of Philosophy.

To Mom and Dad – thank you.

I declare that this dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except where specifically indicated in the text.

Abstract

Essential Properties: Analysis and Extension
Nathan Wildman

This thesis is an attempt to understand the essential properties of concrete objects. The underlying motivation of this investigation is the hope that by understanding essential properties we will be in a better position to construct a satisfactory metaphysical account of the things that populate the world around us.

The initial chapter introduces two questions that this thesis will attempt to answer. The first, 'what *are* essential properties?' is the Analysis Question. Answering it occupies chapters two through five. The second, 'what essential properties *are there*?' is the Extension Question. This is dealt with in the final three chapters.

Chapter two provides the beginnings of an answer to the Analysis question, introducing the modal analysis of essential properties. Eight ways modality and essentiality might be related are raised. Of these, two entail the modal analysis. By eliminating the undesirable six, justification for the modal analysis could be provide. In the remainder of the chapter, five of the six are quickly dismissed.

Chapter three is an examination of Fundamentalism. Focusing upon the views of E.J. Lowe and Kit Fine, I argue that there are modal facts which cannot be grounded upon essence facts and that certain modal concepts are employed in the construction of the Fundamentalist account. Consequently, Fundamentalism cannot succeed in grounding modality, and therefore cannot be the correct way to understand essentiality. This concludes the argument by elimination, thereby justifying accepting the modal analysis.

Chapter four explores the modal analysis. After distinguishing between various formulations, it is argued that an existence-dependent version of the modal analysis is best. An objection by McLeod concerning contingent existence and essential properties is then dealt with, setting the stage for a more troubling objection from Kit Fine. Fine argues that all forms of the modal analysis 'get the essential properties wrong', relying upon a series of example properties, including the relation between Socrates and {Socrates}. After breaking down Fine's argument, the remainder of the chapter concerns examining and dismissing several bad responses to Fine's argument, including attempts by Della Rocca and Gorman.

In chapter five I advance a new response to Fine which centres upon appealing to the sparse/abundant property distinction. Incorporating this distinction into the modal criteria, I demonstrate that a form of the modal analysis can avoid Fine's attack. I then conclude that this suitably modified modal analysis is an excellent answer to the Analysis Question.

The remaining three chapters are part of an attempt to answer the Extension Question. Chapter six critically examines Wiggins' sortal essentialism, the position that objects are essentially instances of their sorts. After rendering Wiggins' essentialist argument, I demonstrate that it is either inconclusive or question begging. As such, there is no reason to accept sortal essentialism.

Chapter seven looks at the Byzantine arguments concerning origin essentialism. It is shown that these arguments are either inconclusive - in that they do not entail origin essentialism - or assume origin essentialism at the out-set, leaving us little reason to accept origin essentialism.

Chapter eight examines Mackie's minimalist essentialism. After laying out the position, I then examine a series of objections it faces. In particular, I show that even if we accept minimalist essentialism, it would not help us answer the Extension Question. As such, we have no reason to do so.

I conclude that essential properties can best be understood as those sparse properties of an object which satisfy a specific modal criterion, as demonstrated in chapter five. However, the number of properties that satisfy this criterion might be quite small, as indicated by the results of chapters six through eight. This result is a mixed one for the essentialist: while we now know what essential properties are, it seems like we lost them all somewhere along the way.

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Two Questions: Analysis & Extension – Chapter 1

The use of essential properties has spread like an epidemic among modern metaphysics. There was a period of time when essentialism was in remission – perhaps even on the verge of complete eradication – but then Kripke and a slew of others in the 1960's and 70's revived it, and it has been gaining strength ever since.   Now, it is almost impossible to find an issue of a metaphysics journal that doesn't have at least one article that relies upon essential properties. They have infected everything: essential properties have been used to provide necessary and sufficient identity conditions for objects, to ground the laws of nature, to account for meaning and analyticity, to solve the Julius Caesar problem, to characterize the realism/anti-realism debate, to explain the notion of ontological dependence, to analyse and even ground all the modal truths.[1]

Yet, for all of this widespread use, essential properties still remain fundamentally mysterious. That a concept that is so central to metaphysics is still so poorly understood is, to be frank, a shame. It is the aim of this study to, in some small way, make right this problem by addressing some issues vital to understanding essential properties.

In particular, two questions that must be dealt with by would-be essentialists remain unanswered. The first involves providing an explanation as to what it *means* for a property to be essential, i.e. specifying the necessary and sufficient conditions for being an essential property. In a straightforward question, this is, 'What *are* essential properties?' I call this the *Analysis Question*.

And while an answer to this question tells us what it is for a property to be essential, it does not – or at least need not - tell us *which* properties are essential. If we are to fully understand essential properties, we need to both supply an analysis and answer the question, 'What essential properties *are there*?' This is the *Extension Question*.

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[1] See Wiggins [2001], Forbes [1985], Bird [2007], Fine [1995 & 2010], Hale & Wright [2001], Jenkins [2005], Lowe [2006] and Correia [2005], and Fine [1994, 2005] respectively.

Most essentialists concern themselves with issues involving specifying an extension of essential properties, while almost none discuss essential analysis. For example, there are lengthy debates about Socrates' essentially having the origin that he does, but little literature on what it would take for a property to be essential to Socrates. In this way, the Extension Question gets a lot of press compared to its Analysis cousin. However, it if we do not know what essential properties are, then discussions about what essential properties there are seem ill-founded. In this way, answering both questions should be a primary concern for modern metaphysics – hence this study.

The relation between the two questions

These two questions have an interesting relationship. In particular, what is strange is how answering one affects answering the other. To use the case of modality, two modal theorists can both accept a possible worlds analysis and thereby agree upon the necessary and sufficient conditions for a modal assertion's truth, but can disagree about what modal truths there are. One might hold that there are no worlds where Socrates is a chicken, while the other that there is such a world (if not more than one). Both agree on the analysis, but disagree about the facts. So in one sense, answers to the questions are likely to be distinct.

But, in another sense, there is a quite strong relation between an analysis and an extension: while nothing about the analysis of essential properties *necessarily* determines the extension, some analyses dictate certain extension answers. Here again the comparison with the possible worlds analysis is fruitful: if we accept the Lewisian analysis of modality, it is not possible for there to be an empty world, devoid of any spatio-temporally located objects.[2] In this way the (Lewisian) analysis entails a certain (modal) extension. And it goes the other way too: if we discover that it is in fact possible for there to be an empty world, then the Lewisian analysis cannot be correct.

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[2] See Lewis [1986: 73]. Cf. Rodriguez-Pereyra [2004] and Efird & Stoneham [2005].

The thought here is that analyses can be at least and at most *partly* revisionary: once we accept an analysis, it might then lead us to reject some of our pre-theoretic beliefs about an extension, but analyses cannot *completely* overturn everything we thought to be in the extension of the concept analysed. A certain amount of coherence with pre-theoretical beliefs is necessary in order for us to accept the account as an analysis of our concept, rather than as an attempt to simply change the subject.

This lesson applies equally to essential properties: what necessary and sufficient conditions we specify will partially determine what extension we accept, and what extension we pre-theoretically accept will partially determine what necessary and sufficient conditions we specify. In this way, what we think about extensions will reflect our analysis and *vice versa*.

So, the essentialist owes us a story about what being essential is, and this story had better not clash too much with our pre-theoretic beliefs about what essential properties there are – just like how the essentialist owes us a story about what properties are essential, which had better not clash too much with what we think essential properties are. And even if we accept this inter-relation between the answers to the two questions, an account of what essential properties *are* is one thing and an account of what essential properties *there are* is another. We should not run these two questions together. To that end, I will handle the two distinctly. Part I of this thesis concerns answering the Analysis Question; here I give necessary and sufficient conditions a property must satisfy if it is to be an essential property. Part II deals with answering the Extension Question, and in particular with *sortal*, *origin*, and *minimal* essentialism.

Having now delineated the two questions I will answer, the next section discusses how I will go about doing so.

Metaphysical Methods

Let us understand the *ideology* of a theory as the arsenal of concepts which are taken to be well-understood, yet are not or cannot be analysed or defined within the theory itself.

Meanwhile, the *ontology* of a theory is the collection of entities the theory takes to exist.[3] One move generally available is, in Lewis' words, to 'pay for our ideology in the coin of our ontology' – postulate some new entity that obviates the need to appeal to an ideological primitive. The alternative is also available: increase the number of primitive concepts and cut down on the number and variety of entities we are committed to.

If we follow Lewis in going for ideological simplicity via ontological plenitude, we run the risk of facing an objection that instead being powerful tools for solving problems, the postulated entities are just ontology invented to make deep problems vanish. Similarly, if we increase our ideological primitives while shaving off ontological commitments, we can be accused of postulating *ad hoc* ideology. So what to do?

First, we must realize that choosing between competing metaphysical proposals is not a process we engage in by first sitting down in our armchairs and deducing from first principles *a priori*; we also do not make observations and read our metaphysical theory off the empirical observations. Instead, we look at what competing metaphysical theories say, and we determine which theory we think is the best. In some sense, the manner in which we determine which theory is *better* is analogous to how we determine the best scientific theory.

When deciding between scientific theories, empirical data provide constraints: given a certain set of data, a theory is better if it better fits the data. So if our empirical data set tells us A, B, and C, a scientific theory that entails A and B is better than one that entails A alone – and an even better theory would confirm all three. Metaphysics is similar, though what provides the theoretical constraints for our metaphysical theories is different.

We know a lot. Some of this knowledge consists of, to borrow the phrase from Armstrong, 'Moorean truths' – what we might instead call *common sense facts*. Armstrong suggests that 'a good rough test for the members of this class is that it is almost embarrassing to mention them outside of the context of philosophy' [2004: 27]. These Moorean truths

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[3] This Quinean understanding of ontology has recently come under fire from metaphysicians who would suggest that ontological commitment should be understood in terms of truthmakers, e.g. Cameron [2008] and Heil [2003]. Such an understanding is fundamentally flawed, though a discussion of why is beyond the scope of present concerns.

provide the constraints for our metaphysical theories, like the empirical data for scientific theories.

Two caveats. First, such truths are imprecise. The sun rose this morning. This is a Moorean truth. What does it imply? Read as implying that the Sun orbits the Earth, it is false, as saying something about the phenomenology of such events, tell us nothing metaphysically interesting. Second, Moorean truths are not impervious to revision. We accepted as a Moorean truth that the Sun orbited the Earth. Reflection and experience led us to reject this; so even the Moorean truths are not indomitable. Despite these, the Moorean truths are part of our metaphysical bedrock. This means that while it might be the case that theorizing will eventually lead us to alter them, they are where we start – and, we have to start somewhere.

There are other theoretical virtues too: explanatory power, such that a theory accounts for a wide range of phenomena; simplicity, with fewer primitive elements and complications; unification, such that the theory brings together disparate realms of study under a single theory; and explanatory cooperation, in that a theory tells us why other theories work as well.

The theory that is the most virtuous *on balance* is the one that we think is the best. At the end of the day, we look for a metaphysical theory that makes true as many of our pre-theoretical beliefs as possible. The more pre-theoretical beliefs a theory confirms, the more we like the theory. At the same time, we also look for a theory that maximizes the theoretical virtues. Occasionally, these two desires come into conflict. When this happens, we have to weigh up the advantages of favouring theoretical virtuousness over being intuitively compelling or *vice versa*. It is frequently a give and take between the two poles, and it often becomes quite messy. But this is how things are done, and it is no less a worthwhile endeavour because of it.

So I will employ this method – comparing and contrasting the theoretical virtues of a theory along with its fit with our pre-theoretical beliefs – in this investigation. This is especially relevant in my effort to provide an adequate answer to the Analysis Question.

Assumptions, Clarifications, and Distinctions

We've now marked off the two questions this thesis will answer – that of Analysis and Extension – and said something about how we are going to go about answering them. Yet before I begin answering the two questions regarding the nature of essential properties, I would like to tie up some loose ends, by specifying a few assumptions and distinctions I will be relying upon.

The first point concerns terminology. Throughout this study, I take 'entity' to be an ontologically neutral term that refers to anything that might be an object of quantification; so Cicero, the number 7, the property *being green*, and {Socrates} are all entities. Meanwhile, 'object' denotes the *concrete* entities; Cicero is an object, while 7, being green, and {Socrates} are not. To refer to non-concrete entities, e.g. 7 and {Socrates}, I use the standard 'abstract object'. Meanwhile I refer to entities like *being green* as 'properties'.

There are of course lengthy debates about how to draw the distinction between the concrete and the abstract objects, and whether the distinction between properties and the other types of entities is coherent.[4] Such debates are interesting, but beyond the scope of the present study; I simply assume that there are distinctions to be made, though for ease I attempt to cite only entities that are clearly of one category.

When it comes to referring, my convention is to italicize the names of properties, such that '*being green*' refers to the property that all green things share. This applies equally to relations. I use bold when it comes to the names of kinds; thus '**tiger**' refers to what all tigers are, '**human**' to what all humans are, etc. If I need to refer to a fact, I bracket it like so: '<Socrates is wise>' picks out the fact that Socrates is wise.

Another point depends upon distinguishing between *Objectual Essentialism* and *Kind Essentialism*. Objectual Essentialism concerns the essences and essential properties of individual entities, e.g. particular tables, chairs, people, etc. Meanwhile, Kind Essentialism is

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[4] See Hale [1987] and Ramsey [1925].

concerned not with the essential properties of individuals, but rather of kinds themselves. The distinction can be made clearer by example:

(1) Ajax essentially is a rational animal.

(2) **Gold** essentially has the atomic number 79.

Obviously, (1) asserts something about the nature of an object, i.e. that the property *being a rational animal* is essential to Ajax. Contrast this with (2), which says nothing about any individual, but instead something about a kind – namely, that it is true of the kind **Gold** that it has the property *having the atomic number 79* essentially. This difference, between the subjects of the essential property ascriptions, constitutes the distinction between the two types of essentialism.

I will here concern myself only with Objectual Essentialism. My efforts to answer the Analysis and Extension Questions will therefore be restricted to analysing and determining the extension of the essential properties of objects themselves and not of the kinds that apply to objects. Kind Essentialism is an interesting area, but I set it aside for the duration of this study.

Finally, I wish to make clear what assumptions I am making for the sake of the study. In particular there are four. The first is that I assume that properties are mind-independent entities which would have existed even if we did not. In this way, I distinguish between predicates, which are linguistic items, and the properties they refer to, that are metaphysical entities. I will not take sides regarding what kinds of things properties *are* - they might be universals, tropes, classes, or brute resemblances, for all that matters to me. Indeed, what I go on to say can be re-cast nominalistically, paraphrasing expressions that apparently quantify over essences into locutions relying on expressions like, 'it is essential to X that Φ'.[5]

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[5] This issue will come up in Chapter 3, regarding the Fundamentalist's anti-reification principle.

A second assumption is that of modal realism – or, perhaps in order to ensure that it is not confused with David Lewis' infamous plurality of worlds thesis, it might be better to term my assumption modal *cognitivism*. This means that I take modal predications to be truth-apt, and to be doing something like predicating properties. Furthermore, a modal sentence is not an expression of a state of mind, a belief, a desire, or any sort of mental attitude. It is a description of reality, and it is true of false depending upon what is out there in the world.

My third assumption is essential realism (or, again, essential cognitivism). Just like with modal predications and assertions, I take essentialist claims to be truth-apt, and to be describing something about the world itself. So the truth of essentialist claims are not products of our way of talking.

This leads directly into my fourth and final assumption which is that of the 'description independence' (as Mackie calls it) of essential and modal discourse. Quine says that

> An object, of itself and by whatever name or none, must be seen as having some of its traits necessarily and others contingently, despite the fact that the latter traits follow just as analytically from some ways of specifying the object as the former traits do from other ways of specifying it. [1961: 175]

He found this understanding of necessity (and, by extension, essentiality) utterly baffling, yet I, following Kripke, embrace it. When we link up the description independence assumption with the assumption of essential realism, we get what I call 'absolute essentialism', according to which the essential properties of an object hold of it independently of our referring to the object, and they do so objectively.

With these assumptions and clarifications made, it is time to press on and answer our two questions. First up, in Part I, is the Analysis Question.

Part I: Answering the Analysis Question

In this part of the thesis, I answer the question, 'What are essential properties?' which I have called the Analysis Question. Answering this involves specifying necessary and sufficient conditions a property must satisfy in order to be an essential property.

As I mentioned in the first chapter, there is not much literature that deals directly with specifying or constructing an analysis for essential properties. This is partially because there is an analysis which is so widely accepted that it has become the standard way to understand essential properties. This is the *modal* analysis of essential properties. It originates in Aristotle, but it found a home in the Kripkean semantics for modal logic. As this way of doing modal logic became more popular, so too did the modal analysis of essential properties.

Here, I introduce the modal analysis by looking at Quine's objections to quantified modal logic. These objections only make sense if we, following Quine's lead, understand essential properties as an object's *de re* necessary properties. While Quine find such concepts repulsive, modern metaphysics has embraced *de re* modality – and thus has also embraced this modal analysis of essential properties.

The problem is that next to no one ever *justifies* the modal analysis – many metaphysicians accept it, but hardly any give any reasons why they do so. To correct this, a major focus of the first Part of this thesis is offering some motivation for accepting the modal analysis. This takes the form of an argument by elimination. Granted that there is a relationship between modality and essentiality, there are eight ways that they can be related. Two of these entail the modal analysis, which means that six do not. In Chapters Two and Three, I show how these six possibilities are all objectionable; either they face insurmountable difficulties, or there are strong methodological reasons for rejecting them.

One possibility that receives a substantial amount of attention (indeed, the whole of Chapter Three), is what I call Fundamentalism; this is the position according to which modality can be analysed in terms of essentiality. I give Fundamentalism more air time

because, within the past fifteen years, some essentialists have begun to embrace it – in particular, Kit Fine and E.J. Lowe have championed this view. With a bit of work, I show that Fine and Lowe's accounts both fail, because (a) they cannot account for all the *de re* and *de dicto* modal facts, and (b) they must rely upon hidden modal notions to make sense of their understandings of essence.

Via my argument by elimination, I offer the missing justification for the modal analysis: we should accept it because the relation between essentiality and modality entails it. Yet accepting the modal analysis still does not make it clear. In particular, there are questions about what sense of necessity is involved, and issues regarding the essential properties of contingent existents (i.e. can an object have a *de re* necessary property at a world where it does not exist?). I deal with these issues in Chapter Four, demonstrating that the best form the modal analysis can take is an existence-dependent formulation, according to which an essential property is a property that an object metaphysically necessarily has in every possible world where it exists.

This existence-dependent modal analysis faces a major objection, however. Kit Fine, in his [1994], attempts to show that there are some properties an object has necessarily but not essentially. If Fine is correct, the modal analysis entails the wrong extension and must be rejected.

Responding to Fine is the topic of Chapter Five. There, I argue that, by supplementing the existence-dependent modal analysis with a sparse property condition – where sparse properties are understood in the manner suggested by David Lewis in his [1983] – we can show that Fine's objections fail.

This sparse modal analysis of essential properties is what I offer as the answer to the Analysis Question. It has the support of the argument by elimination from Chapters Two and Three, it relies upon the clarifications regarding the formulation of the modal analysis made in Chapter 4, and it is the best way to respond to Fine's objection, as proven in Chapter 5.

Essence, Modality, & Argument by Elimination - Chapter 2

In this chapter, I begin answering the Analysis Question. First, I suggest that, in his efforts to undermine quantified modal logic, Quine has inadvertently provided us with what we are looking for, in the form of a modal analysis of essential properties. This analysis fits well with our pre-theoretic intuitions about the nature of essential properties. Consequently, it is a decent starting place for answering the question.

This analysis requires that essentiality and modality be related in a certain way, however. Unfortunately, there are eight possible ways the two might be related and only two of them are compatible with the modal analysis. To offer some support for the modal analysis, I suggest that we eliminate the unfriendly positions; for once they are eliminated, we will have a solid reason for developing the modal analysis further. The beginnings of this argument by elimination take us to the end of this chapter.

Quine, QML & 'invidious essentialism': the modal analysis of essential properties

Quine famously didn't like modal logic. He didn't like propositional modal logic, mostly because of worries about its ties to analyticity, but he had an even stronger reaction to quantified modal logic – this he absolutely abhorred. His primary objection was that, since it embraces what he called the third grade of modal involvement (where modal operators can be used in an open sentence containing free variables and then subsequently be bound by quantifiers), QML is thereby committed to an 'invidious Aristotelian essentialism'.[6] This Quine found unpalatable.

While Quine took the essentialist commitment to be a reason to reject QML, I aim to exploit Quine's conclusions, for they imply two facts relevant to this present study. First, the objection shows that modality and essentiality are fundamentally related notions. This gives

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[6] As I present it, we go through Quine's other objection – that QML violates conditions regarding substitution of co-referring terms – to get to the invidious essentialism objection. It should be clear that these two can come apart, though Quine himself regularly conflated them.

us our launching pad for answering the Analysis Question: look at how essential properties relate to modal properties, and see if there are any clues regarding essential properties' natures. This links directly into the second point: in his objection, Quine equates essential properties with *de re* necessary properties. Clearly, this is an answer to the Analysis Question – maybe not a perfect one, but a decent beginning. To that end, what this section aims to do is go through Quine's objection to QML and show how it leads to this modal analysis – once we see how to get there, we can access the viability of such an analysis.

In his objection, Quine first argues that modal contexts are, like quotation, referentially opaque. Having done so, he introduces the first grade of modal involvement, where modal operators are like quotation marks in that they can attach to the *names* of sentences, but not to sentences themselves. Further grades involve employing the modal operators in more substantial ways: the second grade allows for modal operators to attach to sentences, while the third grade allows for modal operators to be combined with open sentences that can then be bound by quantifiers. It is this third and final grade that entails the essentialist commitments.

Define a context as referentially opaque iff, taking a particular statement within the context, substituting in a co-referring term or phrase within the statement changes the truth value of the statement [Quine 1961: 142]. Such failure of co-referential substitution occurs when a word or phrase is not being used to directly or strictly refer. Contrast this with referentially transparent contexts where co-referring terms can be substituted without changing the truth values of statements, e.g.

(C) Cicero was a great orator

is true. And, substituting in a co-referring name

(T) Tully was a great orator

the truth value remains the same. Compare this to

(C') 'Cicero' contains six letters

which is true, and

(T') 'Tully' contains six letters

which is false; this is despite the fact that we can derive (T') from (C') by substituting into (C')
a co-referring term for Cicero.

Now, if the truth values of sentences change when we substitute co-referential terms,
modal contexts are referentially opaque. This opacity, according to Quine, implies that modal
logic forces us to accept the implausible thesis that the nature of an object shifts depending
upon how we pick it out. But are modal contexts opaque? Take the case of the number 9; it is
straightforward that necessarily, the number 9 is greater than the number 7, i.e.

(1) □ (9>7)

Further, it seems entirely contingent that the number of planets in the solar system be greater
than seven: nothing *a priori* entails that the number of planets orbiting the Sun must have
been larger than seven. Ergo

(2) □ (the number of planets>7)

is false.

The problem is that (2) can be obtained from (1) since both '9' and 'the number of planets' are co-referring terms for the number 9.[7] So there is one object, the number 9, with two co-referring terms, '9' and 'the number of planets', and the truth value of a modal sentence differs depending upon which term we use to refer to the object. This violates Quine's indiscernibility of identicals principle, for it appears there are facts about 9 which are true under one referring term but not under another. So modal contexts are, like quotation, referentially opaque and not directly or strictly referential.[8]

This need not lead us to reject modal logic, however; after all, we still accept quotation as a valuable tool within our linguistic arsenal. Consequently, sticking to this thought, we might apply the same interpretation to modal contexts as we do to quotation contexts, and allow modal operators to be *semantic* predicates attaching to the names of sentences, e.g.

(3) □'9>7'

This is to accept the first 'grade' of modal involvement. It has no essentialist consequences.

Yet, perhaps ensnared by the beauty of propositional modal logic, you might extend the applications of modal operators, allowing them to not just be attached to the names of sentences, but also to be combined with complete sentences themselves to form new sentences. This *second* grade of modal involvement permits the construction of sentences like

(4) □ (9>7)

Such use commits one to *de dicto* necessity – and while Quine was not happy with this level of involvement, having a selection of objections to it (concerned mostly with its relation to analyticity), we might think that there are responses to these objections such that this second grade of commitment isn't that bad.

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[7] For the sake of argument, I here ignore the fact that Pluto is no longer counted as a planet.
[8] Many authors have responded to Quine on this point: see Kaplan [1975].

Regardless, the main thrust of Quine's objection comes only when we, caught up in the fervour of our modalising, extend the application of modal operators again, accepting that they can be combined with open sentences containing free variables that are subsequently bound by quantifiers. This is to embrace the *third* grade of modal involvement, and permits the construction of sentences like

(5) (∃x) □ (x>7)

which asserts that there is an object *x* that is itself necessarily greater than 7.

The problem with the third grade of modal involvement, according to Quine, is that it leads us into the 'metaphysical jungle of Aristotelian essentialism'. To show why, Quine defines Aristotelian essentialism, though he does so in two ways. First, in his [1953], he defines it as

> The doctrine that some attributes of a thing (quite independently of the language in which the thing is referred to, if at all) may be *essential* to the thing, and other accidental. E.g. a man ... is essentially rational and only accidentally two-legged and talkative, not merely qua man but qua itself. [1953: 173-4, my emphasis].

Now this position doesn't seem to fall out of accepting the third grade, since nothing in using modal operators in certain ways obviously tells us anything about *essential* properties. Yet when we look at the other definition of Aristotelian essentialism Quine offers, we can see the connection; in his [1961], Quine states that Aristotelian essentialism is committed to the thought that

> An object, of itself and by whatever name or none, must be seen as having some of its traits *necessarily* and others *contingently*, despite the fact that the latter traits follow just as analytically from some ways of specifying the object as the former traits do from other ways of specifying it. [1961: 155, my emphasis]

Now *this* definition implies that Aristotelian essentialism amounts to the 'invidious distinction' that some properties of an object are *de re* necessary while others are not. Since the third grade of modal involvement is how one would express *de re* necessary properties it does in fact appear to be entailed – because QML is the logic of such expressions, this essentialism falls out of QML. For this reason, Quine concludes that '…essentialism should be every bit as congenial to [the champion of quantified modal logic] as quantified modal logic itself' [1961: 182]. Of course, because he cannot make sense of taking some properties of an object to be necessary and others as merely contingent (independently of how the object is referred to), Quine rejects QML.

This gives us Quine's objection: accepting the third grade of modal involvement entails accepting *de re* necessary properties. These cannot be made sense of, so one should not accept the third grade of modal involvement. Because QML is how we would express *de re* necessary properties, it should be rejected. More importantly, this also gives us something to go on regarding the analysis of essential properties. Note the two definitions of Aristotelian essentialism I mentioned above; therein, Quine implicitly equates essential properties with *de re* necessary properties. What this means is that Quine (of all people) offers us an answer to the Analysis Question: a property Φ is an essential property of object x iff Φ is a *de re* necessary property of x.

This *modal* analysis of essential properties is taken up by the critics of Quine. For example, Marcus argues that, *contra* Quine, QML accommodates but is not committed to essential properties. This is because, according to Marcus, no irreducible essentialist truth is a logical consequence of the axioms and rules of (her preferred version of) QML [1993: 229];[9] in other words, while Marcus' quantified modal logic could be used to *express* essentialist commitments, it is not in any way necessarily *committed* to there being any essential

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[9] See Marcus [1967 & 1971].

properties. This tempers Quine's conclusion that accepting QML entails accepting essentialism.

Further, in a related series of papers, Parsons extended Marcus' results, proving that there are some models of QML beyond Marcus' preferred version which are consistent with taking as false all instances of essential predication for *n*-adic predicates [1971]. This entails that there is at least one version of QML which is not committed to any essential predication – and therefore that QML is not necessarily committed to essentialism. Of course, Parsons also proved that there are some models of QML which are consistent with the truth of some essentialist claims, so he did in fact leave open the connection between the two.[10]

We should be clear what these results actually mean: Marcus and Parsons have shown that anyone who accepts some form of QML isn't necessarily committed to the *truth* of any essentialist predication, though they are committed to its *meaningfulness*. For while quantified modal logic can be neutral with respect to the truth of essentialist predication given that 'models with truths of the essentialist kind … go beyond the purely logical necessities' such that 'extra assumptions …would seem to have to be imported' [Marcus, 1995: 230], quantified modal logic

> cannot be neutral concerning the meaningfulness of essentialism, for quantified modal logic simply is that symbolism within which essential sentences are formulable. … in short, quantified modal logic is committed… to essentialism – it is committed to the meaningfulness of essential sentences. [Parsons 1971: 84]

Framing this in terms congenial to the present discussion, while QML is not committed to the truth of any ascriptions of an essential property and so can remain neutral regarding essential property *extension*, QML is committed to the expressability of essential property ascriptions. Accepting QML entails accepting that one could make sense of essential property predication, according to Marcus and Parsons.

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[10] See McKay [1975].

So QML's commitment to the meaningfulness of *de re* necessary predication implies a commitment to the meaningfulness of essential property predication. Thus the payoff of the results of Quine, Marcus, and Parsons is, for my purposes, two-fold: first, it seems there is a relation between modality and essentiality. Knowing the nature of this relation will take us a long way toward knowing what essential properties are. Second, all three accept the modal analysis of essential properties, according to which being a *de re* necessary property is both necessary and sufficient for being an essential property. At first glance, this analysis looks like an attractive one.

Does the modal analysis fit our pre-theoretical ideas about essential properties?

Of course, such an analysis is acceptable only if it matches up with our pre-theoretic beliefs about essential properties. Does it? First, as Fine notes,

> ...we have an informal way of saying that an object essentially has a certain property. We say 'the object must have that property if it is to be the object that it is.' Somehow, this form of words manages to convey what we wish to convey. [1994: 4]

Clearly, this informal characterization of essential properties implies that being necessary is a central part of being an essential property. More importantly, if essential properties are *de re* necessary properties, this informal characterization makes sense: *de re* necessary properties are properties that objects *must* have, exactly as the informal characterization suggests essential properties are. So that is a point in the modal analysis' favour.

Additional support can be seen when we consider the applications that metaphysics put essential properties to. In particular, suppose essential properties fix the necessary identity conditions for objects: accepting this already commits us to the idea that essential properties are *de re* necessary to an object. This too seems to gesture towards the modal analysis.

Further, take our everyday language usage; most uses of 'essential' conform to what we would expect if essential properties just are *de re* necessary properties. Just take expressions like, 'if you want to win the game, it is *essential* that you stop number 8' and replace 'essential' with 'necessary'; the meaning of the expression does not shift.

Finally, this analysis has both a lengthy historical pedigree: in Aristotle we find that he defines an essential property as a property that an object *must* have [*Topics* 102b6-7], while Leibniz asserts that

> This is why Monsieur, it seems to me, that I ought to regard as involved in my individual concept only what is of such a nature that I would no longer be myself if it were not in me, while, on the other hand, everything which is of such a nature that might either happen to me or not happen to me without my ceasing to be myself, should not be considered as involved in my individual concept; ...This is my thought, which, I believe, conforms wholly to what has always been held by all the philosophers in the world.' [Leibniz 1686/1969: 95]

Meanwhile, Kripke, Lewis, Putnam, and Armstrong – indeed, almost everyone who works on essentialism and modal metaphysics – all accept some form of the modal analysis.[11]

So it seems that this modal analysis, according to which it is necessary and sufficient for being essential that a property be a *de re* necessary property, is a decent place to start when it comes to answering the Analysis Question.

A difficulty

Two problems. First, it is unclear how exactly this modal analysis works. What sense of necessity is it meant to employ? How does it account for necessary properties of contingent existents? Are all necessary properties included? These are important issues, but ones to be dealt with once the analysis is secured.

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[11] See Kripke [1980], Lewis [1968], Putnam [1973, 1975], Armstrong [1989].

Second, and more pressingly, it is unclear whether we should accept the modal analysis. We know that there is a relation between modality and essence – this is evident in the informal characterization of essential properties. This relation could link the two notions in many different ways, most of which are incompatible with the modal analysis – in particular, some imply that being a *de re* necessary property is only a necessary and not a sufficient condition for being an essential property. This is just as compatible with the informal characterization.

So, if we want to accept some form of the modal analysis of essential properties, then the first task we must do is clear: we must look at the different ways that the relation between modality and essentiality might be, discern which of these ways is conducive to the modal analysis of essential properties, and then construct an argument to show why the ways that entail the modal analysis are correct. Only then will we be sure that being a *de re* necessary property is both necessary and sufficient for being an essential property, allowing us to return and deal with the issues regarding the nature of modal analysis itself. To this task of securing the right modal-essential relation I now turn.

How the relation might be: eight possibilities

It seems that there are eight possibilities regarding how the relation between essentiality and modality might be, each of which entail a particular answer to the Analysis Question. The possibilities are:

- *Primitivism*: it is not possible to analyse either modality or essentiality.

- *Double-Barrelled Foundationalism (DBF)*: it is not possible to analyse either essentiality and modality in terms of the other – instead, both can be analysed in terms of distinct elements.

- *Foundationalism*: essentiality and modality can both be analysed in terms of some third, independent concept.

- *Mutual Analysis (MA)*: essentiality can be analysed in terms of modality, and modality can be analysed in terms of essentiality.

- *Modal Mono-Primitivism (MMP)*: while modality is primitive, essentiality can be analysed in terms of some third concept.

- *Essence Mono-Primitivism (EMP)*: while essentiality is primitive, modality can be analysed in terms of some third concept.

- *Fundamentalism*: modality can be analysed in terms of essentiality.

- *Modalism*: essentiality can be analysed in terms of modality.

To generate these, simply follow a series of questions. First, given that there is a relation between essence and modality, is it possible to analyse either notion?[12] If it is not, then we arrive at a position according to which essence and modality are related, but neither can be analysed in terms of the other ('primitivism'). However, if it *is* possible to analyse either notion, then there is a second question: are both notions analysable or only one? Assume both. This leads to a third question, are they analysable in terms of the same or different analysis bases? I.e., is there a single notion which both modality and essentiality can be analysed in terms of, or are there two, with one for each? If two analysis bases, we get the position I call 'Double-Barrelled Foundationalism' ('DBF') according to which though essence and modality are related and it is not possible to analyse either in terms of the other, both can be analysed in terms of two further, distinct notions. Meanwhile, if it is a single analysis base, then we get 'Foundationalism', according to which essentiality and modality are related and can be analysed in terms of a third concept. A related position, that falls out of accepting that both modality and essentiality can be analysed, is 'Mutual Analysis' ('MA')

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[12] I ignore what should in fact be the first question, which is whether modal and essential discourse are factive; given my assumptions of both modal and essential cognitivism, I set this aside.

which does what it says on the tin: essentiality can be analysed in terms of modality, and modality in terms of essentiality.

Returning back to our second question, if only one notion is analysable, then we get the fourth question, whether it is in terms of each other or according to some other notion. If some other notion, there are two options: either essentiality is analysable or modality is. Call the first position 'Modal Mono-Primitivism' ('MMP') and the second 'Essence Mono-Primitivism' ('EMP'). Finally, going back a step, if they can be analysed in terms of each other, then either modality can be analysed in terms of essentiality ('Fundamentalism') or essentiality can be analysed in terms of modality ('Modalism'). This exhausts the possibilities. To make this easier to follow, I offer the following chart:

Which analysis for which position?

So, given the above, we know that there are eight different possibilities regarding how the relation between essentiality and modality might be. Of course, what we are really interested in is what analysis of essential properties these possibilities permit more specifically, which possibilities support the modal analysis. Here, the breakdown is as follows:

- *Primitivism*: No analysis of either modality or essentiality is possible, no modal analysis of essential properties is possible.

- *DBF*: Since DBF holds that essentiality can be analysed in terms of some essence-specific foundation which is not modality, no modal analysis of essential properties is possible.

- *Foundationalism*: Both modality and essentiality can be analysed in terms of some third foundational element. Consequently, an analysis of essential properties is possible but not in modal terms.

- *MA*: Given this position, a modal analysis of essential properties is possible (as is an essential analysis of modality).

- *MMP*: As with DBF, an analysis of essential properties is possible, but not in modal terms. Instead, essentiality can be analysed in terms of some independent foundational element.

- *EMP*: Essentiality is primitive according to this position, so no analysis of essential properties is possible.

- *Fundamentalism*: Since essence is used to analyse modality, no modal analysis is possible on this position. However, being a *de re* necessary property is a necessary condition for being an essential property.

- *Modalism*: A modal analysis of essential properties is possible.

This makes clear that the only ways which are beneficial to the modal analysis of essential properties is are MA and Modalism. So, if we want to answer the Analysis Question with the modal analysis, we've got to find a way to prove that the relation between essentiality and modality is either as MA or Modalism describes it. How are we going to do this?

There are two methods for proving that these two are the only legitimate ways the relation could be. One is to construct a positive argument for such a result; this is difficult, but feasible. The second is to run a negative argument. Should the eight positions presented above

exhaust the possibilities regarding how the relation between modality and essentiality might be, we can construct an argument by elimination for MA and Modalism: by finding reasons to reject the six unfavourable alternatives, the preferred pair wins by default. This second, elimination-style argument is how I will here support MA and Modalism.

To that end, constantly keeping an eye towards providing an analysis of essential properties, the remainder of this chapter and the next discuss and dismiss the alternative options, Primitivism, DBF, Foundationalism, MMP, EMP, and Fundamentalism. Eliminating these six guarantees the legitimacy of a modal analysis of essential properties and brings us that much closer to answering the Analysis Question. I divide up the process in the following way: this chapter focuses the first five alternatives, while the next is concerned with dismantling Fundamentalism.

There are two reasons for such a lopsided distribution. First, while there are many different possibilities, only Fundamentalism has received much support within the literature – indeed, as we shall see, there are *two* alternative Fundamentalist accounts currently available, while, there is little to no support for the other five positions. Second, many of the objections that I turn against the five dealt with in this chapter overlap. This is because four of them (DBF, Foundationalism, MMP, and EMP) require the postulation of some third element to act as an analysis base – a difficult prospect. With that, let us proceed with the argument by elimination.

The argument by elimination

In this long section, I deal with five of the six undesirable positions: Primitivism, Double-Barrelled Foundationalism (DBF), Modal Mono-Primitivism (MMP), Essence Mono-Primitivism (EMP), and Foundationalism.

Primitivism: and that's the way it is

According to Primitivism, modality and essentiality are inherently linked but primitive notions. Regarding analysing essential properties, Primitivism is not a good way for the relation between modality and essentiality to be since not only do we not get any sort of potential analysis of essential properties (as we would if essentiality can be analysed in terms of modality or in terms of some other element), but we also don't get a new function for essentiality, e.g. being the analysis base for modality. So this makes the position unattractive right off the bat. That being said, there are some essentialists who appear to embrace Primitivism: one is Joseph Almog [1991 & 1996].

Clearly, Primitivism is an impossible position to refute: this is because the Primitivist does not offer any explanation for what they accept regarding the nature of possibility and essential properties. Instead, essential properties (and modal properties) are the way they are because, to paraphrase Walter Cronkite, *that's the way it is.* Yet it is still possible to motivate a rejection of a position: the position increases our primitive ideology by asserting that both modality and essentiality are primitives. This is (potentially) multiplying ideological commitments unnecessarily, for if any of the options which require only one primitive notion (e.g. Foundationalism, Fundamentalism, Modalism) work, then there are methodological reasons for preferring them over Primitivism.

This methodological reason, coupled with the fact that accepting Primitivism prevents any possibility of understanding what essential properties are, is enough to warrant Primitivism's rejection. To that end, I feel safe in rejecting it in favour of greener pastures.

Double-Barrelled Foundationalism: the search for the Foundation[13]

On this view there are two foundational elements, one each for modality and essentiality – e.g. modality can be analysed in terms of X while essentiality can be analysed in terms of Y, and $X \neq Y$. Further, DBF entails that essential properties cannot be analysed in modal terms

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[13] Apologies to Isaac Asimov for this subtitle.

(nor modal properties in essential terms), though essential properties can be analysed in terms of the essence-specific foundational element, whatever it might be.

There are two reasons to reject DBF. The first is a methodological point similar to the one raised against Primitivism: if any of the possibilities that postulate only one primitive element are viable, they are preferable to DBF. This is because, as with Primitivism, DBF is committed to two primitives (the two foundational elements), while other positions (Foundationalism, Fundamentalism, Modalism) are committed to just one. Again, this is not a knock-out objection, but it is enough to justify favouring a different possibility.

A second reason to reject DBF is that it is unclear what the two foundational elements are. There are three conditions that a foundation must satisfy to be successful: (1) the foundation must not rely upon the analysed notion; (2) the foundation must be capable of analysing all of the analysed-elements facts; and (3) the foundation should entail the truth of as many of said facts that we take to be pre-theoretically true as possible. Suppose that X is the foundation for modality. To be such a foundation, X cannot rely upon or contain any unanalysed modal notions, all modal facts must be accounted for in terms of X (there can't be any 'ungrounded' modal facts), and X had better fit with our intuitive modal conclusions (and, if it doesn't it better have a good reason why we should give up on the intuitions). Similar restrictions hold for being a foundation for essentiality.

Now, it is difficult to think of *any* concept or notion which is even remotely feasible as a good foundation, given these restrictions, when it comes to modality. This is because any such analysis will employ the notion of *logical consistency*, which is itself a modal notion.[14] Consequently, any foundation that relies upon consistency cannot be the analysis base for modality. This appears to be enough to entail the rejection of DBF, since the position collapses into Modalism, Primitivism, or MMP (all of which take modality as primitive).

Let us set this worry about the analysis of modality aside. What could the foundations be? Recall that, given the assumptions regarding the absolute nature of essential properties,

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[14] See Lewis [1986: 151]

they cannot be any elements that are conventional or mind-dependent. This blocks foundations like linguistic conventions, as Jubien [1993] suggests, as well as pragmatic concerns or expressivist dispositions (as we might employ if we were quasi-realists about modality or essentialty).[15] Instead, it must be some realist, mind-independent element. That's not all; whatever foundations we do use, they need to be compatible with the fact that there is some relation between essentiality and modality. Clearly, foundations that don't allow for such a relation are excluded (since they conflict with the informal characterization of essential properties), and those that can explain why the relation exists are preferable.

So we've got a series of requirements regarding the nature of the foundation: it has to meet the three criteria, it must be some realist, mind-independent element, and it must be compatible with (and preferably explain) the relation between modality and essentiality. This implies that the metaphysician who would accept DBF must respond to the following challenge: come up with acceptable foundational elements, one each for essence and modality, which satisfy the three above conditions. Call this the *Foundational Challenge* – I will be using it quite a bit in the following subsections, since it applies to many of the possibilities.

If the DBFist were to respond to the Foundational Challenge, then it would be necessary to find some substantial arguments against their position – likely, this would involve showing how the proposed foundational elements fail to satisfy the conditions for being a successful foundation. However, until the DBFist does so, there is no reason to believe in his position.

When we couple the Foundational Challenge with the methodological point (and the argument regarding the impossibility of analysing modality), we have sufficient reasons to warrant rejecting DBF. This brings us that much closer to the modal analysis of essential properties.

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[15] See Blackburn [1987] for such an attempt to analyse modality.

Foundationalism: forward the Foundation[16]

According to this position, modality and essence are related and both can be analysed in terms of some third notion. This is opposed to the modal analysis, so we must reject the position. However, Foundationalism is not without its benefits: if it is possible to analyse both essence and modality in terms of a third element, we can reduce our ideological commitments down to one primitive. This gives Foundationalism a methodological leg up on many of its rivals. Further, if the foundation is some concept that we are already committed to for reasons unrelated to analysing essentiality and modality, then it also has a leg up on the other one primitive options. So there (potentially) are methodological reasons for preferring this position to all the others. And, were it correct, we could still answer the Analysis Question; instead of the modal analysis of essential properties, there would be an analysis in terms of the foundational element.

Of course, all of this hinges upon there being some suitable element to be the foundation. As discussed in the previous section, there are several conditions that any would-be foundation must satisfy – and, since this foundation is meant to be the analysis base for both essentiality and modality, they apply doubly. Moreover, for Foundationalism to be methodologically preferable to the other single-primitive positions, we can add a fourth condition: the foundational element must be some notion or concept that we are already committed to for external reasons, e.g. if X is intended to be the foundation and we have to accept X in order to make sense of logical consequence (say), then X satisfies the fourth condition.

Unfortunately for Foundationalism, it is difficult to think of *any* concept or notion which is even remotely feasible as a good foundation, given these restrictions. Clearly, as with DBF, the Foundational Challenge comes up here: the onus is on the Foundationalist to offer us some notion that satisfies the conditions. Until they do so, this position does not merit much attention. Further, the same problem regarding logical consistency and analysing

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[16] See note 13.

modality comes up again: consistency is a modal notion and so any element that relies upon it cannot satisfy the four criteria.

If we *could* come up with a foundational element that satisfied the four conditions, then perhaps Foundationalism would be the way to go. Of course, the essentialist who accepts the modal analysis would then attempt to show how this foundation doesn't satisfy one of the four criteria, so it would be necessary to have a series of arguments regarding the viability of the foundational element. But all of this is getting ahead of ourselves; the Foundationalist has not suggested anything. Until he does, it is fair to conclude that Foundationalism is not a fruitful way for us to think about the relation between modality and essentiality. As such, we can dismiss it for now.

Modal Mono-Primitivism

The fourth possibility is Modal Mono-Primitivism. According to it, while modality is primitive, essentiality can be analysed; however, not in terms of modality but instead in terms of some third notion. This makes MMP similar to Foundationalism and DBF in suggesting that essentiality can be analysed in non-modal terms, and marks it off as another position that we must reject if we are to accept the modal analysis of essential properties.

One might argue for MMP by citing the logical consistency problem of analysing modality; the fact that MMP does not try to analyse away modality makes it more attractive than any of the other possibilities which try and do so (e.g. Foundationalism, DBF, and EMP). Further, given MMP, it is still possible to answer the Analysis Question, unlike with those positions that take essentiality as primitive. At first glance, MMP isn't half bad.

But looks can be deceiving. The familiar Foundational Challenge is a problem for MMP: what *is* this mysterious third element essentiality can be analysed in terms of? Until the MMPist advances one, there is little reason to worry about this position. Similarly, methodological worries come up. MMP is committed to two primitives: modality and

whatever it is that essence can be analysed in terms of. Clearly, any one of the positions that is only committed to one primitive is methodologically superior.

So, as with many of the other positions, I conclude that MMP can be dismissed. While I haven't proven that it is impossible, there enough evidence against it to warrant rejecting it in favour of one of the other positions.

Essential Mono-Primitivism

The fifth and final position I will discuss this chapter is Essential Mono-Primitivism, or EMP, wherein essentiality is primitive and modality can be analysed in terms of some third element. Frankly, it is hard to even make this position seem vaguely attractive as it suffers from all of the problems that I have heretofore mentioned. Because EMP proposes to analyse modality, it must account for the logical consistency problem; since it accepts two primitives (essentiality and whatever modality can be analysed in terms of), it is methodologically inferior to the positions that only accept one primitive; and it must answer the Foundational Challenge in order to even be treated as remotely relevant. This trio of difficulties is enough to allow me to feel justified in rejecting EMP.

Where things stand

Quine, in his efforts to undermine quantified modal logic, argued that QML is committed to an 'invidious Aristotelian essentialism'. In the course of the objection, Quine offered us an analysis of essential properties according to which a property Φ is an essential property of object x iff Φ is a *de re* necessary property of x. This modal answer to the Analysis Question has the ring of truth: it fits well with our pre-theoretic intuitions about the nature of essential properties. Further, it has become the standard analysis of essential properties. So it is a great start to the attempt to analyse essential properties.

However, things hit a snag: the modal analysis requires that the relation between essentiality and modality be a certain way, yet there are eight possible ways the two might be related, and only two of them (MA and Modalism) entail the modal analysis. So, until something is done to show that MA or Modalism is correct, there is little reason to accept the modal analysis.

To solve this problem, I suggested an argument by elimination: knock out all of the positions that block the modal analysis, so that it wins by default. First I argued that while Primitivism can't be refuted, it should be rejected for methodological reasons. This led to Double-Barrelled Foundationalism, which faced a similar methodological point as well as the Foundational Challege: the supporter of this position must offer some element that satisfies the criteria for being a good analysis base. Until they do so, there is no content to the position and therefore nothing to refute (or hold, for that matter). An additional point against DBL stems from analysing modality: any purported analysis of modality cannot rely upon logical consistency for fear of being circular, but it seems that every analysis must employ the notion of consistency.

Similar arguments undercut Foundationalism, Modal Mono-Primitivism, and Essential Mono-Primitivism which, when we tally up the scores, leaves us with just three live options: Mutual Analysis, Modalism, and Fundamentalism. Of these, two entail the modal analysis. So, five of the six undesirable positions have been eliminated. It is the remaining possibility – Fundamentalism – that I deal with in the next chapter. Once it has been taken care of, a modal answer to the Analysis Question is in the cards.

Rejecting Fundamentalism – Chapter 3

In the previous chapter, I specified eight different ways that modality and essentiality might be related. Two of them permit the construction of an answer to the Analysis Question ('what are essential properties?') in purely modal terms, an attractive and intuitively appealing solution. To argue for this analysis, I suggested an argument by elimination, disposing of the other ways that the relation might be. The previous chapter gave us reason to reject five of the troubling possibilities, leaving us with what I have called 'Fundamentalism', according to which modality is analysed in terms of essentiality. Dealing with it is the task of this chapter.

Let me be clear: I come to bury Fundamentalism, not to praise it. To do so, I first present the four core principles of the Fundamentalist position. This leads to two fleshed out versions of Fundamentalism, from E.J. Lowe and Kit Fine. Both are, I argue, susceptible to an objection regarding their failure to explain why being a *de re* necessary property is a necessary condition for being an essential property. This is enough to demonstrate that we should reject both accounts. But there is more. Citing a pair of objections, I show that Fundamentalism in general cannot account for all *de re* or *de dicto* possibilities, as it must do if it is to be a successful analysis of modality. Consequently, by the end of this chapter, all of the ways that the relation between modality and essentialty might be which are not conducive to the modal analysis of essential properties will have been eliminated. All that will be left are Modalism and Mutual Analysis. Since both entail it, the argument by elimination will have succeeded in justifying accepting the modal analysis.

Fundamentalist dogma

This section focuses upon four principles that fundamentalism is committed to: every Fundamentalist must accept the *grounding, interaction, universal,* and *non-reification* principles.

The grounding principle[17]

The first and most central tenet of the fundamentalist view is the *grounding principle*, which states that modality is grounded in essence. According to the grounding principle, the grounds for the *de re* necessity of Socrates' being a human being is Socrates' essentially being so; i.e. Socrates is necessarily a human *because* he essentially is a human. In this way, Socrates' essence fixes or grounds his modal properties. This is the heart of the fundamentalist position, and it has been embraced by the Fundamentalists:

> …by far the most important principle to recognize concerning essences …is that essences are the ground of all metaphysical necessity and possibility. [Lowe 2008: 15-6]

> The serious part of …serious essentialism is that it is better to account for the metaphysical modalities in terms of essence rather than the other way around. [Shalkowski 2008:52]

> Indeed, it seems to me far from viewing essence as a special case of metaphysical necessity, we should view metaphysical necessity as a special case of essence. …The metaphysically necessary truths can then be identified with the propositions which are true in virtue of the nature of all objects whatever. [Fine 1994: 9]

The interaction principle

The above grounding story appears to rely upon the following principle:

> (N) An object x is necessarily Φ iff x's being Φ is of the essence of x

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[17] I used 'grounding' here only because the metaphysicians I discuss here – e.g. Lowe, Shalkowski, and Fine – do so. It is my impression that no harm is done to the Fundamentialist position if we understand it terms of analysis, so I ask the reader to simply read 'grounded' as another way to express 'analysed in terms of'.

This is problematic, since (N) renders the relation between essentiality and *de re* necessity symmetric – satisfying the left-hand side of the bi-conditional is sufficient for satisfying the right. Take Socrates and the singleton set that contains only him, {Socrates}. According to Fine, while {Socrates} essentially and necessarily has the property *having as a member Socrates*, Socrates necessarily but not essentially has the property *being a member of {Socrates}* [1994: 4].[18] In other words,

> …the metaphysical dictionary, as it were, for **Socrates** might have in its entry that Socrates is a human person, perhaps of specific parentage, etc. What it will not contain, though, is any reference to the sets of which he is a member. The omission results not from limitations of space, but from the recognition that being Socrates is not a matter of being a member of any sets, even if the entry for {**Socrates**} is very much a matter of containing Socrates and essentially so. [Shalkowski 2008: 56]

What the Socrates-{Socrates} case shows is that it is possible for an object to have a property necessarily and non-essentially. As it stands, (N) does not allow for this.

The requisite repair, first suggested by Fine, is to tack onto the right-hand side of (N) an additional clause that allows *other* entities' essences to play a role in determining the necessary properties of an object. Thus (N) becomes

> (N') An object *x* is necessarily *Φ* iff either (i) x's being *Φ* is of the essence of *x*, or (ii) the essence of something else entails that *x* is *Φ*.[19]

This re-vamped principle accounts for the Socrates/{Socrates} case: Socrates' necessarily *being a member of {Socrates}* is grounded in {Socrates}'s essentially *having as a member Socrates*, while Socrates' essence can continue to be silent regarding his membership in {Socrates} (and

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[18] I will examine this argument in more depth in the next chapter, since it is the primary objection to the modal analysis of essential properties.

[19] C.f. Lowe [2008: 45-6], [2006:16], and Fine [1994: 8].

every other set for that matter). So Socrates can *de re* necessarily but not essentially be a member of {Socrates}, exactly as the case demands.

An additional pay-off of (N') is that it gives the Fundamentalist the flexibility to ground many of one object's necessary properties in other entities, e.g.

> …Socrates is necessarily the subject of the following event – *the death of Socrates* – because it is part of the essence of that event that Socrates is its subject, even though it is not part of Socrates' essence that he is the subject of the event. It is not on account of what Socrates is that he is necessarily the subject of that event but, rather, on account of what the event is. This is not to say that Socrates could not have died a different death, only that no one but Socrates could have died the death that he in fact died. [Lowe 2008: 46]

So (N') serves to account for the necessary properties of objects.

What about the *de re* possibilities? Both Fine and Lowe are silent on this matter; indeed, the closest either comes to specifying how to ground an object's possible properties is a quip from Lowe where he suggests that the same story used for *de re* necessities works '*mutatis mutandis* for possibility' [2008: 46]. I think something like the following is what he has in mind. First we have something like the following principle, which we can derive from (N):

(P) An object *x* is possibly *Φ* iff *x*'s being *not-Φ* is *not* of the essence of *x*

Unfortunately, much like (N), (P) has some troubling consequences; according to (P), assuming that Socrates' essence says nothing about his being a member of any set (which, given the Socrates-{Socrates} case, it must), it is not part of Socrates' essence that he not be a member of {Cicero}. Consequently, Socrates possibly is a member of {Cicero}. Of course, Socrates can't possibly be a member of {Cicero} – only Cicero can.

The natural solution is to mimic the move applied to (N) and add onto the right-hand side of (P) a further clause,

(P') An object *x* is possibly *Φ* iff either (i) x's being ¬*Φ* is not of the essence of *x*, or (ii) the essence of nothing else entails x's being ¬*Φ*.

This works as desired: Socrates does not have the property of *possibly being a member of {Cicero}* because, while Socrates' essence does not prevent the possibility, the essence of {Cicero} does. Meanwhile, Socrates has the property of *possibly not drinking the hemlock* because his essence, along with all of the other essences, does not entail that he must do so – thus, as with necessary properties, the essence of one individual can ground the possible properties of another individual.

This makes it clear that Fundamentalism is committed to the *interaction principle:* the essence of one object or entity can determine the modal properties of a different object or entity. This principle is just as central to the Fundamentalist as the grounding principle, for without it Fundamentalism falls prey to the Socrates-{Socrates} case.

This is acknowledged by the Fundamentalists: Lowe says that 'knowing a thing's essence, in many cases, is accordingly very largely a matter of understanding the relations of essential dependence in which it stands to other things whose essences we in turn know' [2008: 38] and Fine suggests that

> …different essentially induced truths may have their source in the identities of different objects… In particular, an induced truth which concerns various objects may have its source in the nature of some of these objects but not of others. This is how it is with our standard example of Socrates being a member of singleton Socrates; for this is true in virtue of the identity of singleton Socrates, but not of the identity of Socrates. [1994: 9][20]

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[20] While Fine uses 'nature' and 'identity' in this quote, within the context of his [1994], these are synonymous with 'essence'.

Thus the interaction principle is, like the grounding principle, a core principle of Fundamentalism.

The universal principle

A third principle that is central to Fundamentalism is the *universal principle*, which states that every entity has an essence: every concrete and abstract object, every property, every kind, every concept – each of them has an essence.[21] The reasoning behind the Fundamentalist's universal principle is a perversion of Quine's 'no entity without identity' principle.[22] As Lowe puts it,

> Everything is, in Joseph Butler's memorable phrase, *what it is and not another thing*. That has sounded to many philosophers like a mere truism without significant content… but, in fact, Butler's dictum … implies that there is a fact of the matter as to what any particular thing is – that is, as to its 'very being', in Locke's phrase. Its very being – its identity – is what makes it the thing that it is and thereby distinct from any other thing. [2008: 37]

For the Fundamentalist, the addendum is that it is an entity's essence which determines an entity's identity, which implies that every entity have an essence.

If any argument is needed, the Fundamentalist can offer the following. Suppose there exists an entity without an essence. This entity would have nothing to make it such that it was anything at all; it literally would not be itself, nor would it be distinct from anything else. Such a possibility is an absurdity. Consequently, there could not be an entity without an essence – if an entity is anything, it has an essence, just as the universal principle asserts.

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[21] See Lowe [2008: 34], Shalkowski [2008: 49], Fine [1994: 2] and [1995: 54], and Correia [forthcoming: 2].
[22] See Quine [1968] and [1969].

The anti-reification principle

The universal principle leads to an interesting question: is the essence of Socrates itself an entity? If it is, by the universal principle it also has an essence – the essence of Socrates' essence. If it doesn't have an essence, then it doesn't have an identity; there is nothing to mark it off as distinct from everything else or even to make it what it is. More importantly, without its essence, it isn't possible for Socrates' essence to do the requisite work of determining Socrates' identity. So it seems that Socrates' essence must have its own essence. Of course, the essence of Socrates' essence must, by the same reasoning, also have its own essence: the essence of the essence of Socrates' essence. And this must in turn have its own essence… In this way, it appears that Fundamentalism is committed to an axiom of infinity. This is a strange and undesirable consequence.

How can the Fundamentalist avoid this apparent commitment to an infinite number of essences? One solution would be to stipulate that essences do not need essences to fix their identities. This amounts to giving up on the universal principle, so it won't do. Another solution is to assert that essences do not need their own distinct essences because they can play the essence-of-essence role themselves: e.g. the essence of Socrates' essence is Socrates' essence itself. This leads to a new problem: if Socrates and his essence did have the same essence, and essence fixes identity, it seems that Socrates and his essence should be identical. But Socrates isn't identical with his essence since the essence has the property *grounding Socrates' identity* while Socrates himself does not. By Leibnitz's law, Socrates and his essence must then be distinct entities – and therefore their essences must be distinct as well. So the Fundamentalist cannot have Socrates' essence be both its own and Socrates' essence.

Lowe suggests an alternative: an entity's essence 'is not and could not be some further entity' [2008: 39] – in other words, essences are not things at all. This allows the Fundamentalist to accept the universal principle while still avoiding the commitment to an axiom of infinity.

Yet if essences are not themselves entities, we might wonder how we got into the situation of thinking that they are entities in the first place. According to Shalkowski, we are lead into this mistaken thinking by the surface grammar of essentialist assertions: 'the essence of Socrates' is syntactically similar to 'the beard of Socrates', which makes us think that the former expression, like the latter, refers to some object. Similarly, essentialists frequently say things like 'essences might be parts of a more comprehensive essence' [Fine 1995: 66], which imply that essences can stand in mereological or composition relations.

These are products of 'locutions of convenience', not 'insight into what there is and how it is';

> …If we think that it is part of the essence of Socrates that he is a human being, we simply say that Socrates is essentially a human or that he is human by nature. If we think that it is part of his nature that he was the son of Sophroniscus and Phaenarete, we say that he was essentially their son. Saying these things does not give the impression that there is a thing, or even a property, had by Socrates that is the special concern of the essentialist. If anything, this way of speaking expresses what is surely initially more natural, i.e. that there is something special about the way in which Socrates is human or that there is something special about how he is related to Sophroniscus and Phaenarete. …the [fundamentalist] takes as primitive what it is to be a (kind) of thing or what it is to be a certain way *in a certain way*. [Shalkowski 2008: 57-8]

Instead of thinking that there is some special entity (Socrates' essence) or some special property (*essentially being the son of Sophroniscus and Phaenarete*), we should think that there is a special *way* that Socrates is, and this special way is the *essential* way. However, this talk of ways is not meant to be ontologically committing; rather, it is just shorthand for talking about what there *really* is. Shalkowski notes 'in virtue of there being both the High Road and the Low Road, there are two ways to Scotland from here', yet it would be ridiculous to hold that assenting to this assertion implies commitment to four entities: the High Road, the Low Road, and two further 'ways' [Shalkowski 2008: 59]. The ways are nothing over and above the two

roads – while we find it easier to speak as if there are ways, there aren't *really* any. It is just a handy way of talking.

As this applies to essentialist talk, Shalkowski suggests that

…the [Fundamentalist] can maintain that a metaphysical basement is more clearly articulated when one determines that Socrates is essentially the son of Sophroniscus and Phaenarete, say, and not when one determines that it is part of his essence that he is their son or that necessarily he is so or that it is necessarily true that he is so. The less-than-perspicuous expressions give the impression that the essence is a thing with parts, encourage a lack of subtlety in our thinking, or invoke truth bearers and meta-linguistic considerations where they are both unhelpful and extraneous. Given the grammar with which we are so familiar and have such facility, these constructions are useful, even though they are not, the serious essentialist can maintain, a straightforward route to metaphysical insight. Thus is the serious essentialist freed …from the commitment to essences as things… [2008: 59]

Thus, the Fundamentalist can embrace the *anti-reification principle*: essences are not entities. This is the fourth core principle of Fundamentalism, designed to avoid the commitment to an axiom of infinity.

Characterizations of essence

The above four principles constitute half the Fundamentalist position; the second half involves offering some characterization of essences. Clearly, these are not analyses of essence, for the Fundamentalist doubts whether any explanation or analysis of essentiality in non-essential terms is possible.[23] Still, accepting this is 'not to deny the possibility of further clarification' regarding the nature of essences [Fine 1994b: 53], and this section examines two Fundamentalist attempts. The first is from E.J. Lowe, according to which essence is the 'identity' of an object, and the second is Kit Fine's conception of essence as real definition.

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[23] See Lowe [2008: 38], Shalkowski [2008: 52], Fine [1994: 4].

I offer some a critique of both: for Lowe, I suggest that his characterization is uninformative. This opens the way for an objection regarding how Lowe can explain why all essential properties are *de re* necessary properties. Without such an explanation, Lowe cannot use principles (N') and (P') to explain how modal properties are grounded in essential properties. Meanwhile, I argue that Fine's characterization only succeeds in offering this sort of explanation if we build into the concept of real definition a primitive modal restriction. This means that Fine's characterization cannot be a part of a successful reductive analysis of modality in terms of essentiality.

Lowe: essence as 'identity'

For Lowe, the essence of an object is *what the object is*, or the *very identity* of the object, or the *metaphysical nature* of the object [2008: 35]. However, the sense of 'identity' employed here is not what is expressed by the identity relation, nor is it the same as the property of *being self-identical* or even *being identical to x* (where 'x' names the specific entity). No, the sense of 'identity' isn't numerical identity; rather, it is something looser, more metaphysical in nature. Shalkowski describes it as 'some fact of the matter that makes [the object] what it is and not something else' [2008: 49], and Lowe suggests that we might better grasp the sense of 'very identity' by thinking of it in terms of Aristotle's notion of 'the what it is to be' or 'what it would be to be' [2008: 35n19].[24]

Frankly, Lowe's characterization simply isn't very informative, no matter how much argument by italics Lowe offers. Saying that the essence of an object just is the *very identity* of an object – not the identity mind you! – or that the essence is *what the object is* does not clarify what an essence is. It is true that analogies only go so far, but we aren't here even being given analogies, just relatively synonymous, heavily italicised phrases. Since Lowe takes essence as a primitive notion, it is unsurprising that he is unable to give a rich characterization. Still, some sort of story would be nice. Perhaps the best Lowe can do is to

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[24] See also Lowe [2002: 79-80], [2006: Chpt 2], and [2009: Chpt 2].

paraphrase Louis Armstrong; when asked, 'What is jazz?' Armstrong quipped, 'If you gotta ask, you'll never know'. [25] Along the same lines, Lowe might say that if you have to ask what essence is, you're never going to get it. My worry is that I, like the questioner, will simply never know.

While this isn't a reason to reject Lowe's Fundamentalism, it does open the door for a potential objection: according to Lowe's account, all essential properties of an object – i.e. every property that is part of *what an object is* – is necessary to the object. Effectively, Lowe is committed to

(L) If Φ is a part of *x*'s 'very identity', then Φ is a *de re* necessary property of x's.

This follows from Lowe's accepting the grounding and the interaction principles. So let us grant (L). Now, what, according to Lowe, *explains* the fact that every property that is part of x's 'very identity' is a *de re* necessary property? Why could there not be any contingent properties included within an object's 'identity'?

Let me be clear what the objection is: Lowe has no explanation as to why his notion of very identity has the particular modal payoff that it must do for his account to work. Without an explanation, Lowe cannot explain how essentiality grounds modality – it looks like a complete coincidence. This means that Lowe cannot motivate the reductive analysis of modality in terms of essentiality. So why should we buy such an account? Further, by not being able to guarantee that all essential properties are necessary properties, Lowe cannot use (N') or (P') to generate the *de re* modal properties. This is a significant blow to Lowe's Fundamentalism, since it leaves how essences ground modal properties completely mysterious.

Lowe might respond to this by simply suggesting that what does all the work is *magic* – essential properties *just are* all *de re* necessary properties. That would keep the

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[25] If true, this entails that all discussion regarding the ontology and nature of jazz music is bankrupt. For a dissenting view, see Dodd [2008] and Kraut [2007].

Fundamentalist account afloat. However, it would do so at the cost of making Lowe's position look completely *ad hoc*.

Fine: essence as real definition

The second characterization offered by Kit Fine is captured in the thought that essence should be conceived of on the model of a definition: just as we may 'define a word, or say what it means, so we may define an object, or say what it is' [1994: 2]. This conception of essence-as-definition provides us with a good model of how the concept works, though it does not offer any reduction or analysis of essence.

To flesh out Fine's characterization of essence as definition, it is necessary to distinguish *nominal* and *real* definitions. A nominal definition has as its subject a linguistic element, be it a singular term or a predicate. Thus the subject of a nominal definition would be the term 'Socrates'. Further, a nominal definition is constituted by words and other linguistic elements. Meanwhile, the subjects of real definitions are things themselves, independent of how they are designated; so the subject of the metaphysical definition of Socrates is not the term 'Socrates' but the man himself. Additionally, real definitions are not composed of words but of the very stuff of reality: things, properties, relations, and the like. So the real definition of Socrates contains things like the property *being a man,* and not any linguistic elements.

Given what real definitions are, Fine concludes that the 'concept of essence has then been taken to reside in the 'real' or objectual cases of definition, as opposed to the 'nominal' or verbal cases' [1994: 2] – i.e., an object's real definition is the object's essence. So, for Fine, the essence of an object is its real definition, and the essence serves to fix the object's modal properties.

Fine's explanation of the modal properties of a thing in terms of its essence requires not only that the thing have a real definition, but also that this real definition has a modal upshot: the constituents of Socrates' real definition must be properties that he could not have failed to have. This is clear from the fact that Fine is happy to allow for an object's having a

property necessarily to be a necessary condition for an object's having the property essentially – though it is not sufficient, for reasons highlighted by the Socrates-{Socrates} case.[26] This gives us the following principle:

(D) If Φ is a constituent of *x*'s real definition, then Φ is a *de re* necessary property of *x*'s.

This captures the relation between a property's being part of an object's real definition and its being necessarily had by that object. The problem is that Fine cannot explain why the properties contained within an object's real definition *must* be those that the object necessarily has – what is it that prevents contingent properties from being parts of real definitions?

Let us grant that when we are first introduced to the notion of a real definition, we naturally latch onto a modalized notion of a real definition, according to which the real definition of an entity *x* is *necessarily* such that an entity *y* has all the properties in the definition iff it is identical to *x*. (D) is likely a consequence of this modalized conception of real definition.[27] However, Fine's explanation of the notion of a real definition must be free of any modal constraint if the Fundamentalist view that it is a part of is to be genuinely reductive regarding analysing modal notions. This means we cannot adopt the modalized

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[26] See Fine [1994: 3]

[27] A potential source of support for (D) (and thus for the idea that only necessary properties are constituents of an object's real definition) would be a comparison to nominal definitions; on what Putnam [1970] calls the 'traditional view', we take the nominal definitions of natural kind terms to specify the modally necessary and sufficient conditions an entity must satisfy in order to fall within the extension of the term. In this way, we might think that there is a *modal* constraint on what counts as a legitimate nominal definition. Putnam goes on to criticize this 'traditional view', arguing that it is not possible to specify a single property or a conjunction of properties which constitute the genuine necessary and sufficient conditions for falling within the extension of terms like 'lemon' [1970: 188-9] While Putnam may be correct, this is beyond the scope of my present discussion – as I will show, this 'typical view' cannot be applied to real definitions, regardless of its success or failure at the level of nominal definitions.

conception of a real definition, since doing so amounts to accepting the primitive modal constraint that such a conception requires.

This forces us into accepting a non-modalized conception of real definition. Unfortunately, if we do this, the expectation that (D) must be true dissolves: there is now nothing to prevent a contingent property from being part of an object's real definition. Thus, once we recognize that the notion of real definition cannot be the modalized one, explanation for the truth of (D) goes away.

Fine might be excused for making this mistake because he starts his characterization of essence by looking at {Socrates}, and it seems fair to assume that the real definitions of mathematical entities like sets will consist only of mathematical properties. Since mathematical properties are (intuitively) necessarily had if had at all - i.e. that *having as a member Socrates*, like all other membership properties, is a necessary property, we can see why Fine would conclude that {Socrates} only has necessary properties within its real definition.

But take my stuffed dinosaur T-Rex. What properties are included in his real definition? Some likely properties include *being a stuffed dinosaur*, *being a material object*, and *being a toy*. What about *being used as an example in Nathan's thesis*? What prevents this obviously contingent property from being a part of T-Rex's real definition? There simply isn't any explanation that Fine can appeal to here to keep this property out, since he can't appeal to any sort of modal constraint without undercutting the desired analysis of modality.

So Fine is in a dilemma: he needs the modal conception of real definition in order for his account to be able to explain the truth of (D). However, he cannot accept the modal conception because it relies upon an unanalysed modal restriction. Thus Fine's account either cannot explain why all essential properties are *de re* necessary properties (like Lowe's account), or cannot reductively analyse all modal notions. Neither is conducive to the success of Fundamentalism.

Summing up

In this section we have seen two Fundamentalist stories, Lowe's essence as 'very identity' and Fine's essence as real definition. Both are intended to be linked up with the above four core principles to form fully-fledged Fundamentalist views. Unfortunately, both suffer from what is basically the same problem: neither story can successfully explain *why* essential properties must be *de re* necessary properties. This undermines the success of the Fundamentalist account, because the principles used to generate the modal truths – (N') and (P') – depend upon all essential properties being *de re* necessary properties. So until Fine and Lowe can account for why this is the case, their accounts don't work.

Objections to Fundamentalism in general

In the previous section, I attacked the two accounts of Fundamentalism that are presently available. In this section, I present a pair of objections aimed at demonstrating the fundamental falsity of Fundamentalism in any form. To do so, it is necessary to first specify two conditions that every Fundamentalist account must satisfy.

Two failure conditions

We encountered both of these conditions in the previous chapter, but it is worth noting them again before we turn to the following objections. The first condition is that all modality must be accounted for: every modal truth, fact, and property must be analysable in essentialist terms. If there are any modal truths, properties, or facts not analysable in terms of essence, the Fundamentalist must postulate some primitive modal datum. This entails the falsity of the grounding principle and thus the falsity of Fundamentalism itself.

Meanwhile, the second condition is that, in detailing how essence grounds the modal facts, properties, etc., the concepts employed must be non-modal. If any unanalysed modal concepts are employed, the Fundamentalist account relies upon a modal notion and therefore

fails. We've already seen a potential example of this above, in the discussion regarding Fine's notion of a real definition.

In the following objections, I show how Fundamentalism in general will always fail to satisfy both conditions. Consequently, we must reject it as a legitimate way for the relation between modality and essentiality to be.

My possible sister: the problem of de re possibility

I don't actually have a sister, though I might have done. Consequently, it seems that

(S) I might have had a sister.

is true. On the Fundamentalist story, this can only be so in virtue of some essence fact. So what essence is involved? At first glance we might think that it is my essence alone that suffices to ground (S): it isn't part of my essence that I be sister-less, so consequently I might have had one. Of course, we know that this can't be right, given the Socrates-{Cicero} case. So we might broaden it out to include a few other essences – perhaps my mother's and father's as well. Yet this won't do either: there could be some other essence (e.g. my grandfather's or the reader's) that includes a property which somehow prevents me from having a sister. For this reason, the truth of (S) appears to at least partially rely upon *all* of the essences that there are. This is a bit strange – why should something that is so clearly about me concern every other entity? – but let us grant the point for now.

It seems there are two broad options: first, given that every essence is involved, perhaps (S) is true in virtue of all the essences, i.e. somehow, all of the essences play a *direct* part in entailing that I might have had a sister. A second option is that there is one entity that essentially has a property which entails the truth of (S); i.e. while it is compatible with all of the essences, it is one essence alone that acts as the grounds for (S)'s truth. I examine these options in turn below.

The collective option

First we have the 'collective' option, according to which (S)'s truth is grounded upon all of the essences taken together. If so, it seems only fair to ask how the essences ground the truth of (S). To this, there seem three answers.

One answer is that (S)'s truth is grounded in the fact that (S)'s being true is *consistent* with all the essences; i.e. given that there is no contradiction between what is essential to everything else and the proposed possibility, it follows that it is genuinely possible. This would be a systematic mechanism for fixing genuine possibilities, and it would be grounded upon all of the essences. Unfortunately, as I have already noted, consistency is or at least relies upon a modal notion: according to Lewis, a set of sentences is *consistent* iff those sentences, as interpreted, *could* be true together [1986: 151]. Thus, if the Fundamentalist appeals to consistency as the mechanism to generate possibilities from the collective of essences, the account fails.

A second answer is that it is a part of all the essences that I might have had a sister, i.e. every entity has the essential property of *being such that Nathan might have had a sister*.[28] Here, it is a direct entailment of every other essence that I could have had a sister, so worries about appealing to consistency are successfully avoided. Yet this also has some funny results: in discovering a *de re* possibility for me, we thereby also discover something about the essence of every other thing too – namely, that every entity has the essential property of *being such that Nathan might have had a sister*. This holds true for all *de re* possibilities of other objects, which amounts to the requirement that grasping one object's *de re* possibilities requires grasping every entity's essential properties. Paraphrasing Fine, the anti-Fundamentalist can mockingly jest, 'O happy Fundamentalist! For in discovering the possibilities of but one

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[28] Due to the anti-reification principle, this talk of 'parts' should not be interpreted literally, though I here employ such talk for ease of expression.

thing, he thereby discovers the essence of all things.'[29] This is a pretty ugly result, and it isn't the only problem.

Further, we might ask what property it is that all of the entities have as part of their essences. It cannot be the property *being such that Nathan might have had a sister*, since this contains an unanalysed used of 'might', which would undermine the Fundamentalist's reductive aspirations. So what property could it be? It cannot be *being such that Nathan has a sister*, for if this were essential to *every* entity, then it would be the case that I necessarily have a sister, which is false, given that I don't actually have one.[30] It looks like the only property that will work is one that includes the 'possibly' modal operator, and as I have already argued, this entails taking a modal property as primitive. So this answer doesn't look like it works either.

The third and final answer is that it is simply *magic*: all the essences simply do ground the truth of (S), and they do so without appealing to consistency, or by having some sort of unanalysed modal property. Clearly, this story works – or, rather, it isn't possible to construct a counter-example to it. However, it makes the Fundamentalist story for generating possibilities look *ad hoc.* That, I feel, is enough to warrant abandoning the collectivist option.

The single essence option

The second broad option for grounding the truth of (S) is that there is a single essence which entails (S)'s truth; in other words, an entity whose essence entails that I possibly have a sister. Let us call this entity 'Sister'. The mere existence of Sister is sufficient to guarantee that I have a possible sister. Of course her existence would have to be compatible with all of the other essences, so let us assume that this is the case. There are two questions that we must answer regarding Sister: first, what property does Sister essentially have? Second, what sort of entity is Sister?

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[29] See Fine [1994: 5], who uses this point against the modal analysis of essential properties.

[30] Take any actual existent, like the reader. It will be essential to the reader that Nathan has a sister, which entails that in the world where the reader and I co-exist – the actual world – I have a sister.

With regards to the property question, we know that Sister cannot essentially have the property of *possibly being my sister*, for that would again be a primitive modal property. Sister must then have some non-modal property that entails the truth of (S). Since the only non-modal property which does is the relational property *being Nathan's sister*, this is the property that Sister must essentially have.

By specifying the property Sister has, we also know something about what sort of thing Sister is. Assume that Sister actually exists. Sister's essence entails that Sister has the property of *being Nathan's sister*, which entails that I have the property of *having a sister.* Since I do not actually have a sister, we have a contradiction. As such, we must reject the assumption – Sister must not actually exist. Consequently, Sister must either be a merely possible existent or a non-existent object. Let us look at these two options in turn.

Suppose that Sister is a merely possible existent. Accordingly, the truth of (S) is grounded by the merely possible Sister, an entity whose essence includes the property of *being Nathan's sister*. Now, what happens when we apply the same story to another *de re* possibility of mine,

(M) I am possibly married to Marisa Tomei

What ensures the truth of (M)? It isn't my essence and the essence of Marisa Tomei, for if that were all that was needed I would actually be married (which, for better or for worse, is not the case). So, much like with the truth of (S), (M) must be true in virtue of the essence of some other merely possibly existing thing. In the case of (S) we had Sister, but what can we appeal to in (M)'s case? It can't be Marisa's essence, since Marisa and her essence don't merely possibly exist. Instead it must be Marisa*'s essence, where Marisa* is a merely possibly existing object whose essence includes the property of *being married to Nathan*. Of course, Marisa*≠Marisa, since they have different essences. This means the story has made true the wrong *de re* possibility – we were trying to make true (M), but what we instead made true was

(M*) I am possibly married to Marisa* Tomei

As lovely as Marisa* is, I'd much rather be possibly married to Marissa. Something has gone wrong. Can the Fundamentalist go from (M*) to (M)?

Perhaps the Fundamentalist will turn to counterpart theory: if Marissa* is a counterpart of Marisa, Marisa then has the property of *possibly being married to Nathan*. Assuming that marriage is a symmetrical relation, this entails the truth of (M). So by appealing to counterpart theory, the Fundamentalist can go from the truth of (M*) to (M). Unfortunately, by going this route the Fundamentalist gives up on the grounding principle: essences *alone* are not the grounds for modal properties, essences *and* counterpart relations are. This is, I think, tantamount to giving up on the Fundamentalist project altogether.

What about the other option, where Sister is a non-existent object? One obvious problem with this account is the commitment to non-existent objects, which is in and of itself objectionable.[31] However, let us set that aside. According to this story, there is a non-existent object Sister whose essence is such that she is essentially my sister, and this is what grounds the truth of (S).[32] However, like the *possibilia* story, this route leads to trouble. First, take the possibility

(SE) I might have had an existent sister

The non-existent Sister could not make (SE) true, yet clearly (SE) is just as true as (S). Moreover, take (M) above. The truth of (M) must be fixed by the essence of a non-existent object Marisa**, but this doesn't make true (M) so much as

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[31] Cameron makes a similar point about Fine's position, stating that 'I start to lose my grip on the notion of essence once non-existent things are said to have essences' [2010: 356].

[32] Perhaps it is possible for Fine to pursue much the same route as Lowe, phrased in terms of the on-stage,off-stage terminology of his [2005b]. This version of the position would offer no substantial benefit regarding avoiding the objection I here present, however.

(M**) I am possibly married to Marisa** Tomei

Further, if we shifted (M) to

(ME) I am possibly married to an existent Marisa Tomei

it doesn't look like there is anything to ground the truth of (ME).

The Fundamentalist looks entirely out of options at this point: every attempt to fix the truth of (S) leads to the collapse of the position. Nothing worked when we tried to appeal to all of the essences, and nothing seems to work relying upon a single entity's essence. Frankly, I do not think it possible for the Fundamentalist to account for *de re* possibilities as captured by assertions like (S). To that end, Fundamentalism must be rejected.

One more thing: the problem of de dicto possibility

In the above objection, I argued that *de re* possibilities cause problems for Fundamentalists; here, I turn to *de dicto* possibilities. Take the following modal truth:

(E) There might have been one individual distinct from every actual individual.

The problem is, as with the *de re* modal claim above, it is not clear what essence or essences are meant to ground the truth of (E).

Suppose that the essences of all the actual individuals are taken to be what secures the truth of (E). They can't do this via consistency, since this entails accepting a primitive modal notion. Perhaps every essence has some property that grounds the truth of (E)? No. For, as before, things cannot have a modal property like possibly *co-existing with n+1 things* (where 'n' is the number of individuals that there actually are) because this employs an unanalysed

'possibly' within the property. Further, it cannot be the property of *co-existing with n+1 things*, because there are some objects that do not necessarily co-exist with n+1 things – namely, all of the actual objects. Similarly it can't be the property *co-existing with some distinct thing*, since this only entails that, for each object, it is true of that object that it could have existed with something distinct, not *n* distinct things.

Moving away from appealing to all the essences, the Fundamentalist could postulate a single non-actual essence that includes the property *co-existing with n+1 things*. Here the above difficulties regarding how this non-actually existing object can make true (E) come up again. But let us suppose that some way were found to resolve the above issues. Call the non-actual entity whose essence grounds the truth of (E) 'Extra'. It is essential to Extra that it co-exist with n+1 things. What else is Extra like? Is it a set, a spoon, a space ship? If its only property is being a co-existent object, then it seems like a rather strange object.

Further, take every *de dicto* possibility involving co-existence, e.g. (i) it possible that another object and I are the only existents, (ii) possible that Marissa Tomei and another object are the only two existents, (iii) possible that Kit Fine, E.J. Lowe and another object are the only three existents… Every one of these is going to need a distinct non-actually existing object whose essence specifically matches the possibility specified – (i) requires the non-actual existence of Extra$_{Nathan}$, (ii) requires Extra$_{Marisa}$, (iii) requires Extra$_{Fine+Lowe}$… This, combined with the above problems, leads me to conclude that the Fundamentalist cannot account for *de dicto* possibilities either.

Concluding the argument by elimination

Let us assess where this leaves us regarding the over-arching argument. I suggested that the elimination of all of the possible ways the relation between essence and modality might be which are not conducive to a modal analysis would serve as a form of support for such an analysis. In the previous chapter, I dismissed five of the six undesirable possibilities, and this chapter has demonstrated that fundamentalism does not work either. Thus, all of the

competing positions have been eliminated. The only possibilities left are ones which entail the modal analysis of essential properties. As such, the argument by elimination has succeeded. We are justified in accepting the modal analysis.[33] Of course, fleshing out what the modal analysis *is* entails further explication and evaluation. This is the task of the next chapter.

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[33] If we wanted to go even further in our elimination, we can argue that Modalism is preferable to Mutual Analysis. This is because the Mutual Analysis requires that modality be analysable in terms of essentiality, which, as this chapter has shown, is not possible. Of course, this elimination is not required – my aim is to offer some support to the modal analysis. Since MA, like Modalism, entails the modal analysis, whether we can eliminate it or not is irrelevant to the present argument.

Elucidating the Modal Analysis – Chapter 4

This chapter is concerned with fleshing out the modal analysis of essential properties. Such a task involves specifying what sense of necessity we are to understand essential properties in terms of, which forces us to modify the modal analysis principle. A hiccup involving the essential properties of contingent existents leads to another modification, to a formulation which relies upon Kripke's notion of weak necessity. Eventually, we arrive at (EDM), a quite attractive answer to the Analysis Question. However, while (EDM) can fight off its primary rival (an identity-dependent version of the modal analysis) and can defend itself from an objection of McLeod's, it is unclear how (EDM) is meant to handle an objection of Kit Fine's. I conclude this chapter by noting that the modal analysis cannot succeed without replying to Fine.

First shot at a modal analysis: (M)

Given the success of the argument by elimination, the only ways the relation between modality and essentiality could be are ways which are conducive to the modal analysis of essential properties. To that end, we know the rough outline of the answer to the Analysis Question is something like the characterization of essential properties Cartwright offers in the following:

> [an object's] essential attributes are those it has necessarily, those it could not have lacked. Its accidental attributes are those it has only contingently, those it might not have had.' [1968: 615]

This gives us the following principle:

> (M) A property Φ is an *essential* property of object x iff x is *de re* necessarily Φ

As I argued in chapter 2, such an analysis fits with our pre-theoretical conceptions of essential properties. However, some clarification is required before we can be completely satisfied with the modal analysis.

Senses of necessity: (MM)

One issue that must be addressed regards the sense of necessity in (M). Given that there are many different kinds of necessity, it follows that there are many kinds of necessary properties. So which kind of necessity is used in (M)? In other words, in terms of what kind of necessary properties should we analyse essential properties?

We might wonder whether this is a matter worth worrying about – after all, what does it matter what sense of necessity we use? However, we can easily show that we cannot mix and match our senses of necessity – if we are going to analyse the essence of an object, we can use only one sense of necessity. Note that it is *historically* necessary that Napoleon lose the Battle of Waterloo, *physically* necessary that he not move faster than the speed of light, and *logically* necessary that he not be both spherical and non-spherical (at the same time and in the same respect). Turning these into properties, Napoleon has the *de re* necessary properties of *losing the Battle of Waterloo, moving slower than the speed of light*, and *not being spherical and non-spherical* respectively; applying (M), we can conclude that these properties are essential to Napoleon. However, it is not physically necessary that Napoleon be the Water-loser, nor is it logically necessary that Napoleon move slower than light or lose the battle – he could have both been the victor and have moved faster than light (indeed, in the possible worlds where he does both it isn't hard to come up with an explanation of how he wins the battle). This implies that Napoleon does *not* essentially have the properties of *losing the Battle of Waterloo* and *moving slower than the speed of light*, contrary to our earlier conclusions.

Clearly then, each sense of necessity implies a different extension of necessary properties and in turn a different essential property extension: historical necessity entails that all of the properties related to past facts about an object are essential to it, physical necessity that properties regarding the interactions with the laws of nature are essential, etc. In this

way, which sense of necessity we employ within (M) determines what the extension of essential properties is. So, what sense of necessity we use matters a great deal.

Of course, it also shows that it doesn't matter since linked with each sense of necessity is a particular kind of essentialism. For example, one brand of essentialism is what Mackie calls 'Weak Aristotelian essentialism', according to which

> being F is an essential property of A in the Weak Aristotelian sense if and only if: A is F, and necessarily, anything that is F at any time in its existence is F at all times in its existence. [Mackie 2006: 157-8][34]

Relevantly, we can analyse Weak Aristotelian essential properties using the modal analysis: a property Φ is an essential$_{\text{Weak Aristotelian}}$ property of x iff x is necessarily$_{\text{historical}}$ Φ. Similar stories can be run for different essentialisms: find a suitable sense of necessity, apply (M), and then you have an analysis! So, what kind of necessity we use in (M) doesn't matter – *every* sense of necessity is fine.

But, not all essentialisms are born equal. Metaphysicians who are interested in the essential properties of objects, and who reject an anti-realist or contextualist understanding of such properties – in other words, those who buy into what I earlier called the 'absolute' notion of essential properties - want to know what properties an object *must* have, where the 'must' is, as Kripke suggests, understood 'in the highest degree' [1980: 99].

According to Weak Aristotelian essentialism, *having been born in Oberlin* is an essential property of David Lewis. However, there is a clear sense in which Lewis could have existed without having this property – for instance, he would have still been himself if he had been born in Columbus instead. Consequently, while there might be a proper context for Weak Aristotelian essential properties and therefore for using historical necessity within (M), it is not the one we are interested in here. Such a context is too restricted, failing to including all the relevant *de re* possibilities.

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[34] Mackie derives this brand of essentialism from Lowe [1995], though it is also found in Brody [1973, 1980].

There is a sense of necessity which does include the relevant *de re* possibilities; namely, *metaphysical* necessity. It includes an object's entire collection of *de re* possibilities, unlike the restricted necessities (like historical necessity). In the way, the sense of essentialism we are concerned with is *metaphysical* essentialism. This is because, as Forbes argues,

> Metaphysical essentialism is more fundamental than the ...kinds of essentialism mentioned above, since these latter typically depend upon (alleged) features ... which are themselves accidental, so in ways things could have gone in which [objects] do not have those features, they would not have to have the 'essential' properties that depend on them. [1997: 516]

Thus metaphysical necessity is what we should plug into (M). This forces us to modify (M) slightly, to

(MM) A property Φ is an *essential* property of object x iff x is metaphysically necessarily Φ.

This is a better expression of the modal analyst's thesis. So (M) should be given up in favour of (MM).

An aside on what the commitment to (MM) entails

I wish to make it clear that commitment to (MM) does *not* entail commitment to the idea that metaphysical necessity is an Absolute necessity. This means that essentialists do not necessarily have to respond to the argument made by Hale in his [1996]. There, Hale defines a necessity $\Box_A$ as *stronger* than a necessity $\Box_B$ iff $\Box_A P$ always entails $\Box_B P$, but not conversely,[35] and a necessity $\Box_A$ as *Absolute* iff it is either stronger than or at least as strong as every other kind of necessity.

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[35] Such a relation between necessities will only hold iff $\Diamond_B$ always entails $\Diamond_A$, but not conversely.

Citing an argument of McFetridge's [1990: 136-8], Hale attempts to show that logical necessity is Absolute, and that anyone who thinks that metaphysical necessity is also Absolute is in a dilemma: either there is a sense in which something is metaphysically necessary and logically contingent, or there is not. If it is possible for something to be metaphysically necessary but logically contingent, then logical modality is stronger. Meanwhile, if 'whatever is metaphysically necessary is also logically necessary, then even if we have here two notionally distinct kinds of necessity, both of them absolute, they coincide in extension' [1996: 98]. This is meant to be unattractive because purported metaphysical necessities (e.g. that heat necessarily is mean kinetic energy) do not appear to be *logically* necessary.

Responding to Hale's dilemma is a difficult and messy matter. To that end, it would be best if the commitment to (MM) didn't entail that we respond to Hale one way or the other. Thankfully this is the case. We can quite happily agree that metaphysical necessity is the best necessity to use for analysing essential properties while also agreeing that metaphysical necessity isn't an Absolute necessity. Of course, the essentialist can argue that metaphysical necessity is Absolute, *contra* Hale, but this is beyond the scope of the present investigation;[36] for my purposes, all that matters is that (MM) does not entail a commitment either way.

Similarly, accepting (MM) does not entail that one must accept what we might call *modal monism*, which is the view that all necessities are restrictions upon a single Absolute necessity. While this view is intuitive and has some support in the literature, many have opposed it; Fine [2002] is a prime example. Since accepting (MM) does not entail that metaphysical necessity must be an Absolute necessity, the door is open for being a pluralist about fundamental necessities.

Finally, accepting (MM) does not necessarily block off the possibility that metaphysical essentialism is identical with physical essentialism. This is because accepting (MM) does not entail anything about metaphysical necessity's not being co-extensive with

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[36] See Shalkowski [1994] for an attempt to prove that metaphysical necessity is absolute. It ultimately fails however, because it relies upon grounding metaphysical necessity in essence – and as I have shown, this simply cannot work.

physical necessity. The upshot of this flexibility is that a modal analysis of essence is compatible with the so-called 'Scientific Essentialism' of Brian Ellis [2001, 2002] and of the views of Shoemaker.[37] Of course, equally possible is that metaphysical necessity isn't co-extensive with physical necessity, and thus that physical essentialism isn't the sort of essentialism metaphysicians should concern themselves with. This has been argued for rather persuasively by Fine [1996, 2002], Forbes [1997], Salmon [1989], and Sidelle [2002].

I personally think that metaphysical necessity *is* distinct from physical necessity. There are apparently possible situations where an object violates what is merely physically possible for it – e.g. a situation where Socrates moves faster than the speed of light. A typical move of the physical essentialist to block such possibilities is to suggest that objects could not exist in different worlds where the laws of nature are different because the natural kinds objects instantiate are dependent upon the laws, e.g. the kind **electron** is dependent upon the laws of nature being as they. If there were different laws, then there would be no electrons. There might be **schmelectrons**, which are remarkably similar to electrons but are compatible with different laws of nature, but certainly no electrons. This thought is then coupled with a form of sortal essentialism, according to which it is essential to individual electrons that they be instances of the kind **electron**. Together, these entail that no electron could exist in a world where the laws of nature are different.[38]

This argument is bad on two fronts. First, it depends upon the success of sortal essentialism. For reasons that I will make clear in chapter 6, I think sortal essentialism cannot be motivated without begging the question. This means that one assumption of the Scientific Essentialist's argument should be rejected. Second, the Scientific Essentialist cannot give any reason as to why we should think kinds like **electron** depend upon the laws of nature being as they are. Without such a reason, the other assumption fails too. In this way, physical necessity and metaphysical necessity are not co-extensive. However, this is my personal position –

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[37] See especially his [1998] and [1997]. Further, see Armstrong [1983: 92-3] and Fales [1993].
[38] See Ellis [2001: 248-50]

when it comes to the modal analysis itself, nothing regarding this debate is entailed either way.

So what these three results show is that the modal analysis of essential properties characterized by (MM) does not entail any controversial conclusions when it comes to debates about the nature of modality. The analysis – and (MM) – is compatible with many different views.

Contingent existents, weak necessity, and essential properties: (EDM)

So we've reason to think that (MM) is a better way to characterize the modal analysis of essential properties than (M). However, there is a small problem. Take Cicero, a contingently existing object. By definition, there are some worlds where Cicero does not exist. In those worlds, Cicero has no properties – he simply isn't there to have them. Suppose that Φ is a *de re* necessary property of Cicero's. Since, in the world where he does not exist, Cicero fails to have Φ, it follows that, it is possible for Cicero to ¬Φ. Therefore Φ is not *de re* necessary to Cicero. E.g. if Φ is *being a man*, then it is possible for Cicero to not be a man by not existing. Therefore, *being a man* is not a *de re* necessary property of Cicero's. In this way, it appears that contingent existents cannot have any *de re* necessary properties. Given (MM), it then follows that contingent existents cannot have any essential properties either.

This is a clearly unfavourable result. To reconcile the essential properties of contingent existents and the modal analysis of essential properties, there are a few options. One is to reject the assumption that objects cannot have properties at worlds where they do not exist; if objects can have properties at worlds where they do not exist, then Cicero can have the property of being a man even at those worlds where he is absent.[39] The difficulty with this option is that it is counter-intuitive that non-existent objects have properties; existence seems to be a pre-condition to any qualitative nature.[40]

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[39] A variation on this story would be an account like the worldly/unworldly story Fine offers in his [2005b].
[40] See Mellor [1995], cf. Plantinga [1983].

Another option, and one that is more straightforward, is to follow Kripke in understanding *de re* necessary property predications in terms of 'weak' necessity,[41] where an object weakly necessarily has a property iff whenever the object exists, it has the property 1971: 137]. Thus to say that Cicero is *weakly necessarily human* is to say that, necessarily, if Cicero exists, then he is a human. This gives us the following equivalence schema:

(WN) A property Φ is a *weak necessary* property of object *x* iff necessarily (x exists ⊃ x is Φ)

The benefit of (WN) is that it allows Cicero to have a *de re* necessary property without requiring that he exist in all possible worlds: in virtue of the truth conditions for the material conditional, the only way that Cicero would fail to have the property is if there is a world where Cicero exists and he does not have the ascribed property – worlds where he doesn't exist aren't counter-examples.

Following this Kripkean line, the modal analyst (hereafter, 'modalist') can take care of contingent existents' essential properties by analysing essential properties in terms of *weak* necessary properties. So the essential property *being essentially human* can be analysed as *being weakly necessarily human*, giving us

(WMM) A property Φ is an *essential* property of object *x* iff *x* is metaphysically weakly necessarily Φ.

Now, because weak necessity amounts to satisfying a *de dicto* necessary conditional, we can turn (WMM) into

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[41]Note that the sense of 'weak' here is distinct from Hale's sense of strong and weak necessity we were employing a few sections ago with regards to types of modality.

(EDM) A property Φ is an *essential* property of object *x* iff metaphysically necessarily, if x exists, then x is Φ.

Here we have a workable modal analysis of essential properties in terms of the standard reading of a necessity operator applied to an existential conditional, which does not require that an object exist in every possible world in order to have a property essentially.

The analysis characterized by (EDM) is an 'existence-dependent' analysis; it can be contrasted with the 'standard' analysis found in (MM) which fails to handle the essential properties of contingent objects. Existence-dependent understandings of essential properties have numerous supporters in the literature; indeed, Correia says that 'these accounts of essentialist statements are so widespread that it would be pointless to give references' [2005: 26]. For the sake of thoroughness, I offer the following:

> [Citing the example of a lectern] What are its essential properties? What properties, aside from trivial ones like self-identity, are such that this object has to have them if it exists at all, are such that if an object did not have it, it would not be that object? [Kripke, 1971: 151-2]

> An essential property of x is any property of x such that either x does not exist, or x has this property. (Or, in the language of possible worlds, a is necessarily F iff x is F in every possible world in which a exists.) [Wiggins 1976: 301]

> If an object has a property essentially, it has that property in every possible world according to which it exists. If an object has a property accidentally, it does not have that property in every possible world according to which it exists. Claims about an object's essential or accidental properties are *de re* modal claims, and essential and accidental properties are *de re* modal properties. [Paul 2006: 333]

> The distinction between the essential and the accidental is almost always understood in modal terms: a thing's essential features are taken to be those without which it cannot exist, its accidental features those it has but can exist without. [Gorman 2005: 276]

> …it would not follow that organisms belong to their respective kinds essentially. The latter would have to be admitted only if every member of any natural kind possessed its kind's defining structure in every possible world in which that member exists. [LaPorte 1997: 97] [42]

I am in line with this group in supporting the existence-dependent analysis: it is the best of the modalist analyses, since it captures the notion of an object's absolute essential properties and solves the problem of contingent existents. To that end, I think (EDM) is close to what we are looking for in an analysis answer.

Defending (EDM)

The modal analysis is not out of the woods yet; in particular, there are three issues to deal with. First is the dismissal of an alternative modal analysis, the *identity-dependent* analysis. Second is a trio of objections of McLeod's, aimed at proving weak necessity fails to handle the problem of contingent existents. Third, and most importantly, is an objection by Kit Fine, which shows that all versions of the modal analysis (not just (EDM)) entail the wrong essential properties.

The identity-dependent analysis: (IDM)

A competitor with the existence-dependent analysis is the *identity-dependent analysis,* characterized by the principle:

> (IDM) A property Φ is an *essential* property of object *x* iff necessarily, if x is itself, then x is Φ.

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[42] Brody [1973: 359-60] characterizes essential properties as those properties an object has in all possible futures it exists in. This is an existence-dependent analysis, but one which disagrees about employing metaphysically necessary properties in place of something like historically necessary properties.

One can find modern supporters of (IDM) instead of (EDM): Woods suggests that 'a property is essential if and only if, for anything having it, its failure to have it would result in there being no such thing as it.' [1971: 185], while Paul asserts that 'an object O has property P essentially when O must have P in order to be the object that it is' [2004: 170].

The problem with the identity-dependent analysis is that it appears to collapse either into the standard analysis characterised by (MM) or into the existence-dependent analysis characterised by (EDM). The identity condition in (IDM) either has existential import or it does not. Suppose that it does. Then, x's 'being itself' entails x's existence, in which case (IDM) entails (EDM); so the identity-dependent analysis collapses into the existence-dependent analysis. Meanwhile, suppose that the identity condition does not have existential import, such that x's being itself does not entail x's existence. In that case, (IDM) does not entail (EDM). However, to resolve the problem of contingent existents having essential properties, one would have to reject the assumption that non-existent objects cannot have properties. If so, (IDM) would then entail (MM), since at every world an object is itself. Consequently, the identity-dependent analysis would collapse into the standard analysis. This is enough to warrant the rejection of the identity-dependent analysis. When we couple this with the earlier rejection of the standard analysis, the existence-dependent analysis looks that much better.

McLeod's objection to weak necessity

However, there might be a problem: in his [2008], Stephen McLeod raises a series of objections to the notion of weak necessity, arguing that it either collapses into absurdity or entails that every object necessarily exists. If he is correct, the notion of weak necessity cannot be employed as a bridge from essentiality to necessity, which undermines the existence-dependent analysis of essential properties. For this reason, McLeod's objection must be dealt with. In the following sections I show how McLeod's objections are unsuccessful, thereby

protecting the existence-dependent analysis. I first examine two of McLeod's minor arguments, before turning to his major argument, an attempted *reductio*.

The existence objection

McLeod's first argument turns upon plugging into the equivalence schema (WN) the property of *existence* for some contingent existent, [43] e.g.

Cicero necessarily exists ↔ necessarily (Cicero exists ⊃ Cicero exists)

Now, the right side of the schema is trivially true, due to the truth conditions of the material conditional. This entails the trivial truth of the left side – it is trivially true that Cicero necessarily exists. However, Cicero is a contingent existent, which entails that Cicero does not necessarily exist. This entails that (WN) is false. Thus we have McLeod's existence objection: 'it is false… that Cicero necessarily exists. Yet it is necessary that if Cicero exists then Cicero exists. So we have counter-example to the equivalence' [2008: 317].

It gets worse: not only do actual contingent existents like Cicero necessarily exist, but non-actually existing contingent existents do too. Since it is trivially necessary that if Sherlock Holmes exists, then Sherlock Holmes exists, Holmes, much like Cicero, trivially satisfies the left-side of the equivalence schema. In other words, Holmes necessarily exists. Since Sherlock Holmes does not actually exist, (WN) is even less attractive.

To respond to McLeod, we must clarify what property we ascribe to Cicero when we say 'Cicero necessarily exists'. There are *two* properties this might involve: one is the property whose satisfaction requires that an object exist at every possible world, the other the property

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[43] This argument does not require that existence be a *property* – only that 'exists' be a predicable expression. McLeod demonstrates this point [2008: 317-8], and I am happy to grant it to him for the sake of the argument since my response works whether existence is a property or a predicate. For convenience's sake, I will continue to speak of existence as if it is a property.

whose satisfaction conditions are such that in every world in which an object exists, it exists.[44]
To distinguish the two, I'll refer to the first using '**necessary existence**' and '**essential existence**' for the second.[45]

These properties are not the same. For one, they have different satisfaction conditions, and they also have different contrary properties: the contrary property to **necessary existence** is *contingent existence,* the property whose satisfaction requires that there be at least one possible world where an object fails to exist. Meanwhile, it isn't even clear what the contrary property of **essential existence** would be; perhaps it is the contradictory property *not being such that if an object exists at a world, it exists at that world*. What is clear is that having **necessary existence** at a world entails having **essential existence** at that world, while having **essential existence** does not entail **necessary existence**. Finally, the two also have different extensions: few objects have the property of **necessary existence** (most, if not all, the material objects we encounter in our everyday lives have its contrary, *contingent existence*) [46], but absolutely everything has **essential existence**.

That both of these properties can be referred to by the same expression makes 'Cicero necessarily exists' ambiguous: is the 'necessary existence' therein **necessary** or **essential existence**? For the objection to be troubling, McLeod must show that it is **necessary existence**. However, the trivial truth of the conditional 'if Cicero exists, then Cicero exists' does not entail that Cicero has the property of **necessary existence** - though it does entail Cicero's trivially having **essential existence** (unsurprisingly).

So the response to McLeod's argument is clear. There are two different properties, **necessary** and **essential existence**. Distinguishing the properties, the Kripkean can show that

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[44] Again, these need not be genuine properties, as they could instead merely be predicates. As before, nothing here hinges upon the matter, but for convenience, I'll talk as if they are properties.

[45] I break from my conventions of italicizing the names of properties for this section in order to make the distinction between these different senses of 'necessary existence' clear. This new convention will only apply for the remainder of the discussion of McLeod's objections.

[46] The exception might of course be Timothy Williamson; See Williamson [2002] and Efird [2009] for a reply.

the trivial truth of the necessary conditional does not entail **necessary existence**, and therefore that Cicero is not a contingent existent. That takes care of the existence objection.

The necessary non-existents objection

A second objection is that according to (WN), every necessary non-existent essentially has every property. Take a necessary non-existent, the Round-Square. Clearly,

(R) Necessarily, if the Round-Square exists, it is round

is vacuously true. This is the case no matter what property we plug into the consequent place. As such, plugging in the property of **necessary existence**, we get

(R') Necessarily, if the Round-square exists, it has necessary existence

which is trivially true. This means that necessary non-existents appear to have the property of existing in every world, clearly contradicting how we explicitly defined them. For this reason, (WN) must be rejected.

There is a straightforward response to this objection: if something is a necessary non-existent, then it simply isn't. Since objects that don't exist can't have properties, it follows that objects that necessarily don't exist necessarily can't have properties. Thus the Round-Square can't have any properties, let alone any essential properties. Clearly, we should not be concerned with what properties our logic vacuously entails that these necessarily non-existent 'objects' have. Let the Round-square be necessarily round, non-round, and everything else; such assertions are, if meaningful, irrelevant. So much the worse for the Round-Square, and for this objection.

The reductio

McLeod's strongest objection to weak necessity is an attempt at a *reductio* upon the weak necessity equivalence schema, which goes as follows:

(1)	Some objects exist contingently.	[Premise]
(2)	Cicero exists contingently.	[Assumption]
(3)	For all x: (x exists contingently $\supset$ x does not necessarily exist)	[Theorem]
(4)	If Cicero exists contingently then ¬(Cicero necessarily exists).	[3, UE]
(5)	For all x: x is necessarily Φ $\leftrightarrow$ necessarily (x exists $\supset$ x is Φ).	[Assumption]
(6)	For all x: necessarily (x exists $\supset$ x exists).	[Theorem]
(7)	Cicero necessarily exists $\leftrightarrow$ necessarily (Cicero exists $\supset$ Cicero exists).	[(5), UE]
(8)	Necessarily (Cicero exists $\supset$ Cicero exists).	[(6), UE]
(9)	Cicero necessarily exists.	[(7),(8)]
(10)	¬Cicero necessarily exists.	[(2),(4), MPP]
(11)	Cicero necessarily exists and ¬Cicero necessarily exists.	[(9),(10), &I]
(12)	¬ (For all x: x is necessarily Φ $\leftrightarrow$ necessarily (x exists $\supset$ x is Φ)).	[(5), (11), RAA][47]

If this argument is correct, McLeod has successfully demonstrated that the Kripkean account of weak necessity entails a contradiction. Unfortunately for McLeod – and thankfully for the existence-dependent analysis of essential properties – the argument is invalid, relying upon an equivocation between the two meanings of 'necessarily exists'.

Note again the distinction between our two senses of 'necessary existence': '**necessary existence**' expresses the property of *existing at all possible worlds*, and '**essential existence**' the property of *existing if one exists*. When we plug these properties into McLeod's *reductio*, we can clearly see the equivocation:

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[47] [McLeod 2008: 323] See Wiggins [1976: 302-3] for an argument which is similar.

(13) Some objects exist contingently.

(14) Cicero exists contingently.

(15) For all *x*: (*x* exists contingently ⊃ *x* does not **necessarily exist**).

(16) If Cicero exists contingently then ¬(Cicero **necessarily exists**).

(17) For all *x*: *x* is essentially Φ ↔ necessarily (*x* exists ⊃ *x* is Φ).

(18) For all x: necessarily (x exists ⊃ x exists).

(19) Cicero **essentially exists** ↔ necessarily (Cicero exists ⊃ Cicero exists).

(20) Necessarily (Cicero exists ⊃ Cicero exists).

(21) Cicero **essentially exists**.

(22) ¬Cicero **necessarily exists**.

(23) Cicero **essentially exists** and ¬Cicero **necessarily exists**.

This conclusion states that Cicero **essentially exists** but only *contingently exists,* which is not a contradiction; to assume that it is conflates the property that everything trivially has with the property we think only special entities (e.g. God, π, {God, π}) have.

The only way to derive the contradiction is to change all of the '**essentially exists**' to '**necessarily exists**'. But this would be either conflating the two properties, which is a mistake, or an act of re-naming – i.e. not replacing the property **essential existence** with the property of **necessary existence**, but rather re-naming the property **essential existence** as '**necessarily exists**'. If you did this, then you might think that (23) is a contradiction but that would only be because you were suckered in by the homonymy of the names.

Something like this is what happens in McLeod's argument: by not being clear on what 'necessarily exists' refers to, McLeod tries to pull the wool over the Kripkean's eyes. McLeod concludes his argument, 'we have now generated the contradiction that some concrete objects exist contingently and that no concrete objects exist contingently' [2008: 324], but when we distinguish between the two properties, this should say, 'we have now generated the contradiction that some concrete objects exist contingently and no concrete object **essentially exists** contingently.' There is of course no contradiction here.

Finishing up with McLeod's objections

I have endeavoured to demonstrate that weak necessity is under no threat from McLeod's objections, once we distinguish between the properties *existing in all possible worlds* and *existing if you exist*. Given the difference between these two, the objections melt away, leaving weak necessity viable. So where does this leave the existence-dependent analysis? With weak necessity secure, we can understand essential properties in terms of necessity conditionals, exactly as the existence-dependent analysis suggests. However, the objection in the following section is a major difficulty, not only for the existence-dependent analysis, but for modal analyses in general.

Fine's objection

In his [1994], Kit Fine has argued that any attempt to analyse essential properties in modal terms is fundamentally misguided. His objection has been amazingly influential within the essence literature; indeed, it is frequently taken to be modalism's death blow by those essentialists who reject the modal analysis.[48] At its core, the objection is that there are some properties an object has necessarily but not essentially. Fine offers four versions of the objection, each of which employs a different property, but any one of which is sufficient to entail that a modal analysis of essential properties is impossible.

Before we launch into the objections, we should note that Fine implicitly assumes an *abundant* notion of properties, such that (almost) every intelligible predicate picks out a property. Thus *being such that the Eiffel Tower is a tower* is a genuine property, as is *being such that Kit Fine wrote an article entitled 'Essence and Modality'*. This abundant notion of properties will be important later, so I wish to flag it now. Further, in light of the above argument for the existence-dependent analysis being superior to any of the other modal analyses, I here present Fine's objections as if they were directed only at (EDM). However, as I mentioned, it can be altered so as to apply to *any* modal analysis.

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[48] See Correia [2005, 2007], Oderberg [2007], Jenkins [2005], and Lowe [1998, 2006, 2008].

Necessary Truth

The first version of the objection attempts to show that every necessary truth is, when converted to a suitable property, essential to every object. Take a necessary truth, e.g. that there are infinitely many prime numbers. In virtue of it being necessary, at all the worlds where Socrates exists there are infinitely many prime numbers. As such, in every Socrates-world, Socrates has the property *being such that there are infinitely many prime numbers.* According to (EDM), this property is therefore essential to Socrates. However, 'it is no part of Socrates' essence that there be infinitely many prime numbers or that the abstract world of numbers, sets, or what have you, be just as it is' [Fine 1994: 5]. Thus the modal analysis entails that Socrates essentially is such that there are infinitely many prime numbers, but this property is not essential – it is only necessary.

Further, assume that the Eiffel Tower has the essential property of *being a tower*. According to (EDM), this entails that necessarily, if the Eiffel Tower exists, then it is a tower. Applying the same reasoning as above, in every world in which he exists, Socrates has the property *being such that if the Eiffel Tower exists, it is a tower.* Further, the Eiffel Tower has the property of *being such that it is essential to Socrates that he is such that it is essential to the Eiffel tower that it is a tower* in every world it exists... and so on.

According to Fine, it isn't essential to Socrates that the Eiffel Tower is essentially a tower - if it were then grasping one object's essence would require grasping all the essential properties of everything else as well. This leads Fine to quip, 'O happy metaphysician! For in discovering the nature of but one thing, he thereby discovers the nature of all things' [1994: 6]. This application of properties generated from necessary truths shows that there are some properties objects have necessarily but not essentially, *contra* the modal analysis.

Existence

The second version of Fine's objection attempts to demonstrate that (EDM) entails the essential existence of every object. It is trivially true that in every world where a thing exists, it exists, so the property of *existence* is essential to every object. This conclusion is counter-intuitive, according to Fine: having every object be an essential existent threatens our intuitions that there might be special entities which are 'essential beings' - beings whose essence include their existence [1994: 2]. If *everything* is an essential being, then we lose the ability to separate out the special entities – God, numbers, etc. - from the more mundane, non-essential entities. Ergo we must reject (EDM).

Distinctness

A third version of Fine's objection stems from accepting the necessity of distinctness,

> (ND) If x is distinct from y at some world w, then necessarily x is distinct from y.

Since Socrates and the Eiffel Tower are distinct in the actual world, given (ND), they are necessarily distinct. Consequently, in every world where he exists, Socrates has the property *being distinct from the Eiffel tower.* According to (EDM), this is essential to Socrates. Again, Fine argues that this is counter-intuitive: 'it is not essential to Socrates that he be distinct from the Tower; for there is nothing in his nature which connects him in any special way to it' [1994: 5]. If Fine is correct, then here again is a property that an object necessarily but not essentially has.

Membership

The final version of the objection aims to show that a principle of modal set-theory,

(S) Necessarily, if *x* exists, *x* belongs to {x}

entails, on the modal analysis, that every object essentially belongs to its singleton. Take Socrates. Given (S), it follows that at every world where Socrates exists, Socrates has the property of *being a member of {Socrates}*. Therefore, by (EDM), Socrates essentially is a member of {Socrates}.

This is, according to Fine, intuitively repulsive: Socrates' being a member of a set has nothing to do with his nature – though having certain members certainly is relevant to the nature of {Socrates}. After all, having certain members just is what it is to be a certain set. Thus our analysis of essence should, according to Fine, entail that {Socrates} essentially *has as a member Socrates*, but should not entail that Socrates essentially has the property *being a member of {Socrates}*. Since the modal analysis cannot capture this asymmetry, it entails the wrong essential properties.

Problematic conclusions

There are two conclusions that we can draw from these objections. The first is what I'll call the 'strong' conclusion; this is that the modal analysis is the incorrect analysis of essential properties because it entails the wrong essential properties, e.g. *being a member of {Socrates}* is not an essential property of Socrates, but the modal analysis implies that it is. Therefore the modal analysis is wrong. We can contrast this with the 'weak' conclusion, where we should reject the modal analysis not because it entails the wrong essential properties, but because it 'settles matters of substance' regarding the extension of essential properties.

Discussing the Distinctness argument, Fine says:

> Nor is it critical to the example that the reader actually endorse the particular modal and essentialist claims to which I have made appeal. All that is necessary is that he should recognize the intelligibility of a position which makes such claims. *For any reasonable account of essence should not be biased towards*

one metaphysical view rather than the other. It should not settle, as a matter of definition, any issue which

we are inclined to regard as a matter of substance. [1994: 5, my emphasis]

Here Fine is clearly pushing for the weak conclusion.

Additional support comes from Correia's [2007] reading of Fine. Correia argues that the non-essentiality of the properties used in Fine's objections 'should be compatible with any general account of essence' [2007: 66]. General metaphysical theories should not settle 'substantial' issues, lest they bias the debate against certain (potential) positions. Since the modal analysis forces us to pick sides about certain issues, it must be rejected.

Given this conception about general metaphysical theories, the modal analysis is clearly unacceptable. Of course, one has to wonder *why* we should think that theories about the nature of essential properties that entail the essentiality of some properties is a bad thing. Fine and Correria have simply asserted that we should not accept any positions which settle certain matters. Frankly, I see no reason to accept this assertion – especially once we see the consequences of doing so.

Suppose that we couldn't accept any analysis of modality which settled any substantial issues. If so, Lewis's modal realism, linguistic ersatzism, and modal fictionalism are all ruled out. In fact, any analysis of modality that requires that possible worlds be logically consistent should probably be rejected, since it settles certain issues about the nature of logic. Any set theory that stipulates limitations on the nature of the set hierarchy (or that even suggests there is a hierarchy) has to go. Theories of time that imply some substantial matters – i.e. any A or B theory of time – must be rejected. Finally, to shift subject areas, any analysis of the ethical notion of good goes out the window if it says anything about the truth (or falsity) of contested moral claims – someone should tell the meta-ethicists that their discipline is methodologically bunk.

This makes it clear that if we accept the weak conclusion, we cannot offer *any* sort of analysis of *any* notion at all, for every worthwhile analysis settles *some* substantial points – otherwise, it just isn't an analysis. If, any time that we offer an analysis we're duty bound to

reject it if it 'settles any substantial issue', then we are stuck with a very poor way of doing philosophy in general, not just metaphysics.

The upshot is that if Correia (and the Fine of the above quote) are correct about the weak conclusion being what Fine's objection entails, then the modalist is not in any hot water: just because the modal analysis forces us to accept that *some* properties are essential is not a good reason to reject it. Unfortunately, charity demands that I read Fine's objection as implying the strong conclusion, according to which the modal analysis should be rejected because it entails the *wrong* essential properties. Evidence for this reading of Fine's objection is in [1994] as well; discussing the Membership argument, Fine says

> *It is no part of the essence of Socrates to belong to the singleton.* Strange as the literature on personal identity may be, it has never been suggested that in order to understand the nature of a person one must know to which sets he belongs. *There is nothing in the nature of a person*, if I may put it this way, *which demands that he belongs to this or that set or which demands ...that there even be any sets.* [1994: 4, my emphasis]

This certainly sounds like Fine is asserting facts about what is and is not essential to Socrates.

Three (bad) responses

Having now presented the four versions of the objection and argued that they are intended to show that modalism entails the *wrong* essential properties, it is time to return fire: in the following sections, I look at three responses modalists might offer in reply to Fine. Unfortunately, these are, as I will show, bad. The first response bites the bullet and concludes that the properties Fine employs *are* essential to Socrates. Meanwhile, the second response takes a different tack, modifying the modal analysis of essential properties in an attempt to dodge Fine's objections. This response is based upon a suggestion of Della Rocca's that we must distinguish between trivially essential and non-trivially essential properties. Finally, the third response, suggested by Gorman, attempts to distinguish between those properties that

are 'features' of an object and those which are 'characteristics'. This takes us to the end of this chapter, where I conclude that Fine's objection appears to leave the modal analysis in jeopardy.

Biting the Bullet

The first response is straightforward: a supporter of the modal analysis can just accept that the properties in Fine's objections are essential properties, *contra* Fine – as the old adage goes, one man's *modus ponens* is another man's *modus tollens*. By accepting these properties as essential, the Bullet-Biter prevents Fine's objection from doing the modal analysis any harm.

The problem with the response is just as straightforward as the response itself: Socrates ends up essentially being a member of {Socrates}, being distinct from the Eiffel Tower, being such that necessarily there are infinitely many prime numbers and existing. As Fine notes, this is a quite unattractive collection of essential properties – maybe not ugly enough to force us to reject the modal analysis, but certain enough to make us desirous of better response. For that reason, bullet-biting should be the last-ditch option for the modalist – any response that doesn't imply these counter-intuitive essential properties is preferable. So, while the modalist *can* go this way, I would suggest they look elsewhere.

The trivial modal analysis response

A second reply to Fine's objections centres upon distinguishing between *trivial* necessary properties and non-trivial or *substantial* necessary properties. In his [1996], Della Rocca makes the following argument:

> Essentialists attempt to discover what properties are required to be a particular thing A. Typically the aim in so doing is to offer an account of what is required to be A that goes beyond the kinds of facts we can learn about A simply from the general fact that A is a thing. What we can learn from this general fact does not reveal the specific character of A and is, for that reason, trivial. Properties that are

necessary to A but which stem merely from the general fact that A is a thing are thus called trivial necessary properties. [1996: 3]

A property can be a trivial necessary property in one of two ways. The first way is by being a property that is necessary to every object simply in virtue of that object's being a thing; these are properties like *being a man if a bachelor*, *being self-identical*, and *being either round or not round*. Such properties are universally necessary. To see the second way,

Consider a property F which A has necessarily but which is not universally necessary. A's possession of F fails to be grounded in A's specific nature if A's possession of F logically follows from A's possession of G, where G is universally necessary.

Della Rocca offers the example of *being identical to A*, which is a property that only A necessarily has. This property can be derived from A's having the property *being self-identical*, which is a trivial property of the first kind. And,

since we can derive the fact that A has the property of being necessarily identical to A without having any information about A's qualities other than the trivial fact that A is self-identical, the property of being identical with A is, though necessary, trivially so. [1996: 3]

Thus we get the following definition of trivial necessary properties:

(T) A property Φ is a *trivial necessary* property of object x iff x necessarily has Φ and either (i) all objects necessarily have Φ or (ii) Φ is a logical consequence of some property Ψ that all objects necessarily have.

With (T), the modalist can distinguish between the trivial necessary properties of an object and the non-trivial or substantial necessary properties. Then, citing the fact that trivial necessary properties tell us nothing about the nature of particular objects, the modalist could

offer a modified version of (EDM) which excludes these properties:

> (TEDM) A property Φ is an *essential* property of object *x* iff (i) necessarily, if x exists, then x is Φ; and (ii) Φ is not a trivially necessary property.[49]

Shifting from (EDM) to (TEDM), the modalist can argue that properties Fine employs within his objections are all trivial necessary properties and therefore fail to satisfy the conditions for being essential. First, the properties *being such that there are infinitely many prime numbers* and *existing if one exists* are trivial in the first sense – they are necessary of every entity. Meanwhile, the properties *being distinct from the Eiffel Tower* and *being a member of {Socrates}* are trivial in the second sense. Regarding the former, reasoning similar to the property *being identical to A*'s being trivially necessary applies: everything has the trivial necessary property of *being distinct from distinct objects*, from which we can derive *being distinct from the Eiffel Tower,* which everything other than the Tower trivially necessarily has. Ergo, this property is trivially necessary and so cannot be essential. Regarding the latter, every entity has the trivially necessary property of *being a member of the singleton set containing only one's self*. Applying this to Socrates, we can derive the trivial necessary property *being a member of {Socrates}*. Since trivial properties cannot be essential properties, Socrates is not essentially a member of {Socrates}. For these reasons, the trivial modal analysis looks like an attractive way to respond to Fine's objections.

Unfortunately, this account stumbles into a series of other problems. First, take a property which lists every possible kind an object might be an instance of, e.g. a property like *being either a man, or a mountain, or a zebra, or a stuffed dinosaur, or a…* that only excludes the kind **cup**. Now, this property is neither trivially necessary in the first sense (since there are some objects – namely, all the cups – which fail to have this property), nor is it trivially necessary in the second sense; after all, there is no trivial necessary property which this

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[49] I should make it clear that Della Rocca himself does not advocate the position characterized by (TEDM); if anything, he remains sceptical about essential properties.

gerrymandered property can be derived from. Yet if we assume that Socrates essentially is a man, as many essentialists do, it follows that Socrates essentially has this property too. Clearly, having such a property is just as intuitively repulsive as having the property *being a member of {Socrates}*, if not more so. So while the trivial modal analysis dodges some problematic properties, it doesn't dodge them all.

Further, it can be shown that *every* necessary property is a trivial necessary property. Assume that it is necessary to Socrates that he is human. If so, every entity has the trivial necessary property of *being Socrates and a human being or not being Socrates*. Now, without citing any information about Socrates other than the trivial fact that Socrates is self-identical, we can see that the property *being Socrates and a human being* is trivially necessary to Socrates. Then, from this trivial necessary property, we can derive the trivial necessary property of *being a human being* for Socrates. Since trivial necessary properties cannot be essential properties, Socrates is not essentially a human being. Similar reasoning can be applied to every necessary property of Socrates. In this way, the trivial modal analysis entails that every object has no essential properties.

These two results are enough to motivate rejecting the trivial modal analysis. While it might be fruitful to distinguish between trivial and substantial necessary properties, it is a mistake to plug this distinction directly into the modal analysis in an attempt to respond to Fine – doing so only leads to more difficulties.

Gorman's 'characteristic' response

A third reply to Fine is one suggested by Gorman in his [2005].[50] The response starts from the idea that, whatever kind of fact it is that there are infinitely many primes, it is not a fact about Socrates. Saying that Socrates has the property of *being such that there are infinitely many*

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[50] While Gorman himself goes on to offer a different, non-modal analysis of essential properties (analysing essential properties in terms of *explanation*, an ontic relation between things that accounts for why things are the way that they are), he offers this response to Fine as a possible avenue for the modalist to pursue.

primes 'provides no information about what he is like, and therefore a fortiori it provides no information about what is essential to him' [2005: 278].

With an eye towards distinguishing between those properties that tell us something about what Socrates is and those that don't, Gorman suggests we distinguish between the 'features' of an object, which are *all* the properties an object has, and the 'characteristics', which are those properties that 'really characterize' an object – i.e. that tell us something about what an object is. Gorman admits that the line between the two is hard to draw but insists that doing so is 'important'.

Now, employing the distinction between features and characteristics, the modalist can offer the following variation on (EDM):

(CEDM) A property Φ is an *essential* property of object *x* iff (i) necessarily, if x exists, then x is Φ; and (ii) Φ is a genuine characteristic of x.

With (CEDM), the modalist could argue that the properties Fine uses in his objections are all mere features, and so could not be essential properties of Socrates. They are not features for exactly the reasons that Fine himself cites: they do not, in some vital sense, tell us anything about what Socrates *is*.

This characteristic modal analysis looks like a good way to respond to Fine because it allows the modalist to dodge Fine's objections. However, it is entirely unclear what it means for a property to be a 'characteristic' instead of a mere 'feature'. Gorman offers us no conditions for being a genuine characteristic, other than the fact that they are those properties that 'really characterize' an object, which is entirely unhelpful. In this way, the distinction between features and characteristics – and therefore the response itself – looks entirely *ad hoc*.

Consequently, I think that this response to Fine must be rejected. In some sense, Gorman's response to Fine is attractive – indeed, the response that I offer in the next chapter is similar to Gorman's, but uses a different mechanism to distinguish between the good and

bad necessary properties. Yet because Gorman does not explain how the distinction between features and characteristics is meant to be drawn, his response is fundamentally unworkable. If Gorman gave us more information, perhaps it would be feasible. Until then, modalists cannot go down this route.

A cliff hanger conclusion

The modal analysis has hit a major snag in the form of Fine's objection. If Fine is correct, the modal analysis entails the wrong essential properties. Consequently, it must be abandoned in favour of some other understanding of essential properties, and nothing that we have seen so far amounts to anything like a good response to Fine. With no response, we would be set straight back to square one when it comes to answering the Analysis Question. Thankfully, all is not lost: there is a response to Fine. It is offering this response – and thereby finally, definitively answering the Analysis Question – that I turn to in the next chapter.

Replying to Fine: Sparse Modalism - Chapter 5

In this chapter, I present a new hope for the modalist: an analysis of essential properties as those *sparse* properties which satisfy the existence-dependent criteria. By including the sparseness condition within the modal analysis, Fine's attack can be defeated. After re-assessing the form of Fine's objection, I note that a key element is the thought that only certain properties are relevant to an object's being itself and therefore are eligible for being essential. This leads to a discussion of the sparse/abundant property distinction and its relation to relevancy. I then present two new modalist principles, (SPM) and (SRM), which incorporate the lessons of sparseness and relevancy. I then put these principles to the test, showing how the properties Fine employs in the variations of his attack are not counter-examples to this *sparse* modal analysis. After dismissing some potential objections, I conclude with a challenge for Fine: find a counter-example property to sparse modalism. The upshot for the overall investigation is that the sparse modal analysis appears to be the best answer to the Analysis Question going; consequently, I conclude Part I with this chapter.

The core of Fine's argument

Underlying the four variations of Fine's argument is a single argument structure into which Fine plugs a variety of properties:

(1) For some property Φ, necessarily, if Socrates exists, then Socrates is Φ.

(2) By (EDM), Φ is therefore an essential property for Socrates.[51]

(3) However, Φ isn't an essential property for Socrates.

(4) From (2) and (3), (EDM) entails that a non-essential property is essential to Socrates.

(5) Therefore, (EDM) should be rejected as an analysis of essential properties.[52]

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[51] Where (EDM) says that a property Φ is an *essential* property of object x iff necessarily, if x exists, then x is Φ.

This argument structure forms the backbone of Fine's objection; all that must be added to it are the particular properties that Fine would have us plug in. He cites the properties of *being such that there are infinitely many prime numbers, being such that the Eiffel Tower is essentially a tower, existing, being distinct from Eiffel Tower,* and *being a member of {Socrates}.*

The argument is clearly valid, so the modalist must reject one of the premises. We can either deny that Φ satisfies the requirements for satisfying (EDM) – either by denying (1) or altering (EDM), or accept that Φ is an essential property and thus deny (3). The challenge is to make any of these moves without being *ad hoc.*

In my eyes, salvation can best be found through following both options: after all, while it would be convenient to have a single counter to all of Fine's variations on the argument, the right response may of course vary from property to property. I suggest that the best response is to alter (EDM) in such a way as to permit the denial of (2) for most of the properties Fine offers, while only occasionally making a case for the denial of (3). To motivate this alteration of (EDM), I turn to Fine's own reasoning for (3); once the justification Fine offers for it is clear, the pathway to a change in (EDM) opens.

Relevance and essentiality

What justifies (3) when we plug in the property *being distinct from the Eiffel Tower*? Here Fine is quite clear:

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[52] This argument structure applies only if Fine is taken to be arguing for what I've termed the 'strong' conclusion that the modal analysis entails the wrong essential properties. If we read Fine as arguing for the 'weak' conclusion (i.e. that the modal analysis settles substantial issues), the argument structure is:

> (1) For some property Φ, necessarily, if Socrates exists, then Socrates is Φ.
> (2) By (EDM), Φ is an essential property for Socrates.
> (3) It is an open question whether Φ is an essential property for Socrates.
> (4) Our analysis of essential properties must not settle any open questions.
> (5) Therefore (EDM) should be rejected as an analysis of essential properties.

The best response to this argument is to simply reject (4), as I suggested in the previous chapter.

…it is not essential to Socrates that he be distinct from the Tower; for there is nothing in his nature which connects him in any special way to it. [1994: 4]

Thus the justification for taking *being distinct from the Eiffel Tower* as non-essential to Socrates is that it is not a 'part of Socrates' nature'; re-phrasing slightly, we can say that the property is not 'relevant' to Socrates. This gives us a necessary condition for being an essential property of Socrates: being relevant. Great. So what is relevance? I.e. what are the conditions for being a relevant property?

One answer we could give, and indeed, the answer that Fine does give, is:

What is it about a property which makes it bear, in the metaphysically significant sense of the phrase, on what an object is? It is in answer to this question that appeal is naturally made to the concept of essence. For what appears to distinguish the intended properties is that they are essential to their bearers. [1994: 2]

This characterization of relevancy is explicitly circular: a property is relevant to an object because the property is essential, and is essential (at least in part) because it is relevant to an object's being itself. While such a circle is not necessarily a bad thing, a preferable story would be one where we use some notion other then essentiality to explain what it means to be relevant, allowing for the subsequent use of relevancy in explaining essentiality.

This highlights an exploitable weakness in Fine's argument: find some explanation for relevancy. This condition can then be incorporated into the modal analysis – and this alteration of the analysis would not be *ad hoc* because it relies upon the link between relevancy and essentiality to which Fine is already committed. With an eye towards what relevancy is, let us turn to the distinction between sparse and abundant properties.

Properties: Sparse & Abundant

The primary role properties play is to account for how something is: a basketball's being round is constituted by the ball's instantiating the property *being round,* Socrates' being a man is constituted by his instantiating the problem *being a man*, etc. This view about what properties do is standard metaphysical doctrine. There are other, related roles too: properties can be employed to account for qualitative similarity – two round basketballs are similar in virtue of both instantiating the same property, *being round,* Socrates and Cicero are similar in virtue of both *being men*.[53]

So properties constitute the qualities that objects have. But not all properties are suited to play the qualitative role: *being such that Al Gore was the 45th Vice President then later won a Nobel Prize* isn't a genuine way that something can be, unlike, say, *having negative charge* (or *being round*, for that matter).[54] In this way, we need to distinguish between those properties that are genuinely qualitative and those that are not.

Following Lewis, call the qualitative properties 'sparse' or 'natural' properties. If we need to characterize them, we might say that

> Sharing of them makes for qualitative similarity, they carve at the joints, they are intrinsic, they are highly specific, the sets of their instances are *ipso facto* not entirely miscellaneous, there are only just enough of them to characterize things completely and without redundancy.

Sparse properties can be contrasted with 'abundant' properties, which

> …may be as extrinsic, as gruesomely gerrymandered, as miscellaneously disjunctive, as you please. They pay no heed to the qualitative joints, but carve things up every which way. Sharing of them has nothing to do with similarity. [1986: 59-60]

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[53] Perhaps the *locus classicus* for such an application of properties is Lewis' [1983], which this discussion relies heavily upon. Cf. Goodman [1970] and Taylor [1993] for arguments against such a view.
[54] See Shoemaker [1980, 1998], Armstrong [1978, 1989, 1997, 2004], and Lewis [1983, 1984, 1986].

The abundant properties include strange properties like *being such that Al Gore was the 45th Vice President then later won a Nobel Prize, being such that Kit Fine wrote an article titled 'Essence and Modality',* and *being such that the law of excluded middle holds and being self-identical.*

Of course, this distinction between the sparse and abundant properties is not meant to apply only to properties; as Lewis notes, we can distinguish between sparse and abundant relations, holding that some relations are 'more natural than others' [1986: 61]. Much like their property cousins, sparse relations will be the ones that account for qualitative relational similarity, that carve at the joints, and there will only be enough of them to characterize things completely, while abundant relations can be as gerrymandered as you like.

The important point for present purposes is that the sparse properties are those properties that play the role of accounting for how things are qualitatively, while the abundant properties have nothing to do with how something is. What role abundant properties play and whether we should believe in them at all are questions which go beyond present concerns; all we need note here is that sparse properties account for the genuine ways that things are, while the abundant properties do not. With the distinction between sparse and abundant properties in hand, let's return to the question of relevance and a new modal analysis.

Relevance and sparseness

Fine's argument relies upon (3), which depends upon the notion of relevancy. Some explanation of what relevancy *is*, is required. Given the discussion in the previous section, I think relevancy can be explained by appeal to the sparse/abundant distinction: to be relevant to an object, a property must not be abundant. This is because only sparse properties can play the role of fixing 'what an object is' by fixing how the object qualitatively is; abundant properties, because they do not play this qualitative role, simply aren't 'part of an object's

nature' – they are irrelevant to 'what an object is' in the metaphysically significant sense of the phrase. So sparseness explains relevancy, which has a hand in determining essentiality.

This makes room for a new position, 'sparse modalism'. The sparse modalist agrees with Fine that a property is unessential if it is irrelevant to an object, but holds that only sparse properties can be relevant. By offering this account of relevancy, the sparse modalist can offer *two* ways that a property might be non-essential: it might be non-essential either in being an accidental property or by being an abundant property. Thus according to sparse modalism only the sparse properties are potentially essential, and of the sparse properties, only those which satisfy the modal criteria are in fact essential. Citing these reasons, the sparse modalist can update (EDM), replacing it with

(SPM) A property Φ is essential to x iff (i) necessarily, if x exists, then x is Φ; and (ii) Φ is a sparse property.

It should be clear that this alteration to (EDM) is motivated not as an *ad hoc* attempt to save modalism, but instead by cashing out the thought that only certain properties are relevant via the sparse/abundant property distinction. Thus we get the sparse modalist's credo: essential properties are those *sparse* properties had by an object which satisfy the modal criteria.

It is vital to the sparse modalist project that something also be said about sparse relations, lest sparse modalism automatically exclude positions that accept essential relations, e.g. origin essentialism. Consequently, the sparse modalist should also accept the following for relations:

(SRM) An object x essentially stands in relation Ψ to some y iff (i) necessarily, if x exists, then x stands in relation Ψ to some y; and (ii) Ψ is a sparse relation.

Note that the object *y* that *x* essentially stands in the relation to can vary across possible worlds: while it might be essential to a physical object *x* that it stand in the *located at* relation to some region of space *r*, it is not the case that *x* is essentially located at any particular region *r*. So we can understand the *y* in (SRM) to be an instance of a bound existential quantifier. Further, as written this principle accounts only for binary relations, but it can clearly be extended as needed for relations requiring more places.

The ability to account for relevancy via the sparse/abundant distinction is useful, but the real payoff is that (SPM) and (SRM) put the sparse modalist in position to respond to Fine's argument.

Sparse modalism in action

Let's see how Fine's argument, transposed to apply to sparse modalism, looks:

(1') For some property Φ, necessarily, if Socrates exists, then Socrates is Φ and Φ is a sparse property.[55]

(2') By (SPM), Φ is therefore an essential property for Socrates.

(3') However, Φ isn't an essential property for Socrates.

(4') From (2') and (3'), (SPM) entails that a non-essential property is essential to Socrates.

(5') Therefore, (SPM) should be rejected as an analysis of essential properties.

As before, the sparse modalist cannot accept the conclusion of the argument and must reject one of the premises. The one to reject is (1'), and the method is by arguing that the properties Fine employs are abundant properties. Consequently, (1') is false and the argument against the sparse modal analysis of essential properties is blocked.

To show how the reply goes, I look at the properties Fine cited in the variations of his argument, (a) *being such that there are infinitely many prime numbers* and *being such that the Eiffel Tower is essentially a tower;* (b) *existing,* (c) *being distinct from Eiffel Tower,* and (d)

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[55] For ease of expression, I assume that Φ is a property, since it is clear how the argument could be re-worded if it is a relation.

being a member of {Socrates}. In each case, I argue that the property involved is abundant. This entails that the version of (1') citing such property is false, and therefore that the property in question is not a counter-example to the sparse modal analysis of essential properties.

Necessary truth

Here there are two, related objections. For any necessary truth *N*, Socrates essentially has the property *being such that N is true,* e.g. given that necessarily there are infinitely many prime numbers, Socrates essentially *is such that there are infinitely many prime numbers.* Further, for any essential fact, Socrates essentially has the property *being such that the essential fact is true,* e.g. if the Eiffel Tower has the essential property *being a tower,* Socrates essentially *is such that if the Eiffel Tower exists, it is a tower.* This iterates: the Eiffel Tower essentially *is such that it is essential to Socrates that he is such that it is essential to the Eiffel Tower that it is a tower…* Accordingly, modalism not only gets the essential properties wrong, but also entails that the grasping one object's essential properties requires grasping every other object's essential properties too.

The sparse response here is straightforward: the property *being such that there are infinitely many prime numbers* does not explain qualitative similarity since everything instantiates it. Consequently, it cannot be a sparse property. Since it is not a sparse property, it is not eligible to be an essential property – it does not satisfy the conditions laid out in (SPM). While it is true that the set of prime numbers essentially has an infinite number of members,[56] and perhaps true of each member that it essentially is a member of the set (more on this shortly), it is not true that Socrates essentially has the property of *being such that there are infinitely many prime numbers.* It is, exactly as Fine insists, irrelevant to Socrates.

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[56] See Sharvy [1983], Van Cleve [1985], Wiggins [1980] and LaPorte [1997] for arguments regarding sets essentially having their members.

A similar story holds for the second variation. The property *being such that if the Eiffel Tower exists, it is a tower* is instantiated by every object in every world (even in those worlds where the Tower fails to exist). Much as above, it is not a sparse property, so it fails to satisfy (SPM) and thus cannot be an essential property of Socrates. Therefore it is not a counter-example to sparse modalism.

In both cases, the property employed is abundant, and therefore cannot satisfy (SPM). As such, this version of Fine's objection is dissolved.

Existence

Trivially, if a thing exists, it exists. It follows that the property of *existing* is essential to every object: necessarily, in every world in which Socrates exists, he exists. But, Fine argues, only special 'essential beings' (e.g. God, numbers) have essential existence; mundane, non-essential entities (e.g. us) don't. So the modal analysis gets the essential properties wrong.

First, there is a terminological point which makes Fine's conclusion appear stronger than it really is: Fine misleadingly names special entities like God 'essential beings' [1994: 2]. The property which is supposedly ascribed to these entities is *essential existence*. This is *not* in fact the property that we think such special entities have – instead they have *necessary existence*, i.e. the property of *existing at every possible world*. This is a special property. So these 'necessary beings' do have some sort of special (modal) property that distinguishes them from the other, merely contingently existing, beings. As such, there is no *prima facie* reason to think that only certain things essentially exist – it isn't going to force us into accepting the existence of Gaunilo's Most Perfect Island, for example.[57] It is a sneaky move of Fine's to pitch the objection in this way.

Second, if, as is typically thought, existence is not a property, then it obviously cannot be an essential property. But if existence *is* a property, then it may or may not be a sparse property. This depends upon whether we accept that there are non-existent objects. If there

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[57] See Gaunilo, reprinted in Plantinga [1968: 6-13].

are non-existent objects, existence seems like a sparse property, carving nature at the 'existential joints' by demarcating the existents from the non-existents.[58] That it is essential to every *existent* object seems fairly natural. However, if there are no non-existent objects, existence is not a sparse property - how can a property that everything has 'carve nature at the joints' in any relevant way? Consequently, while it might be a property, it is not sparse – and if it is not sparse, it cannot satisfy (SPM). Therefore it cannot be a counter-example to sparse modalism. So, whether we accept non-existents or not, this version of Fine's objection is not troublesome.

Distinctness

Socrates and the Eiffel Tower are distinct in the actual world. According to the necessity of distinctness principle they are necessarily so. Therefore Socrates essentially *is distinct from the Eiffel Tower.* Yet, 'it is not essential to Socrates that he be distinct from the Tower; for there is nothing in his nature which connects him in any special way to it' [Fine 1994: 4].

There are two reasons to think that *is distinct from the Eiffel Tower* is not a sparse property. First, if *is distinct from the Eiffel Tower* is a genuine property, it is a relational property, and the relation that it expresses (*distinct from*) is an internal relation, where an internal relation is a relation where the mere existence of the *relata* logically entails the holding of the relation [Armstrong 1997: 87].[59] Effectively, internal relations are redundant: since internal relations are entailed by the mere existence of their *relata*, such relations are not necessary to characterize the qualitative ways that things could be. As such, they are not sparse relations and, more importantly for the present case, the relational properties that express an object's standing in such a relation are non-sparse as well.

To see that *distinct from* is an internal relation, we need only note that the mere existence of Socrates and the Eiffel Tower is enough to logically entail that they stand in the

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[58] Obviously, 'are' is here understood to not carry any existential import, so as not to beg the question.
[59] See Armstrong [1978: 75-93, 1989: 41, 2004: 50] and Simons [2010].

distinct from relation – after all, there is nothing more to their standing in the *distinct from* relation than the fact that they are *two* objects. Therefore, *distinct from* is a non-sparse relation. Consequently, *is distinct from the Eiffel Tower* is not a sparse relational property and therefore cannot be a counter-example to sparse modalism.

The second reason comes from Ramsey: he taught us we should reject complex properties like *is distinct from the Eiffel Tower* for they lead to an 'incomprehensible trinity of facts as senseless as that of theology' [1925: 406].[60] Suppose we accept that Socrates and the Eiffel Tower's being distinct is because the two stand in the *distinct from* relation to each other, and that there are two relational properties, *is distinct from Socrates* and *is distinct from the Eiffel Tower,* each of which holds of the appropriate object. In this case, we've got three facts where we thought there was only one: there must exist the facts <Socrates has the property of *is distinct from the Tower*>, <the Tower has the property of *is distinct from Socrates*>, and <Socrates is *distinct from* the Tower>.

The difficulty comes when we try to individuate these facts. Provided facts are structured entities or complexes built up in certain characteristic ways from their constituents – in line with the view that Fine endorses in his [1982] – then the identity of facts can be explained in structural terms: the facts <Socrates has *is distinct from the Eiffel Tower*>, <the Tower has *is distinct from Socrates*>, and <Socrates *is distinct from* the Tower> all have different constituents, and thus are different facts. However, if any one of these facts exists, the others exist necessarily; in short, if we've got one, then we've got the other two as well. Yet, facts that necessarily co-exist and share all of their parts should be identified as one fact – or, as Fine puts it, they 'should be the same' [1982: 59]. Consequently, we get the incomprehensible trinity: three facts that are distinct but also identical. If we reject the existence of the two relational properties, we avoid this problem.

Of course, we also get the same result if we only accept one of the relational properties: e.g. if we accepted *is distinct from the Eiffel Tower*, but not *is distinct from Socrates*,

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[60] See Grossman [1972] and Mellor [1991, 1995].

or the *distinct from* relation. But, take another object, Cicero. He is distinct from the Eiffel Tower, so he also instantiates this relational property. Of course, Cicero is also distinct from Socrates. What property or relation should we cite in this case of distinction? We can't use the *distinct from* relation, because then we'd have two overlapping facts in the Socrates-Eiffel Tower case; the same with *is distinct from Socrates*. It looks like we're forced into accepting *is distinct from Cicero*. But then take Gore, who is distinct from the Eiffel Tower, Socrates and Cicero… As we begin to plug in more objects, the inelegancy of accepting a single relational property becomes quickly apparent: we are going to have to constantly postulate primitive relational properties to explain the distinctness facts. If we accept the relation, we can explain *all* of the distinctness facts in a straightforward manner – a clean and elegant solution.

So we have two good reasons to doubt the existence of *being distinct from the Eiffel Tower* as a sparse property: because the relation it expresses is an internal relation and because of Ramsey-style arguments against the existence of complex facts.[61] Either of these is sufficient to motivate the thought that *is distinct from the Eiffel Tower* is not a sparse property; and, as is clear by now, if it is not a sparse property it does not satisfy (1') and is not a counterexample to the sparse modal analysis of essential properties.

Socrates, {Socrates}, and membership

The final version of the objection is that, given that necessarily, if *x* exists, *x* is a member of {x}, it follows that Socrates essentially has the property of *being a member of {Socrates}*. However this property is not essential to Socrates because it has nothing to do with his 'being the very thing he is'.

The first point to note in responding to this version of the argument is that, much like the property discussed immediately above, *being a member of {Socrates}* is a relational

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[61] An additional reason to reject the property snaps into focus if one accepts Armstrong's account of universals. According to Armstrong, the predicate corresponding to the property, 'being distinct from the Eiffel Tower', is impure, and impure predicates *never* pick out genuine universals [1978: 85-6]. Consequently, *being distinct from the Eiffel Tower* cannot be a property at all and therefore not a sparse property.

property. This seems to push us towards repeating the above two arguments. Yet since the *membership* relation is not internal (it is not logically entailed by the existence of the two relata, though it is metaphysically necessitated), the first argument regarding internal relational properties does not apply.

Despite this, the sparse modalist can still run a Ramsey-style argument: if we accept *being a member of {Socrates}* is a genuine property, we have to accept the existence of the facts <Socrates is a *member of* {Socrates}, <{Socrates} *has as a member* Socrates>, and <Socrates stands in the *membership* relation to {Socrates} >. As before, we need only postulate the fact that necessarily, Socrates stands in the *membership* relation to {Socrates} – we can dismiss the two relational properties. This is sufficient to permit rejecting the relational property as a counter-example to sparse modalism.

Of course, this pushes the sparse modalist into accepting that the *membership* relation is a genuine relation – and since it isn't an internal relation (like *distinct from*), there is no reason for thinking that *membership* is a non-sparse relation. Consequently, the sparse modalist has leapt from the frying pan into the fire. By dismissing the relational property of being *a member of {Socrates}*, she has jumped into a new objection using the *membership* relation: in every world in which he exists, Socrates stands in the *membership* relation to {Socrates}. Further, this relation appears to be a sparse relation. Accordingly, Socrates essentially stands in the *membership* relation to {Socrates}. Yet intuitively Socrates does not essentially do so. So sparse modalism isn't out of the woods yet – something must be said about the relation of *membership*.

With this in mind, it is worth highlighting again the fact that sparse modalists have two avenues of handling Fine: the first amounts to demonstrating that the property or relation employed cannot satisfy (1') and consequently cannot be a counter-example to sparse modalism. The second is a bit more extreme: here, the sparse modalist rejects the assertion that the property or relation in question is not essential – i.e. rejects Fine's assertion that (3') is true for this property. Effectively, the second response is akin to biting the bullet, yet it can

be argued that such a conclusion might not be so bad – especially if the reasons for thinking such properties are non-essential can be shown to be ungrounded in light of the sparse characterization of relevancy.

In response to the *membership* relation objection, both options appear available: the sparse modalist can argue that either (1') or (3') is false. Interestingly enough, which option the sparse modalist chooses depends upon what conception of sets she accepts. In the following two sections, I explore both.

Rejecting (1'): Membership as non-essential for Socrates

To deny that Socrates essentially stands in the *membership* relation to {Socrates}, it must be possible for Socrates to exist without {Socrates} (or vice versa), or without the two being related via *membership*. The easiest way to achieve this end is to deny the existence of one of the two entities; denying the existence of Socrates is ludicrous, so {Socrates} must go – if there is no set, Socrates cannot be related to it, essentially or otherwise.

The first move might be to deny *all* singleton sets, including {Socrates}. There are reasons to be suspicious of singletons: Black says that they are 'mystification on stilts' [1971: 621], and McTaggart stipulates that, 'since a [set] has been defined as a collection of members, it must have more than one' [1927: 131]. Further, when we are first introduced to sets, we are typically taught that a set is a 'many, which can be thought of as one, i.e., a totality of definite elements that can be combined into a whole by a law.' [Cantor 1932: 204], yet this many-into-one operation looks strange when we think about a 'many' consisting of only one object. As Lewis describes it,

> Here is a just cause of student protest, if ever there was one. This time, he has no 'many'… Rather, he has just one single thing, the element, and he has another single thing, the singleton, and nothing he

was told gives him the slightest guidance about what one thing has to do with the other… His introductory lesson [of collecting many into one] just does not apply. [1991: 30] [62]

Amazingly, little justification for singletons has been explicitly advanced. Russell cites Frege's argument for the distinctness of a singleton from its member in an attempt to defend belief in singletons [1903: §491], but as Oliver and Smiley point out, Frege's argument tells us nothing about whether there *are* any singletons – indeed, the argument is deflated if singletons are rejected: 'no singletons, no identification, no argument.' [2006: 134]. So support is still lacking – perhaps enough to warrant the rejection of singletons.

Unfortunately, since Socrates is also necessarily related to other sets via *membership*, denying the existence of singletons alone will not adequately deal with Fine's argument: while doing so entails that Socrates isn't essentially related to {Socrates}, it does not prevent Socrates' essentially being related to {Socrates, 2}.

Perhaps the sparse modalist might deny the existence of sets entirely: again, no sets, no being related to them, no problem. There might be some who would be inclined towards such a view, but it faces a significant problem:

> Renouncing [sets] means rejecting mathematics. That will not do. Mathematics is an established, growing concern. Philosophy is shaky as can be. To reject mathematics for philosophical reasons would be absurd. If we philosophers are sorely puzzled by the [sets] that constitute mathematical reality, that's our problem. We shouldn't expect mathematics to go away to make our life easier... How would *you* like to go and tell the mathematicians that they must change their ways, and abjure countless errors, now that *philosophy* has discovered that there are no [sets]? …Not me! [Lewis 1993: 218]

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[62] Of course, exactly how this collecting of many into one occurs is mysterious. Is there some sort of metaphysical lasso that is thrown around the many things which unites them into a set? Or perhaps a set is a sort of container, like some kind of sack (as Dedekind thought), which encloses its members? Answering this question is a problem that set theorists of all stripes must face, and regardless of the answer we provide, the core idea is that a collection of things, be they concrete or abstract entities, is grouped together to form a single collection - and this collection is the set of these objects.

So rejecting sets altogether simply won't do. The modalist must find some other way. The preferable solution is to offer some replacement story which operates in a manner analogous to set-theory but does so without the ontological commitment to sets. If the modalist had something like this, then they could have their cake and eat it too: no rejecting the maths, no set for Socrates to be essentially related to. Lewis [2002] offers such a story, in the form of Lewisian structuralism (or, as he might call it, 'megethology').[63]

What is important about set theory, according to Lewis, is not what entities are playing the roles of 'set', 'set-member' or '*membership*'; rather, what is important is how the entities that we specify as playing these roles relate to each other. There are many different relations that could play the *membership*-role and there are many different entities which could play the {Socrates}-role (given Lewis' principle of recombination). As such, it is a mistake to make claims about *the membership* relation or *the* set that an object is a member of – there are lots of things that could properly be picked out as '{Socrates}'. Thus there is no single set {Socrates} that Socrates is necessarily related to. To put the idea in a quip, while 'Socrates' might be a rigid designator, '{Socrates}' is not. Consequently, Fine's assertion that Socrates is necessarily related via *membership* to {Socrates} can be rejected because any entity that plays the {Socrates}-role might only do so in some possible world; it need not necessarily do so. In this way, Lewis' structuralism entails that Socrates is not essentially related via *membership* to {Socrates} and – importantly! – it does not deny any mathematical proofs or theorems. As long as the maths continues to work, whatever structure used (and thus whatever entity that plays the {Socrates}-role) is fine.

Thus the structuralist position gives the sparse modalist what they want: there is no particular object {Socrates} to which Socrates is necessarily related. Rather, there are a multitude of entities which can play the {Socrates}-role, none of which are related to Socrates in every world in which Socrates exists. Socrates is not essentially related to {Socrates} via *membership*. By accepting the structuralist account of sets, the sparse modalist can deny that

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[63] See Lewis [1991, 1993].

(1') is true when it comes to Socrates' standing in the *membership* relation to {Socrates} – or any other set for that matter.

This appears to be a good way for the sparse modalist to respond to the *membership* relation argument. Unfortunately, there are two problems with it. First, it commits the sparse modalist to a structuralist understanding of sets. This is a problem because, quite frankly, I think it unattractive to make the success of the analysis of essential properties contingent upon such a highly debatable position within the philosophy of set theory.[64] So this is a worry – perhaps not a big one, but a worry nonetheless.

The second problem is much more troubling. Recall that earlier, when I was discussing (SRM), I suggested that an object *y* that another object *x* essentially stands in a relation *R* to could in fact vary across possible worlds because the 'y' in (SRM) is picked out by a bound existential quantifier. What this means is that even if there are different entities that play the {Socrates}-role in different possible worlds, Socrates could still essentially be related via *membership* to them: in every world in which Socrates exists, he stands in the *membership* relation to whatever plays the {Socrates}-role. So Socrates is still essentially related via *membership* to something, even if the thing that he is related to changes in every world. Effectively, this undermines the structuralist response to the membership objection. So what if {Socrates} is different in every world? Socrates is still essentially related to it (whatever it is).

To respond to this problem, it would be necessary to stipulate that an object can only bear an essential relation if it bears the relation to the *same* object in every possible world that it exists in; in other words, we would have to deny the possibility that one of the *relata* can vary across possible worlds and the relation remain essential. Why might we want to accept such a possibility anyway? Suppose there was an essentialist who thought it essential to Socrates that he be a man, and essential to all men that they come from human gametes. If so,

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[64] Of course, I have made the success of the analysis of essential properties dependent upon the success of a potentially debatable theory within the metaphysics of properties, in hitching the modal analysis to the sparse/abundant property distinction, but sometimes you've got to pick your friends carefully.

Socrates is essentially related to a pair of gametes. However, this essentialist also rejects origin essentialism – i.e. she rejects the thought that Socrates essentially comes from a *particular* pair of gametes, one each from Sophroniscus and Phaenarete. This position seems coherent: Socrates is essentially a man, and essentially related to some pair of gametes, but no *particular* pair. Denying the possibility entails denying the viability of this position. Of course, not denying the possibility entails not being able to use the structuralist response to the membership objection. I am hesitant to deny that such an essentialist position is viable, am therefore hesitant to accept the structuralist response.

So while one might accept this response to Fine, I hope to find another way around his problem; in particular, it would be nicer if there was some way to have a response which did not rely upon such a highly debated understanding of the nature of sets, nor which prevents what I take to be a coherent collection of essentialist views.

*Rejecting (3'): why is membership **not** essential to Socrates?*

The other avenue of response available to the sparse modalist amounts to rejecting the thought that Socrates is not essentially related to {Socrates}. If we can explain away the intuition that Fine relies upon – or at least call it into question – then we can accept Socrates' being essentially related to {Socrates}.

To do so, we first should note that we are typically introduced to the iterative conception of sets via a temporal metaphor: Socrates *comes before* or *exists prior* to {Socrates}, and that is why Socrates cannot have {Socrates} as a member – {Socrates} comes later. This temporal metaphor is a useful way to understand the iterative conception of set, which we need to avoid paradox.[65]

Now, if this metaphor is accepted as describing a genuine dependency relation between a set and its members – i.e. if we accept what Potter calls a 'constructivist' account of sets – there are worlds where a set's members exist and the set does not (because the set has

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65 See Boolos [1971, 1989] and Potter [2004: 37-39]

not been constructed yet, say). As such, it is possible that Socrates exist while {Socrates} fails to (though not *vice versa*) and Socrates is not essentially related to {Socrates}.

Of course, no one takes the metaphor literally; sets are regarded as not being subject to temporal relations and the 'prior to' is thought to be purely metaphorical. What then to make of Socrates' 'existing prior' to {Socrates}? We could, if we are so inclined, understand this metaphor as describing an asymmetrical dependency relation such that it is of the metaphysical nature of {Socrates} that it depends upon Socrates and not of the metaphysical nature of Socrates that he be a member of {Socrates}. So understood, the temporal metaphor justifies the thought that it is essential to {Socrates} that it have Socrates as a member, but not essential to Socrates that he be related to {Socrates}.

Yet we cannot justify the asymmetrical essential relations based on the temporal metaphor alone. This asymmetrical relation is *not* a product of the iterative conception of sets itself, for such a conception is merely committed to the ideas that (a) it is not possible that {Socrates} exists and doesn't have Socrates as a member, (b) if Socrates exists, then there also exists {Socrates}, and (c) if Socrates exists, then he is a member of {Socrates}. No metaphysical asymmetric dependence relation is entailed from these three facts.

This leaves those who would argue for the existence of an asymmetric dependence relation in an undesirable position: the only reason to think there is some sort of essential asymmetry is because of the temporal metaphor, but the metaphor (and the conception which the metaphor is a description of) does not entail any asymmetrical dependence relation. There is therefore no reason to take this intuition of an asymmetrical dependence relation as metaphysically weighty. Thus the problem for Fine: why should we think that being related to {Socrates} via membership isn't essential to Socrates? The temporal metaphor doesn't justify this, nor the iterative conception – in fact, it almost seems like one is taking the metaphor too seriously if one thinks that it does justify the asymmetry. Until Fine can answer this question, the sparse modalist can reject the non-essentiality of Socrates' being a member of {Socrates} with a clear conscience.

There is of course a large (and ever growing) amount of literature regarding the nature of 'metaphysical grounding' which essentialists sympathetic to Fine might bring into play here, thinking that the existence of Socrates grounds in some deep metaphysical way the existence of {Socrates}, while the opposite is not the case. [66] This would be a suitable way to explain an asymmetric dependence between {Socrates} and Socrates. But that is *not* what is at issue here. We are searching for a reason to believe that there is an asymmetric dependence relation, not for an explanation of how this relation works. Appeals to metaphysical grounding would only be useful *after* responding to the sparse modalist's query, not during.

The upshot for our overall discussion is that until Fine can demonstrate that the iterative hierarchy of sets is committed to a metaphysically substantial asymmetrical dependency relation (perhaps which we could understand in terms of metaphysical grounding), he cannot rely upon the iterative conception alone to generate a counter-example to modalism. Consequently, the sparse modalist can say that Socrates essentially *is* related via *membership* to {Socrates} and still accept the iterative conception of sets – a happy conclusion for the sparse modalist.

Possible objections dismissed

In this section, I deal with four possible objections to the sparse modalist analysis.

Modal agreement, essential disagreement?

Even with his arguments defeated, Fine might object that, 'it seems to be possible to agree on all the modal facts and yet disagree about the essentialist facts. But if any modal criterion of essence were correct, such a situation would be impossible' [1994: 7].

If essential facts and modal facts can independently vary, then it seems that we cannot analyse one in terms of the other. However, while this might be a problem for the standard or

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[66] See Correia [2005], Fine [2002], and Schaffer [2009] to name a few.

even existence-dependent modal analyses, sparse modalism is in a position to explain how such a difference of opinion is possible: two sparse modalists can agree on all the modal facts, yet disagree about the essential facts.

In one sense, a sparse modalist already accepts that a modal analysis *alone* cannot adequately account for what makes a property essential – something must be added. But what must be added is not a primitive notion of essentiality (despite what Fine might hope). Instead, what is needed is the sparse/abundant property distinction. So essentialist facts are generated in the following manner: fix the sparse property facts, fix the modal facts, put them together, and then – voila! – you have the essentialist facts. This is how the essential facts are not fixed purely by the modal facts; sparse property facts enter in too.

This provides the wiggle room for sparse modalists to handle this objection. If our two essentialists disagree about what sparse properties there are, then they will have different properties eligible for the modalist criteria. Consequently, they will have different essentialist facts while the modal facts remain the same.

Does sparse modalism amount to abandoning the modal analysis?
The response to the above objection might lead to a new difficulty, however: it seems that accepting the sparse modal analysis is the same as abandoning the modal analysis of essential properties. According to the sparse modal analysis, being an essential property requires satisfying *two* criteria: a modal one and one related to being a sparse property. Doesn't this mean that sparse modalism no longer understands essentiality in terms of modality? This would be a problem for the sparse modal analysis because it would mean that any support the modal analysis garnered from the argument by elimination would not apply to sparse modalism – in effect, we would have little to no reason to accept the sparse modal analysis instead of (say) a primitive 'analysis' of essential properties.

I think that the sparse modalist can dismiss this objection. The first step in doing so is to note the difference between restricting the domain that might satisfy the analysis of

essential properties and actually providing such an analysis. These are different activities, which can involve different postulations. As it applies to sparse modalism, the sparse property requirement restricts the domain (eliminating from contention the abundant properties), while the purely modal analysis of (EDM) expresses the necessary and sufficient conditions for being an essential property. What this means is that, even for sparse modalism, all it takes to be an essential property is to satisfy (EDM). However, not every property is eligible to satisfy (EDM). This is because of our pre-theoretical inclinations regarding the nature of essential properties: essential properties play certain roles, some of which certain properties just aren't capable of doing. In this way, the need to restrict the domain of eligible properties comes up before we even begin to offer an analysis of essential properties. I take this to imply that we need to determine what properties are 'relevant' *prior* to running something like the argument by elimination.

Now, if the best way to characterize the notion of relevance is via the sparse/abundant property distinction, this means that in fact the whole argument by elimination occurs within the framework of the sparse/abundant distinction – in other words, *every* possible analysis of essential properties mentioned within the argument by elimination, including Fine's real definition account, implicitly includes a sparse requirement. As such, the argument by elimination does offer support to sparse modalism, and the only real difference between (EDM) and (SPM) is that (SPM) explicitly states a restriction that (EDM) (and all of the other possible analyses of essential properties) implicitly assumes.

The upshot is that sparse modalism is still a modal analysis of essential properties and it still receives the full support of the argument by elimination. The sparse restriction falls out of the need for a relevancy criterion, the application of which occurs prior to any attempt to construct an analysis. Sparse modalism is a modal analysis – and a successful modal analysis to boot.

Sparse modalism entails no essential properties

A third objection is that, by stripping the properties an object can have essentially down to just those sparse properties the object has, sparse modalism entails that objects have *no* essential properties. In fact, there are four variations on this objection:

(a) All sparse properties are micro-structural properties (or something along those lines). Socrates isn't the sort of object that has such properties. Therefore Socrates has no properties that satisfy (SPM) and thus no essential properties.

Clearly, if this objection worked, then (SPM) would be in the same boat as Della Roca's trivial property response to Fine. However, the objection isn't that worrisome. The only reason that we might accept that sparse properties are micro-structural properties is if we thought that what really exists are only micro-structural entities – i.e. we might think that properties like *having negative charge* and its ilk are the only sparse properties because we think that quarks, leptons, and the like are the only entities that really exist. If people, tables, and chairs exist on this picture, it is only because they supervene off the arrangement of the real existents (the micro-physical objects). This amounts to giving up on Socrates – he gets consigned to being a second-rate object. Lewis accepts a picture that is somewhat along these lines.

This simply won't do. I see no reason to accept that people, tables, chairs, and other 'medium sized dry goods' aren't just as fundamental as quarks and leptons. A knock-on consequence is that I see no reason to think that sparse properties are restricted to only micro-structural properties. Why can't *being a man* be a sparse property?[67] Until the objector can give me some solid reason for thinking that sparse properties are restricted as they say which doesn't rely upon restricting the kinds of property-bearers, the sparse modalist can ignore this objection. So, in effect my response to this objection is that I agree with Lewis regarding the need for the sparse/abundant distinction, but disagree about where to draw the line. This is because I disagree about what objects should be understood as being part of the

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[67] Cf. Wetzel [2000] for an argument as to why *being a man* isn't a property at all, let alone a sparse property.

fundamental ontology of the world: I include everyday objects, while the objector must only think that there are micro-structural objects. Because I do not restrict my ontology, I see no reason to restrict my sparse properties.

That being said, this objection does highlight that the sparse modal analysis is dependent upon settling issues regarding the nature of properties, and in particular fixing what properties are sparse. This isn't a flaw of the analysis, however; what properties are essential should at least partially depend upon the nature of properties (as well as how said properties stand to the objects that instantiate them).

(b) The property of properties *being sparse* applies only contingently – i.e. there are possible worlds where property Φ is sparse, and other possible worlds where Φ is abundant. Some of these latter worlds might be ones where Socrates exists. Ergo Φ does not satisfy (SPM) as regards Socrates. Via recombination, we can construct a world where Socrates exists but *all* his properties are abundant. This world entails that Socrates has no essential properties.

The response to this is straightforward: the Lewisian conception of sparseness that I am employing in the sparse modal analysis is one according to which the property of *being sparse* does not apply to a property contingently. This is in part because sparse properties are used to account for qualitative similarity, which can be a trans-world relation. If being sparse were contingent, then there is no way that this trans-world qualitative similarity relation could even make sense. Further, when we say that sparse properties 'carve at the joints' of reality, this is intended to apply to all the worlds, not just at one.

In this way, the conception of sparseness that I have been using is not a contingent one. So the reply to this objection is that I cannot even comprehend how a conception of sparseness which fits Lewis' description might be contingent. Until the objector provides me with a story where this is the case, this objection is not troubling.

(c) What properties exist is a contingent matter. So while Φ is necessarily a sparse property, there are some worlds where Φ does not exist. By recombination, there is a world where all of Socrates' properties fail to exist, though he does. This world entails that Socrates has no essential properties.

This isn't a specific objection to the sparse modal analysis in particular, but rather is a view about what is possible for Socrates. In effect, to get the world where Socrates exists but has none of his essential properties, the objector must assume something like *extreme haecceitism*, the view that denies there are any connections between an object's qualitative nature and its identity. Clearly, extreme haecceitism is an anti-essentialist position and as such, this objection amounts to questioning why we should believe that there are any essential properties at all – that it might be put to someone who accepts the sparse modal analysis is just coincidence.

To that end, this isn't an objection to sparse modalism; it's an objection to essentialism. Given the assumptions that this discussion is being conducted under, we can dismiss this objection as irrelevant for present purposes. Of course, the sparse modalist must say something, but so does Fine and everyone else who accepts any essential properties what so ever.

(d) There are no sparse properties, only abundant properties, so no properties satisfy (SPM). Therefore, Socrates has no essential properties.

This last version of the objection leads directly into the next objection to sparse modalism, so I address it in the following section.

Why accept the sparse property story?
The final objection to sparse modalism aims to undercut one of the central elements of the position; namely, the sparse/abundant property distinction. The objection amounts to the question, why should we accept the sparse property story? After all, buying the distinction forces us into demarcating properties into two fundamentally different groups, which is

especially difficult given that we are not even sure what properties are, let alone what they are like. So why should we accept the distinction between sparse and abundant properties?

Here we need only turn back to Lewis, who argues at length that rejecting the distinction is 'out of the question' [Lewis 1986: 61]. Without the distinction between sparse and abundant properties it is tremendously difficult to give any sort of account for qualitative similarly, intrinsic properties, laws, causation, the contents of thoughts, supervenience, and materialism [Lewis 1983].[68] Thus the Lewisian argument for the sparse/abundant distinction is that it is philosophically useful – it is, in short, an offer that you can't refuse.

Yet even if Lewis's push for the indispensability of the distinction is over the top, and the applications of it exaggerated, the thesis that some properties are more natural than others is extremely plausible. As Goff puts it, 'it would be a cost in terms of the plausibility of [a position] if it entailed that the property of *negative charge* is metaphysically on a par with the property of *being an electron or an elephant*' [2010: 130]. A similar point can be made against the position that accepts the distinction but holds that there are no sparse properties: while consistent, such a view is horrifically counter-intuitive. In this way, I think this objection can be dealt with.

Sparse modalism triumphant and a challenge to Fine

We have seen how Fine's objection can be resisted: citing the need to justify Fine's assumption of (3), I argued that the best justification was the notion of relevancy, which is best cashed out in terms of the sparse/abundant distinction. This led to the construction of the sparse modalist analysis of essential properties, using (SPM) and (SRM). The properties Fine employs in his various versions of the argument are not counter-examples to this *sparse* modalism; either they fail to satisfy (SPM) or we have no reason to think that the properties are not in fact essential.

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[68] See Lewis [1984, 1986] and Oliver [1996: 38-44]

In this way, sparse modalism looks like the way forward for the modal analysis of essential properties. But perhaps Fine (and the essentialists who agree with him) is still not convinced. If so, I lay down a challenge: come up with a new property or relation that (a) satisfies (SPM) or (SRM) and (b) is clearly non-essential. Show that the sparse form of the modal analysis is incorrect. Until such a property is presented, sparse modalism looks like the best way to analyse what makes a property essential – in other words, it is the answer to the Analysis Question.

Conclusion to Part I

This brings us to the end of Part I of this investigation; let me summarise what has happened.

The first major step forward was derived from Quine's critique of quantified modal logic. Quine argued that modal logic was committed to an invidious Aristotelian essentialism because, for Quine, essential properties just are *de re* necessary properties. This gave us a first glance at the modal analysis of essential properties. Such an analysis is intuitive, fits with our pre-theoretical beliefs about the nature of essential properties, and is widely accepted. To that end, I took it to be a decent answer to the Analysis Question.

However, only certain ways the relation between essentiality and modality might be were conducive to the modal analysis; indeed, of the eight possible ways the two could be related, only two were favourable. In order to support the modal analysis, I offered an argument by elimination, wherein the six unfavourable possibilities were shown to either not work or be methodologically undesirable when compared to one of the options that entailed the modal analysis.

One particular possibility that I dismissed is Fundamentalism, according to which modality is analysed in terms of essentiality. Such a view is favoured by E.J. Lowe and Kit Fine. It was shown that Fundamentalism cannot be correct; first, because neither Lowe nor Fine was capable of explaining why it must be the case that no merely contingent properties are part of an object's essence, and second because there are some possibilities (both *de re* and *de dicto*) that could not be accounted for.

The argument by elimination offered us a substantial reason to accept the modal analysis. Even so, what exactly the modal analysis amounted to was unclear. Making it more perspicuous first required specifying what sense of *de re* necessity essential properties were meant to be understood in terms of. Here I offered *metaphysical* necessity, since it appeared to be custom fit for the job. This gave us the principle

(MM) A property Φ is an *essential* property of object *x* iff *x* is metaphysically necessarily Φ.

I called the modal analysis which employs (MM) the *standard* analysis.

A problem with the standard analysis is that it is unclear how it handles the essential properties of contingent existents. To avoid this problem, I suggested using weak necessity, which led to the *existence-dependent* analysis, embodied in the principle

(EDM) A property Φ is an *essential* property of object *x* iff (metaphysically) necessarily, if x exists, then x is Φ.

This, I suggested, was a better version of the modal analysis. After dismissing an identity-dependent alternative, I dealt with an objection to weak necessity raised by McLeod.

At this point, everything looked grand for the modal analysis. Then came Fine's objection, which aimed to show, through four variations, that there are some properties that an object has *de re* necessarily but not essentially. If Fine was correct, then the modal analysis would have to be rejected, and we would be forced to start over regarding answering the Analysis Question.

Thankfully, Fine could be dealt with: I presented an analysis of essential properties as those *sparse* properties which satisfy the existence-dependent modal criteria. With this response, Fine's objection can be dismissed, thereby securing the truth of (a form of) the modal analysis.

Now we can finally answer the Analysis Question. What are essential properties? They are those sparse properties that an object has in every world in which it exists.

Part II: Answer the Extension Question

In this Part of the thesis, I turn to specifying what essential properties there are. Unlike Part I, this Part is primarily negative: I will mostly be rejecting arguments other essentialists have advanced for particular essential extension answers. I have chosen to focus upon three specific essentialist answers, all of which I end up rejecting. To that end, the conclusion of this Part is, in some sense, much less congenial to essentialism.

The first position I look at is sortal essentialism, according to which an object essentially is an instance of the sortal that it actually is. I look at an argument for the position by David Wiggins, who advances it as part of his overall project to account for the notions of identity and substance via a sortal-based theory of individuation. Chapter Six examines Wiggins's 'argument' for sortal essentialism, and finds it wanting; the only way to get sortal essentialism out of Wiggins's theory of individuation is by adding a question begging assumption. To that end, I conclude that sortal essentialism isn't part of the essential extension.

Meanwhile, Chapter Seven surveys a collection of arguments for origin essentialism, according to which it is essential to an object that it have the origin that it actually does. I start with Kripke's 'sort of proof'. This is shown to not entail origin essentialism, despite what Kripke thought. I then turn to Nathan Salmon, who produces a series of arguments, which rely upon an origin being sufficient for an object's having the identity that it does. Unfortunately, Salmon's arguments do not work, falling prey to a series of complicated 'recycling cases'. Dismissing Salmon, I progress to Forbes' four worlds argument. Citing the idea that identity must be grounded in the intrinsic properties of an object, Forbes attempts to show how this assumption entails origin essentialism. This argument also fails, because it is both susceptible to a recycling case and because it cannot answer the 'bias problem'.

Abandoning Forbes, I finally turn to Rohrbaugh and deRosset's independence principle argument. Here, Rohrbaugh and deRosset attempt to derive origin essentialism

through asking the question, what would prevent the production of a particular object from a particular hunk of matter? They only sensible reply, according to R&D, is some sort of *local* preventing factor. Linking this insight up with a combinatorial principle, R&D then generate an argument that looks similar to Kripke's initial proof, albeit skilfully altered so as to avoid obvious pitfalls. Yet, for all of this, the independence principle argument also fails, for it can be shown to either depend upon a sufficiency principle (which entails that it is susceptible to a recycling case) or simply beg the question.

With these four different ways of arguing for origin essentialism undermined, I conclude that origin properties are not part of the essential extension.

Having dismissed these two positions, for the final chapter (Chapter Eight), I look at Mackie's minimalist essentialism. Examining the argument Mackie gives for the position requires looking at an argument of Lewis' aimed at supporting extreme haecceitism, then a series of arguments of Mackie's which show how extreme haecceitism can account for essentialist intuitions (via the tenacious property story). In this way, extreme haecceitism is made to look more attractive than any form of essentialism.

There are problems with the argument for extreme haecceitism: it is unclear just how much support for extreme haecceitism Lewis' argument offers, and some of Mackie's arguments are suspect. Yet this is just as well, for after arguing for the superiority of extreme haecceitism, Mackie performs an about-face, and urges that extreme haecceitism is 'indefensible'. In its place, she suggests minimalist essentialism. Thus she concludes we should accept minimalist essentialism as our extension answer.

This second bit of the argument, regarding rejecting extreme haecceitism in favour of minimalist essentialism, does not work either. At the end of the day, however, it doesn't matter whether the argument works. This is because minimalist essentialism doesn't help us answer the Extension Question because Mackie does not make it clear what the essentialist commitments of the position are. So, even if we were to become minimalist essentialists, we wouldn't be any better off when it comes to saying what essential properties there are.

Having looked at these three attempts to answer the Extension Question, I conclude that none succeed in demonstrating that certain properties should be included within the essential property extension. This conclusion, while slightly disheartening, should not fill the essentialist with despair: there are many other extension answers that have yet to be disproven.

Wiggins's Sortal Essentialism - Chapter 6

> *Now when she had given them the potion, and they had drunk it off, then she presently smote them with her wand, and penned them in the sties. And they had the heads, and voice, and bristles, and shape of swine, but their minds remained unchanged even as before.*
>
> *– The Odyssey*, 10.240-3

Define *sortal essentialism* as the view that, if an object x is an instance of the sortal **S**, then x is essentially an instance of **S**. In this chapter, I examine David Wiggins's argument for sortal essentialism. I say 'argument', but it is not the case that Wiggins has a straightforward argument for sortal essentialism. Rather, Wiggins's project is one of elaborating a theory of individuation where the formal notions of identity and substance are accounted for by our actual, sortal-based practice of individuating objects. Sortal essentialism is thought to somehow fall out of this sortal theory of individuation. Yet how exactly it 'falls out' is hard to see, and this obscurity is not made any simpler by the perspicuity (or lack thereof) of Wiggins's writing.

To that end, the chapter will proceed in the following fashion. I first present the various developments in Wiggins's theory of individuation. It will be shown that no element of the story is sufficient to entail sortal essentialism. After laying out the theory of individuation, I examine an argument of Wiggins's concerning {Eiffel Tower, Crystal Palace}. I show that the sortal essentialist conclusions of this argument cannot be derived from what Wiggins has given us – instead, the only way to do so is to add on question-begging assumptions. In the end, I conclude that Wiggins gives us little reason to believe in sortal essentialism and, for this reason, sortal properties should not be included within the essential extension.

Identity as identity-under-a-sortal: D(i)

According to Wiggins, individuating an object – i.e. picking it out at some time – as well as ascribing properties to an object requires saying what kind of thing the object is, or, as he puts it, requires answering the Aristotelian question, '*what is it?*' [2001: 21] To see why, imagine looking at a statue made of a lump of bronze. If I told you, '*That* will not survive being melted down' it would be natural to reply, '*What* won't survive being melted down – the statue or the lump of bronze?' In this way, I must specify what it is that I am ascribing the property of *being capable of surviving being melted down* to (in this case, the lump of bronze). Thus,

> …for each thing that satisfies a predicate such as 'moves', 'runs', or 'white', there must exist some known or unknown, named or nameable, kind to which the item belongs and by reference to which the 'what it is' question could be answered. Everything that exists is a *this such*. [Wiggins 2001: 21-2][69]

Of course, not just any kind will do. No, the kinds Wiggins thinks answer the Aristotelian question are kinds picked out by sortal predicates – 'sortals' for short. These kinds 'determine directly or indirectly the characteristic development, the typical history, the limits of any possible development or history, and the characteristic mode of activity of anything that instantiates the kind' [2001: 84].

Sortals are capable of such feats because they, unlike other, non-sortal kinds, provide 'criteria of identity' for their instances. These criteria of identity provide necessary conditions for being an instance of the kind they are attached to, determine 'characteristic modes of activity', allow for the individuation of an object, provide *diachronic* criteria of identification, and provide persistence conditions – the necessary conditions for determining what changes an object can undergo and continue to exist. In other words, criteria of identity mark 'simultaneously what a thing is, what matters turn on with regard to its persistence and what matters turn on with regard to identity claims relating to it' [2001: 69].

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[69] See Wiggins [1980: 115].

So, knowing that Bucephalus is a horse is a pre-requisite for our being able to ascribe to him any properties. Further, his being an instance of the sortal **horse** is what enables us to individuate Bucephalus at a time, to know what his survival conditions are, and to re-identify him across time (e.g. say things like, 'I think this is the same horse as the one we met in the field yesterday').

Given that we must answer the Aristotelian question for every object, and that sortals are the best sorts of thing to provide us with an answer, Wiggins concludes that 'identity is a notion coeval with the determinable entity of some determinate kind, which brings with it the possibility of the particular determinations that figure in particular sortal predications' [2001: 19]; in other words, identity is best understood as identity-under-a-sortal. This entails the principle:

> **D(i)** For every object x, for every time that x exists, there is a sortal **S** of which x is an instance.

Wiggins is not alone is advocating something like **D(i)**; Lowe explicitly agrees with Wiggins [2009: 17],[70] Hirsch discusses a sortal's ability to pick out a 'continuous succession of F-stages' which 'correspond to (what counts as) stages in the career of a single persisting F-thing' [1982: 38], Dummett suggests that an object's being an instance of a sortal explains 'how to recognize the object as the same again' at some later time [1973: 179], Geach thought that identity is relative to 'substantival concepts' [1962: 64], and Frege thought that sortals – and the criteria of identity they supply – provided determinate tests for identity and persistence [1884/1974: §62].

So let us grant to Wiggins his principle **D(i)**. Unfortunately, **D(i)** is not enough to entail sortal essentialism – in fact, it isn't even strong enough to entail that an object necessarily is an instance of the same sortal at every time it exists within a single possible

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[70] See also Lowe [1989: 14].

world. To see why, take the following case. Suppose there exists at time *t1* a **sword**, Durandal. At time *t2*, Durandal continues to exist, but it has now been hammered into a **ploughshare**. Finally, at time *t3*, Durandal goes out of existence – broken into tiny pieces by Roland, perhaps.[71]

Now, such a case is permissible by the lights of **D(i)**: it is true that for every moment that Durandal exists, there is some sortal which it is an instance of. Of course, there is no *single* sortal which Durandal is an instance of at every time. In this way, **D(i)** is compatible with sortal *accidentalism* – for if an object need not even be an instance of a single sortal throughout the whole of its existence, it most certainly need not essentially be so.

Clearly then, this first part of Wiggins's theory is not sufficient to entail sortal essentialism. There are some problems, however; one particularly glaring problem concerns the nature of Wiggins's criteria of identity. While Frege's criteria provide determinate tests for identity at and over time, Wiggins's criteria of identity merely *organize* tests for identity at and over time. Thus, *contra* Frege,

> ...it will [not] always be possible to write down an explicit f-involving condition that suffices for the identity of *a* with *b*. The thing we can write down will only be some verbal expression of the larger *practical* understanding enjoyed by one who can convert his grasp of the concept of an f into some capacity to determine what is at issue in any particular case where it is asked, with respect to an a or a b which is an f, whether a is the same as b. [2001: 70]

What this means is that it is a primarily pragmatic matter how identity-under-a-sortal questions are answered. This leads to potential ambiguity: we could rule that object *x* survives as a instance of sortal **S** through change *c* while at the same time ruling that *y*, also an instance of **S**, does not survive change *c*. In itself this isn't necessarily worrisome, but if we are to extend Wiggins's story into the realm of essential properties and we think that essential

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[71] The case is not limited to objects being instances of artifact sortals: **D(i)** does not prevent Socrates being a **human** one instant and a **cow** the next.

properties are absolute, then we have a conflict between the shifting survivability conditions affiliated with identity-under-a-sortal and objective necessary identity conditions supplied by essential properties. This looks like a serious problem. However, let us set this worry aside for the moment and return to assessing Wiggins's position.

Once an instance, always an instance: D(ii) and substance sortals

In response to problems like the Durandal case, Wiggins asserts that we

> need to distinguish between sortal concepts that present-tensedly apply to an individual x at every moment throughout x's existence …and those that do not… It is the former (let us label them, without prejudice, substance-concepts) that give the privileged and (unless context makes it otherwise) the most fundamental kind of answer to the question 'what is x'? It is the latter, one might call them phased-sortals, which, if we are not careful about tenses, give a false impression that *a* can be the same f as *b* but not the same g as *b*. [2001: 30]

This distinction separates out two flavours of sortals. *Phase sortals* are those sortals that apply to objects for a limited part of their career; prime examples include sortals like **boy**, **old man**, **colt**, **sapling**, and **leveret**. Meanwhile, *substance sortals* are those sortals that apply to an object for the duration of their existence; examples are of these are **human**, **horse**, **tree**, and **rabbit**.[72]

To go along with the distinction between substance and phase sortals, Wiggins also suggests distinguishing between

> predicates like 'infant', 'adult', 'pupa', 'tadpole', which every member of the extension of the substance term that they restrict *must* in due course satisfy if only it lives so long and predicates like 'conscript', 'alcoholic', 'captive', 'fugitive', or 'fisherman', of which this does not hold. [2001: 33]

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[72] It is necessary to make the temporal application go both forwards and backwards: if we stipulate that a sortal is a substance sortal iff it is true that there are no worlds where an object is an instance of the sortal at one time and at a *later* time is not an instance of a sortal, obvious phase sortals like **old man** turn out to be substance sortals.

These latter kinds of sortals are *restricted* sortals. They behave in a manner similar to phase sortals.

This distinction between a phase (or a restricted) and a substance sortal is not a contingent matter: a sortal cannot be a substance sortal for one object but a phase sortal for another. The reason is because phase and restricted sortals are not genuine sortals. While we might call them 'sortals' for ease of expression, they do not supply genuine criteria of identity. Instead, they are simply different ways of restricting genuine sortals, which are the substance sortals. This might lead to a problem: suppose Aristotle had, due to some terrible accident involving gymnastic equipment, died in his youth. In that case, Aristotle was a boy throughout his entire existence. This might appear to imply that **boy** is a substance sortal, and thereby prove that phase and restricted sortals are genuine sortals.

Responding to cases like this, Wiggins asserts that it is the *possibility* of Aristotle's ceasing to instantiate **boy** while persisting that proves that **boy** is merely a phase sortal [2001: 31]. Thus the distinction between phase and substance sortals is *modal* in character: there are no possible worlds where an object is an instance of a substance sortal at one time but not at another time in the same world. Meanwhile, there is at least one world where an object is an instance of a phase sortal at some time but not at another time within the same world. This modal distinction is a central point for Wiggins's story about the nature of individuation.

Having drawn the distinction between phase and substance sortals, Wiggins suggests that it is really substance sortals that answer the 'what is it' question. This is because phase sortals can be understood as simply temporal phases of the eternally applying substance sortals (e.g. **boy** is really just **young male human**, **sapling** is **young tree**, etc.). Further, given that substance sortals apply to an object for its whole career, only they can really supply persistence conditions. These two points, when combined with the arguments regarding identity as identity under a sortal, lead Wiggins to

D(ii) For every object x, there exists a particular sortal S such that at all times, if x exists, then x is an instance of S. [2001: 64]

This principle blocks the possibility of a Durandal case: there is no single sortal that applies to Durandal throughout its existence, ergo there is in fact no Durandal.[73]

However, while it entails permanent sortalism, **D(ii)** does not entail sortal essentialism. Even if it is the case that within a single possible world, once an instance of **sword**, Durandal is always a sword, nothing prevents there being a different possible world where Durandal is an instance of a distinct sortal – say, **computer**. In this world, Durandal is, at every moment of its existence, a computer, so **D(ii)** is not violated. Thus accepting substance sortals does not entail accepting sortal essentialism.

Of course, there are some essentialist conclusions that we can derive from Wiggins's substance sortals. The first is that we can get a form of sortal essentialism: recall the notion of Weak Aristotelian essentialism introduced in chapter 4, according to which a property Φ is an essential$_{\text{Weak Aristotelian}}$ property of object x iff x is Φ and necessarily, anything that is Φ at any time in its existence is Φ at all times in its existence.[74] Clearly, substance sortal properties are Weak Aristotelian essential properties – after all, no object can lose one and continue to exist. But, a property's satisfying the conditions for being a Weak Aristotelian essential property does not entail its satisfying the conditions for being a *metaphysical* essential property, and

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[73] Actually, this is a bit hasty. One possibility is that Durandal is an instance of the disjunctive substance sortal **Sword-or-Ploughshare**. This is compatible with **D(ii)** (since Durandal is always an instance of a single, albeit disjunctive, sortal). Wiggins replies with

D(vii) There are no essentially disjunctive substance-concepts (f or g) coincidence under which might allow a to be the same (f or g) as b and allow a to be the same (f or g) as some c that was distinct under every covering concept from b. [2001: 74]

Wiggins claims that this principle stems from his rejection of Geach's relative identity thesis, according to which two objects *x* and *y* might be the same under one sortal but be distinct under a different sortal. In reality, it stems from his story about ultimate and dummy sortals, which we shall discuss shortly.

[74] See Mackie [2006: 157-8], Lowe [1995].

since metaphysical essentialism is the version of essentialism which we are concerned with, substance sortal properties don't make the cut.

Further, let us return to the distinction between substance and phase sortals. This distinction is a necessary one. Yet we should be clear that the necessity here applies to the sortal and not to the instances of it; while it might be the case that necessarily no instance of a substance sortal fails to be an instance at any other time within the same world, this does not entail that an object which instantiates a substance sortal does so at every time in *every* world. While **human**'s being a substance sortal entails that no humans ever *become* something different, it does not entail that humans *couldn't have been* something different. In other words, it is essential to a substance sortal that no object which comes into existence as an instance of the substance sortal ceases to be an instance and continues to exist. So, K's metamorphosis from a human into a gigantic bug is not genuinely possible (if it is possible, then either **human** is not a substance sortal or K was not an instance of **human** to begin with) – yet there is nothing to prevent his simply starting out as a gigantic bug in the first place. This should make the essentialist consequences of accepting substance sortals clear: there are direct payoffs regarding the essences of the substance sortals themselves, but not the instances.

A hierarchy of sortals: dummy & ultimate sortals

At this point, Wiggins admits that an object can be an instance of many different substance sortals. For example, take the substance sortals **kestrel** and **falcon**. Being a type of falcon, **kestrel** is in fact a restriction on **falcon**, and **falcon** is itself a restriction on the more general **raptor.** However, both **kestrel** and **falcon** are substance sortals: their being restrictions on a more general sortal does not in any way undermine their being genuine sortals. In this way, it is possible that an object instantiates more then one substance sortal at a time – e.g. a kestrel would instantiate **kestrel**, **falcon**, and **raptor**. This indicates there is a hierarchy of sortals, with restricted substance sortals (**kestrel***)* being derivative of more general sortals (**falcon***)*,

which are in turn restrictions upon even more general sortals (**raptor**). It is even possible that these more general sortals are themselves restrictions of further sortals (**avian**? **animal**?). It is tempting to allow the hierarchy to continue further upwards, into more and more general sortals – perhaps the most general sortal applicable to a kestrel is **living body**, or maybe the even more general **material being**.

Of course, Wiggins rejects the relative identity thesis, thereby ensuring that a single object cannot have two conflicting criteria of identity. Consequently, in order for two sortals to overlap, they must share a common criterion of identity. Since multiple substance sortals apply to a single object, it must then be the case that all of these sortals share the same criteria of identity – and given the hierarchical picture sketched in the paragraph above, it follows that a restricted substance sortal shares its criteria of identity with the sortal it is a restriction upon. So **kestrel**, **falcon**, and **raptor** all share the same criteria of identity.

Yet take the picture of the hierarchy where we continue upwards, taking **raptor** to be a restriction on **avian**, **avian** a restriction on **animal**, **animal** on **living body**, and finally **living body** on **material being**. If all restricted sortals must share a criterion of identity with the sortal they are a restriction upon, this picture looks quite strange. What sort of criteria of identity could we construct which would successfully apply to all of the diverse collection of objects that fall under **material being**? What 'characteristic mode of activity' applies to all of the things that are instances of such an incredibly broad sortal?

It is for this reason that Wiggins insists that there are some terms, like 'body',' thing', and 'object' which are *dummy* sortals – they appear to be genuine sortals, but they fail to provide genuine criteria of identity [1967: 29]. In fact, the best way to characterize them is as disjunctions of genuine sortals: e.g. saying that something is an instance of **living body** is tantamount to saying 'x is an instance of **human**, or **amphibian**, or **tree**…'[75] The inclusion of dummy sortals implies that the hierarchy of genuine sortals does not continue forever upwards: there must be a highest level genuine sortals. These must be the ones which all the

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[75] See note 70.

other sortals are restrictions upon and it is they that are affiliated with the criteria of identity objects fall under. In short, we have a need for

> a sortal which either itself is restricted by no other sortal or else has a sense which both yields necessary and sufficient conditions of persistence for the kind it defines and is such that this sense can be clearly fixed and fully explained without reference to any other sortal which restricts it. [Wiggins 1967: 32]

Wiggins calls these most general genuine sortals the *ultimate sortals.* They are the sortals which supply the criteria of identity, and it is in virtue of being restrictions upon ultimate sortals that lower grade substance sortals like **kestrel** apply to an object. In this way, ultimate sortals are the fundamental element of Wiggins's theory of individuation, for it is an object's ultimate sortal 'which is individuative of *x* and restricts no other sortal concept' [Wiggins 1980: 65].

Having fixed ultimate sortals, we have a picture of what Wiggins's hierarchy of sortals looks like: at the bottom of the hierarchy are the various restricted substance sortals, which are themselves restrictions upon more general substance sortals. These more general substance sortals are in turn restrictions upon the ultimate sortals, which are intimately tied up with criteria of identity. Sortals which are lower in the hierarchy have the criterion of identity that they do in virtue of being restrictions of the particular ultimate sortal that they are a restriction of.

So, does accepting ultimate sortals entail sortal essentialism? No. Accepting ultimate sortals brings us no closer to sortal essentialism than accepting substance sortals did. Frankly, the only reason that Wiggins is forced into postulating the sortal hierarchy is because he is willing to accept that more than one substance sortal can apply to an object at a time but is committed to the idea that identity is not relative: while identity might be identity-under-a-sortal, it is still absolute. Since permitting two sortals with different criteria of identity to apply to a single object would open up the possibility of relative identity, Wiggins must postulate his hierarchical picture.

What forces him into postulating the existence of ultimate sortals is the fear that his criteria of identity will become vacuous if the hierarchy goes up too far; since all sortals that are restrictions of a higher-level sortal must share the same criteria of identity, if the hierarchy continued upwards to a single, universally applicable sortal – e.g. **entity** – then the criteria of identity that apply to a property, a proposition, a predicate, and a person must be the same. Hemmed in, Wiggins is pushed into stipulating the limits of restriction in the form of the ultimate sortals. Nothing in this story tells us anything about an object's essential properties. It might be true that Durandal actually is an instance of **falchion**, **sword**, and the ultimate sortal **bladed weapon**, but there might be a possible world where Durandal is an instance of **outrigger, canoe,** and **boat**. So, as before, no sortal essentialism here.

This does, however, give us Wiggins's theory of individuation: individuation is dependent upon an object's instantiating a particular ultimate, substance sortal that is affiliated with a particular criterion of identity. This criterion of identity determines how an object comes into being, how it behaves, how it interacts with other things, how it develops, and how it ceases to be – in other words, it fixes the persistence, identity, and developmental conditions of the object.

An additional maxim: (Δ)

So now we've got Wiggins's theory of individuation, and we know that this theory is compatible with sortal accidentialism. In order to get to his sortal essentialism, Wiggins adds a few more supplemental maxims. While he adds several, the one that is most relevant is his (Δ).[76] While the introduction and elucidation of the maxim is lengthy and rambling, effectively it boils down to a three-fold claim

(Δ)   (i) x could be Φ if and only if it is possible to conceive of x's being Φ

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[76] Irrelevant ones include (A), which stipulates that we should ignore possibilia, and (Γ), which requires that we give up on essential properties providing sufficient identity conditions.

(ii) *x* must be Φ if and only if it is not possible to conceive of *x*'s being ¬Φ.

(iii)The position of the boundary between what one can conceive of *x* and what one cannot conceive of *x* depends on *x*; i.e. depends on which thing or what thing the thing x *actually* is. [2001: 111]

Thus accepting (Δ) amounts to agreeing that whatever is possible for an object x must in some way be dependent upon what x actually is. Now it is unclear what 'what x actually is' is meant to mean here: given the proximity this has to the Aristotelian question (i.e. 'what is it?'), this might be taken to imply that what is possible for x is dependent upon what sortal x is an instance of. If this is the case, then assuming this maxim amounts to Wiggins simply assuming the truth of sortal essentialism. So, to have a valid argument for sortal essentialism, this first reading of (Δ) cannot be what Wiggins is relying upon.

Thankfully, there is a second, non-question begging reading. According to it, we could also understand 'what x actually is' as expressing the thought that what is possible for x depends on some actual properties of x – i.e. what is possible for x cannot conflict with what is actually the case for x. This interpretation is in line with the quote from Ayer that Wiggins offers in support of this maxim:

> …we have to maintain some anchorage in reality if our references are to be successful… There appear to be no general rules for deciding what this anchorage may be… One could imagine that the Pyramids were built at a different time, or perhaps even in a different country. If one anchors Dickens to other items in his biography, one can conceive of his not having been a writer: if one identifies him by his writings one can perhaps conceive of his having lived in a different century. But could we consistently place him in the distant future or in prehistoric times? …It is a rather arbitrary question in this sort of case. [1973: 197]

Since all it really says is that what is necessary and possible for an object must be consistent with what is actually true of the object, this reading does not assume sortal essentialism. With this in mind, Wiggins must be accepting this second reading of (Δ).

This gives us the maxim that I take to be relevant for Wiggins's argument for sortal essentialism. Note that it does not entail sortal essentialism – and if it does, that is because it simply assumes it to be the case.

The {Eiffel Tower, Crystal Palace} argument

With his theory of individuation in place, and having secured the above maxim, Wiggins then runs an argument concerning the essence of sets. First, Wiggins assumes that it is true of any set that it necessarily has the members that it does. He then suggests we

> Suppose… we are invited to think of a thing α simply identified as the entity (whether class or attribute we do not yet know) to which there belong the items x and y and only these. Then it seems that, if we are to envisage α for what it is, the question we have to ask is whether α, the very thing α, could have dispensed with the particular entities x and y. If it could – if α could lack x or could lack y – then α is not a set or a class. [2001: 119]

This is a fairly straightforward argument, and one that I think most would agree with – certainly nothing to worry the sortal accidentialist here.

However, applying (Δ), Wiggins then concludes that

> One might say that the pair set {Eiffel Tower, Crystal Palace} is essentially a set, and essentially a set with just these members, because nothing could count as envisaging that very set in a way that implied that it was not a set, or that it lacked these members. [2001: 120]

Thus Wiggins derives sortal essentialism for {Eiffel Tower, Crystal Palace}. How did he do it? Given the first part of the argument, we know that the following conditional is necessary: if α

is a set containing *x* and *y*, then α could not lack *x*. Applying this, we can conclude that the abstract object {Eiffel Tower, Crystal Palace} necessarily has the property *if a set, then has Eiffel Tower as a member*. Having *this* property necessarily does not entail that {Eiffel Tower, Crystal Palace} is necessarily a set – after all, I (vacuously) have that property too. Does that make me necessarily a set?

So where does Wiggins get the conclusion that {Eiffel Tower, Crystal Palace} is necessarily a set, let alone essentially one? The only way is through his application of (Δ). But, given the conclusions of the previous section, we know that the only way that an application of (Δ) would entail sortal essentialism is if Wiggins used the first, question begging, reading, the one where (Δ) says that what is possible for an object is constrained by what sortal the object actually falls under. This invalidates the argument. So there is no way to derive the conclusion that {Eiffel Tower, Crystal Palace} is necessarily a set without begging the question.

An alternative route to the conclusion?

Yet maybe Wiggins *didn't* use the first reading of (Δ). Given the necessity of identity, it follows that an object necessarily is the same across all possible worlds. Further, given Wiggins's theory of individuation, identity is identity-under-a-sortal. Joining these two together, it follows that an object necessarily is the same under the same sortal across all possible worlds. Linking this with (Δ), we then get the fact that {Eiffel Tower, Crystal Palace} is necessarily a set: it actually is a set, and it *must* be a set in order to be identical to itself. Then the first part of the argument serves to tell us that it also essentially has the Eiffel Tower as a member.

The problem with this version of the argument is that nowhere in the description of what criteria of identity did Wiggins include the fact that they also provide what I call trans-world persistence criteria (Mackie calls such these 'principles of counterfactual existence').

Plugging them in now would amount to Wiggins sneaking some further role for criteria of identity to play that entails sortal essentialism.

Further, it is unclear what exactly it would even mean to allow criteria of identity to supply trans-world persistence criteria. Mackie suggests that a trans-world persistence criterion would by definition 'determine the ways that a thing that is actually an F could and could not have been different', and that such a definition is

> very nearly a tautology. …it can tell us absolutely nothing about what the limits imposed by a thing's principle of counterfactual existence is likely to be. We shall get the result that it is true that some particular cat could not have existed without its [trans-world persistence criteria]. But this statement, by itself, tells us nothing about what limits are laid down by this principle. [2006: 142]

So even if Wiggins did sneak trans-world persistence criteria into his criteria of identity, it would not tell us anything about the necessary (and therefore essential) properties of an object.

Additionally, it is compatible with sortal accidentialism that criteria of identity supply trans-world persistence criteria, since it is consistent that two distinct ultimate sortals share trans-world persistence criteria. This implies that an instance of one of these sortals could have been an instance of the other, which falsifies sortal essentialism. Wiggins might try to argue that sortals cannot overlap when it comes to trans-world persistence criteria without being restrictions on some more general sortal. To do so, he would need to show why trans-world persistence criteria aren't the kind of thing two distinct sortals could share. He had an argument against this when it came to persistence criteria: if two distinct ultimate sortals could share persistence conditions, it would imply Geach's relative identity thesis. Since Geach's thesis is false, it isn't possible for two sortals to share persistence criteria. Can Wiggins come up with a similar argument for the impossibility that two distinct ultimate sortals should share their trans-world persistence criteria? Until he does, there is no reason to think that two distinct ultimate sortals cannot share trans-world persistence criteria.

Making the failure clear: the anchor constraint and Caesar

Wiggins is under the impression that this {Eiffel Tower, Crystal Palace} argument does not beg the question. It does. To make it clear that it does, we need only note that he thinks that combining his maxims with his theory of individuation entails the *anchor constraint*:

> x could have the property Φ, or it is possible for x to have Φ if and only if it is genuinely possible to conceive of x's having Φ; and a thinker genuinely conceives of x as having Φ only if there is some sortal concept f such that: (i) f adequately answers the Aristotelian question what x is, and commits anyone who singles a thing out as an instantiation of f to an identity-cum-persistence condition for x: (ii) f and Φ are cosatisfiable by x, and if x had the property Φ that would not preclude x's being singled out as this very instantiation of f. [2001: 121]

At first glance, the anchor constraint is acceptable to a sortal accidentalist: every property that is possible for an object must be possible for it relative to the object's being an instance of some sortal, though not any single, particular sortal. Yet, when Wiggins applies the anchor constraint to Caesar, he concludes that

> According to this elucidation, it is possible, for all that has been shown so far, to conceive of Caesar's having a different career; it is possible to conceive of this very man's not being consul in 69 Bc, or his not conquering Gaul, or his not crossing the Rubicon, or even of his not in fact being male or not living through adolescence… What then do the constraints so far framed suggest that is properly impossible to envisage of Caesar? The *this such* conception of individuation and the paradigm of the previous section [the {Eiffel Tower, Crystal Palace} argument], combining in the elucidation now proposed, suggest that among the things it is hardest to conceive of Caesar's not being is human being. For it anything plays here the part that we found the concept *set* or *class* to play in our specimen argument, then the concept *human being* plays it. Or so it would appear. [2001: 122]

This makes it clear that Wiggins is relying upon one of the two question-begging versions of the argument I presented above. Perhaps he is reading (Δ) in the way that it implies that what is possible for an object must be consistent with the object's being an instance of its actual sortal. Perhaps he is sneaking into the job description of criteria of identity the idea that they supply trans-world persistence criteria, and that two ultimate sortals cannot overlap when it comes to such criteria. Perhaps he is doing both. Any one of these amounts to begging the question against the sortal accidentialist. In this way, I think it not possible to derive sortal essentialism from Wiggins's theory of individuation. If it is, Wiggins has certainly not shown us how.

Further objections

The above is fatal to Wiggins's argument for sortal essentialism. However, there are other objections to Wiggins's brand of sortal essentialism which make the position unappealing even if the 'argument' were to work. Here I examine two of these additional objections, with the aim of further burying Wiggins.

Ambiguity in ultimate sortals entails ambiguity in essential properties

According to Wiggins, the only sortal that is essential to a particular individual is that individual's ultimate sortal [1980: 66]. An interesting consequence of this is that, for any given object, it is possible for that object to be an instance of any sortal which shares the criteria of identity of the object's ultimate sortal. Take Wally the kestrel. Wally essentially has the particular criterion of identity associated with **kestrel** and therefore with the more general **raptor**. Since it is also a restriction upon **raptor** (and therefore shares the same criterion of identity), Wally could have been a instance of **red-tailed hawk**. In fact, Wally could have been one of any of the wide variety of avians that are all restrictions upon **raptor**: he could have been any sort of falcon, hawk, eagle, owl, or what have you - everything that is a restriction on

raptor is available to Wally. Of course, this account of what is possible for Wally assumes that **raptor** is Wally's ultimate sortal; if it were something more general, like **avian**, then what Wally might have been opens up even further.

This makes clear a potential problem. Without knowing an object's ultimate sortal, we cannot know what is essential to it. If his sortal essentialism is to tell us anything interesting about what specific individuals might or might not have been, it is necessary for Wiggins to specify which ultimate sortals apply to an individual. Here Wiggins leaves us in a lurch: he offers no argument for any particular picture regarding the nature or number of ultimate sortals. It might be the case that **raptor** is the ultimate sortal for Wally, or perhaps instead **avian**; lacking a clear understanding of the top level of the sortal hierarchy, we cannot say which is correct. Until he specifies more about the ultimate sortals, Wiggins's sortal essentialism is empty.

'Object' as an ultimate sortal

According to Xu [1997], there is psychological evidence that **object**, understood as 'bounded, coherent, three-dimensional, physical object that moves as a whole' operates as a fundamental sortal for people, especially children as they first begin to recognize and categorize things in the world [1997: 367].[77] Further, Xu argues that accepting **object** as a genuine sortal is vital for the later construction of more specific restricted sortals like *cup* and *dog* – in effect, without accepting **object** as a fundamental sortal, we cannot later come to understand the more complicated, specific sortals. If Xu is correct, we have reason to believe that **object** is in fact an ultimate sortal. Clearly, this implies that all material objects – from people to plants to cars – are instances of this incredibly broad ultimate sortal.

This creates two problems for Wiggins. First, this result renders Wiggins' claim that identity is identity-under-a-sortal nearly vacuous: the claim that every material object must be

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[77] See Spelke [1990] for more on this definition of **object** and Xu [2005, 2007] for expanded versions of the argument for **object** as a fundamental sortal.

an **object** in order to exist sounds an awful lot like the claim that something must exist in order to exist. Second, **object**'s being an ultimate sortal makes Wiggins' sortal essentialism almost entirely vacuous. Assume that **object** is an ultimate sortal. Every material object is then essentially an instance of it. It must then be the case that every other material object's sortal is a restriction upon the ultimate sortal **object**. So any material object could have been an instance of any of these other 'restricted' sortals: Socrates could have been a **car**, a **stuffed dinosaur**, a **poached egg**, or indeed any other restriction on **material object**. Thus, unless Wiggins can dismiss **object**'s being a genuine ultimate sortal, he cannot provide an interesting version of sortal essentialism.

Wiggins responded by noting that

> ...where I have said ... that 'thing' or 'object' or 'substance' are dummy sortal concepts, I have never meant to disparage these concepts. ('Formal' might have been better than 'dummy'.) For my view has always been that formal concepts such as object are essential to our thought. They are essential but they are not themselves sortal concepts. [1997: 418]

In other words, Wiggins is happy to grant that **object** is in some sense a sortal – it is definitely a necessary element for our individuating the variety of things in the world. However, object is only a *formal sortal*, and not a genuine sortal. What makes the difference? Well, according to Wiggins, genuine sortals have genuine *modes of activity* that characterize them while formal sortals do not [1997: 414].[78] This means that while **object** and its kin might be necessary for our development of genuine sortals, they are not ultimate sortals.

The justification for this assertion must be something like the following: genuine sortals like **tiger** have affiliated with them certain classes of actions that we think typify their instances. Tigers hunt, pounce, eat other animals, grow and develop in certain ways, cease to exist if we cut their heads off, etc. These all amount to typical modes of activity for instances of **tiger**. This isn't to say that *every* tiger does all of these, or that one *necessarily* has to any of

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[78] See Wiggins [2001: 84] and [1980: 60].

them – just that the actions on this list typify tigers. Nothing like this list can be specified for **object**. Ergo, **object** cannot be a genuine sortal.

The problem with this argument is that it ignores Xu's definition of **object** as a bounded, coherent, three-dimensional, physical object that moves as a whole. This definition specifies three typical modes of activity for all objects: being spatially defined (i.e. 'bounded'), moving through space as a coherent entity, and having physical parts. Further, these modes of activity are even more typifying than the actions affiliated with tiger, since they are genuinely necessary for being an instance of **object**!

So, the onus is on Wiggins. He must specify conditions for determining what legitimate and illegitimate modes of activity are. Until he offers us a way to categorise modes of activity, we have no reason to think that **object** is not a genuine sortal. As such, Wiggins's sortal essentialism is effectively vacuous.

Conclusion

In this chapter I have presented and rejected Wiggins's sortal essentialism. After laying out his theory of individuation and the affiliated, rather convoluted, hierarchy of sortals, I demonstrated that at no point did it entail sortal essentialism. I then examined an argument of Wiggins's that attempted to prove that *being a set* is essential to {Eiffel Tower, Crystal Palace}. This argument makes clear that the only way to derive sortal essentialism from Wiggins's theory of individuation is to beg the question against the sortal accidentialist. Further evidence emerged when I examined a second argument regarding applying the anchor constraint to Caesar. Finally, even if Wiggins's sortal essentialism were true, it faces a pair of problems. First, without specifying what ultimate sortals there are, it is content-less. Second, Xu's argument that **object** is an ultimate sortal entails that Wiggins' sortal essentialism is uninteresting. For these reasons, I conclude that sortal properties, at least as Wiggins construes them, cannot be included within the essential extension – sortal essentialism must be rejected.

Arguments for Origin Essentialism - Chapter 7

In the previous chapter we looked at arguments for sortal essentialism, concluding that the arguments for it were either unsuccessful or question-begging. Here, we focus on another, equally popular collection of supposed essential properties, concerning an object's *origin*. To get a handle on the position, let us turn to Kripke's infamous 'proof' for origin essentalism. This will lead to Salmon's expansion of the argument, followed by a series of objections to it from Robertson and Damnjanovic. I then turn to Forbes' four-world argument, which is rejected for similar reasons. Finally, I turn to Rohrbaugh and deRosset's independence principle arguments for origin essentialism. These will also be shown to be unsuccessful. It will thereby be shown that origin essentialism, as with sortal essentialism, cannot get off the ground: either the arguments for it are unsuccessful (in that they do not entail origin essentialism) or beg the question. Yet before looking at the arguments for origin essentialism, I must discuss the distinction between the strong and weak interpretations of the thesis.

Two interpretations of origin essentialism

The strongest interpretation of the origin essentialist thesis is that the *exact* original material constitution of an entity is essential to it – thus if I was originally composed of the collection of matter m, then I am such that I could not exist without first being constituted by m. This strong interpretation conflicts with the thought that *some* elements of an object's original material constitution could be different: for any table, say, the carpenter who manufactured it could have made the same table while using one or two different nails.

Consequently, this conflict is sufficient to entail the rejection of the the strong interpretation of the origin essentialist thesis. Such a rejection entails the acceptance of

(FO) Some variation in the original material constitution of an entity is possible.[79]

This principle of flexible origins captures the intuitive idea that even if objects essentially have their origins, they still could have had *slightly* different origins, i.e. that 'a nail here or a splinter there could have been otherwise' [Hawthorne & Gendler 2000: 286]. All sensible origin essentialists – or, as Robertson puts it, 'everyone writing on this topic' [1998: 732 n5] accepts (FO). Importantly, this includes all the essentialists I will discuss here: Kripke, Salmon, Forbes, and Rohrbaugh and deRosset.[80] With the notion of (FO) in hand, we can now move on to Kripke's 'proof'.

Kripke's footnote 56 'proof'

The common starting point for origin essentialism is Kripke's 'something like a proof' in footnote 56 of *Naming and Necessity*:

> A principle suggested by these examples is: *If a material object has its origin from a certain hunk of matter, it could not have had its origin in any other matter.* Some qualifications might have to be stated… but in a large class of cases the principle is perhaps susceptible of something like proof, using the principle of the necessity of identity for particulars. Let 'B' be a name (rigid designator) of a table, let 'A' name the piece of wood from which it actually came. Let 'C' name another piece of wood. Then suppose B were made from A, as in the actual world, but also another table D were simultaneously made from C. (We assume that there is no relation between A and C which makes the possibility of making a table from one dependent on the possibility of making a table from the other.) Now in this situation B≠D; hence, even if D were made by itself, and no table were made from A, D would not be B.

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[79] Robertson's (PA) [1998: 730] is slightly different, reading 'slight variation in the original material constitution of a table is possible.' Following Hawthorne & Gendler [2000], I have generalized the principle.

[80] In his original argument for origin essentialism, Kripke expressed such qualifications: while it is true that Queen Elizabeth couldn't have come from a *totally* different sperm and egg, she could have come from the same sperm/egg slightly modified. Similarly, Kripke's lectern could not have been made from *completely* different material, though it could have varied slightly in its composing material. [1980: 113] Further, Robertson notes that in conversation Kripke accepted slight variation in original constitution, thereby rejecting the strong interpretation [1998: 732n5].

…In any event, the argument applies only if the making of D from C does not affect the possibility of making B from A, and vice-versa. [Kripke 1980: 114n56]

As I understand it, the argument here goes like this:

    (1) B is a table that actually originates from piece of wood, A,

        while C is a distinct piece of wood that could be made into a table.   [Premise]

    (2) Nothing prevents the making of a table from A and C at the same time.   [Premise]

    (3) Thus there is a possible world w where B is made from A,

        and some table D is made from C.   [Premise]

    (4) It is impossible for a table to originate both

        from A and C in the same world.   [Premise]

    (5) B≠D.   [(3), (4)]

    (6) Even if D were made by itself

        and no table made from A, D would not be B.   [(5), ND]

Now, even if this argument were sound, all that is entailed by (5) is that table B is necessarily distinct from table D. To entail origin *essentialism*, Kripke would need to prove that B could not be made from C, not that some table which is made from C *in the same world as B is made from A* could not have been B. As Salmon puts it,

… Kripke has shown only that in any possible world in which a table D is constructed, D still is not the same table as B. What he needs to show is that in any possible world in which a table (meaning any table) is made from hunk C, that very table made from hunk C still is not table B. [1979: 709]

So Kripke's 'proof' doesn't prove origin essentialism. However, there are plenty of other arguments – many of which use some of the structure of Kripke's argument – still out there.[81] To that end, I turn next to Salmon's argument for origin essentialism.

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[81] McGinn [1976] and Noonan [1983] offer unsuccessful arguments that mimic Kripke's. See Forbes [1985] for a criticism of McGinn, and Robertson [1998: 738n16] for one of Noonan.

Salmon's sufficiency argument(s)

Nathan Salmon [1981, 1986, 1989] has offered a trio of arguments aimed at proving the essentiality of origins. Salmon himself endorses the last of the three, critiquing the previous two.

The original version of Salmon's argument goes:

(1) If a table x is originally and entirely constructed from (all of) y and it is possible for a table to be originally constructed from (all of) z, then it is also possible for table x to be originally constructed from y and in addition some table or other x' to be originally constructed from (all of) z.

(2) If y≠z, then it is impossible that a single table x is originally constructed from y and in addition is originally constructed from (all of) z.

(3) If it is possible that a table x' is originally constructed from (all of) z, then necessarily, any table originally constructed from z is the very table x' and no other.

(4) Therefore if a given table originates from a certain hunk of matter, then it is necessary that the given table does not originate from any non-overlapping hunk of matter that could be made into a table.[82]

Premise **(1)** is an instance of a *compossibility principle*. Such principles are used to generate possible worlds by sticking together distinct entities/processes in some new possible world. Here, Salmon restricts compossiblity to table production, simply to delineate the relevant matters of interest. This is similar to Kripke's construction of a possible world where his tables B and D co-exist.

Meanwhile, premise **(2)** is an *impossibility principle,* so-called because it stipulates what is impossible given certain conditions. The particular impossibility principle employed

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[82] I here follow Robertson [1998] in how I lay out the argument, though (1), (2), and (3) are Salmon's (IV), (I), and (V) [1981: 203, 200, 206 respectively]. Further, by allowing for the possibly of origin from overlapping hunks, the origin essentialist allows for variation in original constitution, in line with (FO) above. The origin essentialist must accept the non-overlapping caveat because of the rejection of the strong interpretation; should they accept the strong interpretation, they could then drop 'non-overlapping'.

by same is the *principle of origin uniqueness*, which states that no object has more than one origin per world. The use of an impossibility principle (indeed, (OU) itself) is something else Salmon borrows from Kripke.

Finally, we have **(3)**, which is a *sufficiency principle*. In general, a sufficiency principle stipulates some qualitative sufficient identity condition; one trivial sufficiency principle would be

(TS) For all *y*, necessarily, if *y* has the property *being identical to x*, *y*=x.

Non-trivial sufficiency principles, like (3), are (as we shall see in the following sections), difficult to justify, yet without them, arguments for origin essentialism will always end, like Kripke's, in failure.

With these principles in hand, Salmon can produce the following case: Take a table, Al. Al is composed of a collection of material Hunk. There exists a different collection of material Lump, which has no common part with Hunk, but could itself be made into a table. From **(1)**, it follows Al could be originally composed of Hunk and Lump be made into a table, Bill. In such a world, Al and Bill are distinct (from **(2)**). Further, *any* table that is originally composed by Lump is Bill (via **(3)**). Since Bill and Al are distinct, we know that Al could *never* be originally composed of Lump – and therefore that Al is necessarily originally composed of Hunk.

Salmon rejects this first argument because, as he says, **(3)** entails 'too much' [1981: 210]: take Charlie, a table of a radically different table-kind than Al (e.g. Charlie is a card table, while Al is a dining table with a removable spacer), such that Charlie ≠ Al. Now, Hunk might have been made into Charlie instead of Al. According to **(3)**, we must identify Al with Charlie because *any* table that is originally constituted by Hunk is identical to Al. Yet Charlie is, by stipulation, distinct from Al. So either *every* table, even one of a radically different kind, which is constructed from Hunk must be identical to Al or we must weaken the sufficiency

principle in such a way as to allow for Charlie to be distinct from Al despite the fact that they share their origin.

In response, Salmon weakens his sufficiency principle, offering instead,

(3') If it is possible that a table x' is originally constructed from z according to a certain plan P, necessarily any table originally constructed from z according to P is the very same table x'.[83]

With (3') we need not identify Charlie with Al since they are built according to different plans. So this gives us the second version of Salmon's argument: simply plug (3') in for (3), and the troublesome Al-Charlie case is avoided.

Unfortunately, this version of the argument faces a new problem: recycling cases (also known as Ship of Theseus cases).[84] Suppose that Al and Hunk stand in the composition relation mentioned above, but that over time Al undergoes a series of repairs until he is constituted entirely by Lump, with all of Al's old parts being saved up. At the point that Al becomes entirely composed of Lump, all of Al's old parts – that is, the matter that is Hunk – is used to build a new table, Dillon, according to the very same plan as Al – so if Al is a dining room table with a removable spacer, Dillon is too. According to (3'), we must identify Dillon with Al, as Dillon satisfies the sufficiency conditions. Yet Dillon and Al are obviously distinct, differing (at least) in spatio-temporal location and time of creation. Thus the possibility of recycling cases undermines the argument using (3').[85]

In response to this case, Salmon further weakens the sufficiency principle to

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[83] See Salmon [1981: 211] and Robertson [1998: 734]

[84] While Ship of Theseus cases have been around for thousands of years, Forbes [1994, 2002] credits McKay [1986] with first bringing up the 'Recycling Problem' against arguments for origin essentialism.

[85] Recycling problems also can be run against the argument using (3) and, as we will see, against other versions of the argument as well.

(3") If it is possible that a table *x'* is *the only table* originally constructed from *z* according to plan *P*, then necessarily, any table that is *the only table* originally constructed from *z* according to *P* is the very table *x'*. [Salmon 1986: 229, Robertson 1998: 735-6]

This entails altering the conclusion of the argument slightly, to

(4") If a given table originates from a certain hunk of matter, then it is necessary that the given table is not *the only table* to originate from a non-overlapping hunk of matter.

This appears to entail a form of origin essentialism: no particular table can be the only table originating from a distinct hunk of matter from the one it actually does.

Unfortunately, as Robertson [1998: 735] shows, even given **(4")**, origin essentialism isn't entailed: it is possible that table Al could be originally composed of a different hunk of matter, as long as Al is one of *two* tables that are so originally composed. Take a world where table Edith is composed out of hunk of matter Lump, then undergoes a series of repairs such that Lump no longer constitutes any of Edith. At this point, Lump could be recycled to build a new table, and this table could be Al. Nothing in **(4")** blocks *this* possibility. However, this implies that Al could have had two different origins: Al could have been the only table constructed out of Hunk (as in our first cases) and the second table constructed out of Lump. Thus the third version of Salmon's argument also fails to entail origin essentialism.

So Salmon's arguments don't get us to origin essentialism. Yet, by adding a premise and modifying the conclusion, the above Al-Edith problem could be avoided. The premise to add is

(5) If it is possible for a table x to be originally constructed from a hunk of matter y, then it is possible for x to be the only table originally constructed from the hunk of matter y. [Robertson 1998: 736]

This *isolation premise* seems justified by reasoning similar to the combinatorial reasoning that generated **(1)**.[86]

Now, in the problem case for **(4")** involving Edith and Al, we concluded that Al is possibly originally constructed from Lump. Given **(5)**, we can conclude that there is some possible world where Al is the *only* table originally constructed from Lump. However, such a world is impossible: Al originates in Hunk, which is distinct from Lump, and (by **(4")**) therefore cannot be the only table that originates from Lump. Thus, by adding **(5)** to the above argument for **(4")**, we get

(6) If it is possible for a table x to be originally constructed from a hunk of matter y, then table x could not have been originally constructed from any non-overlapping hunk z.

This is exactly what the origin essentialist wants: no particular table could have been originally constructed from any hunk of matter which is entirely non-overlapping.[87] So there are four variations on Salmon's sufficiency argument. The first was rejected by Salmon for incorrectly identifying tables of distinct kinds and the second because it falls prey to a recycling argument. This led to Salmon constructing the third, but Robertson proves that even this doesn't entail origin essentialism. In a spirit of fair play, she suggests a fourth

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[86] Just as we could us recombination to stick separate objects or processes together to form new possible worlds, we can instead pull apart unrelated the objects or processes to form two new, single occupant worlds. So if recombination justifies my being able to go from Possibly A and Possibly B to Possibly (A and B), it equally justifies going from Possibly (A and B) to Possibly A and Possibly B – again, only if A and B are unrelated objects or processes, as originally stipulated.

[87] Again, the non-overlapping caveat is required given the acceptance of (FO). Reject (FO), and one can replace 'entirely non-overlapping' with 'distinct'.

version, with the added premise **(5)**, which does appear to entail origin essentialism. However, even this version of the argument faces a pair of objections, which we turn to in the next sections.

Robertson's objections

Robertson has two objections to the final version of Salmon's argument. The first objection turns upon an *almost* recycling case and the second upon using a recycling case and an application of **(5)** to generate a contradictory identification. I examine each objection in turn.[88]

An almost recycling case[89]

Suppose Frank the table is originally composed of collection of matter Chunk, a hunk of matter which is in all but a few bits identical to Hunk, according to plan *P*. Due to wear and tear, Frank eventually comes to be composed of Lump, a hunk of matter which has no parts overlapping with Hunk (though some overlapping with Chunk). The bits of matter which compose Hunk (minus the bits overlapping Chunk) are then used to construct Gertrude, a new table, constructed according to plan *P*. Let the world where both are built be world *w*.

By **(5)** it is possible that Gertrude be the only table originally made from Hunk according to plan *P*. Call the Gertrude-only-world *w1*. Further, given the principle of flexible origins (FO), it is possible for Frank to be the only table originally composed of Hunk according to *P*. Then, by (5), it is possible for there to be a world where Frank is the only table composed of Hunk. Let such a world be *w2*.

According to **(3")**, Frank=Gertrude: since it is possible that Frank is the only table originally constructed from Hunk according to *P* (guaranteed by world *w2*), any table that

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[88] Note that I invert the order of the objections from how Robertson herself presents them. This is because I think her almost recycling objection can be defeated, though her recycling and (5) objection cannot, and prefer to build up to the stronger of the two.

[89] See Robertson [1998: 737-8]

could be the only table originally constructed from Hunk according to *P* is Frank. Since the table that exists in *w1* (namely, Gertrude) is the only table originally constructed from Hunk, it must be identical to Frank. By the necessity of identity, Gertrude = Frank in world *w*. Yet Gertrude≠Frank in *w*. Therefore the improved version of Salmon's argument leads to a contradiction.

Replying to this objection

One obvious reply that the origin essentialist might give to this objection is to reject (FO), thereby accepting the strong interpretation of the origin thesis. The problem with this, as we have noted, is that it commits the origin essentialist to a counter-intuitive level of detail – any change at all in the original material used to construct a table entails a different table has been constructed. So if a different response could be found to this objection, it would be to the origin essentialist's favour.

Hawthorne & Gendler's [2000] provides a response to this objection which hinges upon changing the sufficiency premise of the argument (yet again). Call any variant hunk of matter which 'largely (but not wholly) overlaps m' an *m-variant* [H&G 2000: 288]. Noting the possibility of m-variants, the origin essentialist can alter the sufficiency premise from (**3"**) to

> (**3'''**) If it is possible that (a) table x is the only table originally constructed from *m* and (b) no other table is originally constructed from an m-variant according to plan P; then necessarily, any table which is the only table originally constructed from m, where no other table is originally constructed from an m-variant according to plan P, is x. [Hawthorne & Gendler 2000: 290, Robertson 2000: 301]

This version of the sufficiency premise automatically rules out those worlds where there is near-duplication of a table, e.g. worlds like the Frank and Edith inhabited world *w*. Since the antecedent of the conditional in the sufficiency premise is not satisfied by Frank (or Edith) in

world *w*, it cannot be a counter-example to the overall argument. Consequently, a variation of Salmon's sufficiency argument using this sufficiency premise apparently dodges this objection.

However, as Robertson [2000: 301] points out, this sufficiency premise is still vulnerable to the Al-Charlie case employed against **(3)**: suppose that Al is the only table originally made from *m* according to plan *P*, while nothing is made from *m* according to plan *P'*. It is possible that Charlie be the only table made from *m* according to the *P'* while no table is made from any *m*-variant according to plan *P'*. **(3''')** would then incorrectly identify Charlie and Al. As such, the sufficiency principle requires another slight alteration, to

> **(3'''')** If it is possible that (a) table x is the only table originally constructed from m *according to plan P* and (b) no table is originally constructed from an m-variant according to plan P; then necessarily any table which is the only table originally constructed from m according to P, where no table is originally constructed from an m-variant according to P, is x. [Robertson 2000: 301]

With this slight (but vital) alteration in place, Salmon's argument avoids the almost recycling objection. However, the success here is only temporary; Robertson has a second objection.

Objection 2: recycling, (3'''') and (5) together entail an absurdity

Take a recycling case similar to the one used against Salmon's second argument: suppose that Ishmael is an actual table, originally composed of Hunk and that Ishmael undergoes a series of repairs over time until it is constituted entirely by Lump (which is entirely non-overlapping with Hunk). Hunk is then used to compose Jonah, a table of the same plan as Ishmael. Call this world *w*.

Now, it is possible that Ishmael is the only table constructed from Hunk according to Ishmael's plan – call such a world *w'*. By **(5)**, we know that it is possible that Jonah is the first

and only table to be constructed out of Hunk (according to the same plan). Applying (**3''''**), we can conclude that Jonah=Ishmael: since it is possible that Ishmael is the only table constructed from Hunk according to Ishmael's plan, *any* table that could be the only table originating from Hunk according to the same plan must be identical to Ishmael. Therefore Jonah=Ishmael. Applying the necessity of identity, we can conclude that Jonah=Ishmael in world *w,* which is, according to Robertson, 'absurd' [1998: 737]. This second objection applies to *all* variations of Salmon's argument, including the version offered by Hawthrone & Gendler.

Replying to Robertson's second objection

Is it possible to salvage Salmon's argument? Hawthorne & Gendler suggest that the trouble emerges from the interaction of four separate principles:

(a) The possibility of recycling case, i.e. the possibility of two distinct things being originally made from some hunk of matter *m* in some arbitrary ordering.
(b) The transitivity of trans-world identity.
(c) Premise **(5)**
(d) The sufficiency premise of the argument (likely, this must be (**3''''**)).

Each of these principles is independently plausible: recycling seems *prima facie* possible, the transitivity of trans-world identity seems natural, **(5)** is required for the argument to work, and the sufficiency premise is required to avoid the fate of Kripke's 'proof'. Yet taken together, they lead to Robertson's second objection. Consequently, one of these has to go – but which?

Rejecting recycling

The first option consists of rejecting the possibility of recycling cases. How could the origin essentialist do this? A flat-footed denial of the recycling case ends the debate in an unsatisfactory stalemate, so some reason must be advanced by the origin essentialist for blocking such cases. One way would be to alter the sufficiency premise by adding in space and time construction restrictions, e.g.

> **(3ST)** If it is possible that (a) table x is the only table originally constructed from m according to plan P, *at spatial location L, and at time T* and (b) no table is originally constructed from an m-variant according to plan P *at spatial location L, and at time T*; then necessarily any table which is the only table originally constructed from m according to P *at spatial location L, and at time T*, where no table is originally constructed from an m-variant according to P *at spatial location L, and at time T*, is x.

This restricted version of the sufficiency principle would block any identification via recycling: if a table is a product of recycling, it must then be constructed at a different time (and potentially a different place) than the original production. So no applicable recycling case is possible.

The unfortunate result of such a move, however, is a commitment to *location* and *temporal* essentialism, i.e. that the location and time of original construction is essential to a table.[90] Such essentialisms are intuitively absurd. Consequently, while the origin essentialist can provide a reason to reject recycling cases via **(3ST)**, the after-effects of such a move negate any positive conclusions. Further, (3ST) does not in fact block the possibility of recycling: it would be possible to time the recycling process in such a way that time and place of origin would be identical, e.g. by building the first table at time *t-n*, removing and replacing the matter, then using the matter to build the second table at the requisite time. Thus even

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[90] [Hawthorne & Gendler 2000: 289n6, 295], [Robertson 1998: 738n16], [Yablo 1988: 336-7]

including temporal and location essentialism into the sufficiency principle won't help to block the trouble.

Rejecting the transitivity of trans-world identity

The second option for responding to Robertson's objection is to deny the transitivity of trans-world identity.[91] If trans-world identity is non-transitive, then the identification of Jonah and Ishmael cannot occur and thus the objection dissolves. One could achieve this result by understanding trans-world identity in terms of a counterpart relation (as Lewis [1968, 1986] and Forbes [1985] suggests) or by restricting the accessibility relation within our modal logic so as to eliminate transitivity (as Salmon [1986, 1989] suggests).

However, while such a move would guarantee that the argument would not be susceptible to the objection, it would also prevent the argument from going through: accepting either counterpart theory or restricting the accessibility relation amounts to denying the necessity of identity *as it is used in the argument*, thereby rendering it impossible to derive the conclusion.[92] Without the necessity of identity, the argument fails, and rejecting the transitivity of trans-world identity entails rejecting the necessity of identity. So this second option does not really work either.

Rejecting (5)

The third option is to reject **(5)**. This must be done in such a way as to avoid the other problematic case discussed by Robertson.

The most obvious way to do so would be to embrace *order essentialism*, the view that whatever number construction a table is, is essential to that table; e.g. if a table T is the fourth table constructed out of hunk of matter *m* (after *m* has been recycled three times), then T is essentially the fourth such table to be produced. T could not have been the first, second, third,

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[91] H&G's option (iii), [2000: 295]
[92] See Hawthorne & Gendler [2000: 296-7], Robertson [2000: 320]

etc. A consequence of accepting order essentialism is that it is not possible for Jonah to be the first and only table constructed from Hunk (though it is for Ishmael). Thus the problematic world where Jonah exists alone is not possible, and so (**3''''**) cannot be applied to identify Jonah and Ishmael.

However, as the argument stands, it would then only entail origin essentialism for tables that are (essentially) the *first* tables to be constructed from hunks of matter: (**3'''**) only applies to those tables which can exist by themselves. Tables which are essentially the second (or later) constructs are automatically excluded. That there would be such a difference between the essences of otherwise similar objects is strange, to say the least. Further, order essentialism itself is quite counter-intuitive. Why is it essential to a table that it be the second or third table constructed from a hunk of matter? It seems very hard to think of a good reason to accept such an idea. And, as Robertson notes, 'an argument that depends on a claim that is even less intuitively plausible than its conclusion leaves something to be desired' [2000: 303]; consequently, should origin essentialism depend upon order essentialism, then perhaps it is time to give up on origin essentialism.

Altering the sufficiency principle

The fourth and final possibility for the origin essentialist is to alter the sufficiency principle (again) to avoid Robertson's objection. Should the origin essentialist advance a sufficiency principle which eliminates the possibilities specified by Robertson, then the argument runs through. However, what form would such a sufficiency principle take? I am hard-pressed to think of any particular sufficiency principle that would be exact enough to avoid the recycling case while still guaranteeing origin essentialism. Robertson [2000: 306] accepts that perhaps there is *some* such principle, though she has no idea what form it might take. However, I think a recent argument by Damnjanovic shows that no acceptable sufficiency principle is possible.

In his [2009] and [2010], Nic Damnjanovic argues that

…arguments that employ sufficiency principles to derive [origin essentialism] can only work if they appeal to a sufficient property set that contains no exclusive properties other than material origins. And, since material origins aren't exclusive, this means that the sufficient set must contain no exclusive properties at all. Yet, if a sufficient set contains no exclusive properties then all its constituent properties are essential.' [2010: 13]

In the following two sections, I discuss his objection in order to relate it back to the possibility of finding a sufficiency principle which successfully avoids Robertson's second objection.

For the next two sections, let 'F', 'G', and 'H' refer to determinable properties, while 'F1', 'F2', 'F3', 'G1', 'G2', 'G3', etc. refer to particular determinates; e.g. H1 might be the property of *being originally composed out of hunk of matter 1*, H2 *being originally composed of hunk of matter 2*, and so on.

Groundwork

Following Forbes [1985] and Robertson [1998: 741], define an *exclusive property* as a property that only one object has at any given world – e.g. *being the first man to invent bifocals,* or *being the first table to ever be constructed.* Due to the possibility of recycling cases, we can assume that properties about material origins are not exclusive properties: our being able to construct both Ishmael and Jonah from Hunk entails that *being originally composed of Hunk* is not an exclusive property.

Now, in order to run his argument, Damnjanovic notes three facts about sufficiency principles. The first is that, by design, sufficiency principles appeal to sets of (determinable) properties; in the above examples, we were specifying properties like *being a table*, *being constructed according to a particular plan P*, and *being originally composed from a particular hunk of matter*. An important corollary to this point is that some of the properties specified may be exclusive, while others are not.

The second fact about sufficiency principles is that, if no proper sub-set of the set of properties appealed to in the principle are exclusive properties, then *all* of the properties in the set are essential [2009: 119, 2010: 101]. To see why, consider some arbitrary determinable property *F* and the set of worlds depicted in the matrix below.

@	Table T1: F1, G1, H1
World *W1*	Table T2: F2, G1, H1
World *W2*	Table T3: F1, G1, H1
	Table T4: F2, G1, H1

Imagine that the sufficiency principle specifies that having F1, G1, and H1 is sufficient to be identical to T1, and having F2, G1, and H1 is sufficient to be identical to T2. This implies that T1=T3, and T2=T4.

Further, by Leibniz's Law, we know that T3≠T4 which implies, by the necessity of distinctness, that T1≠T2. Since this is the only difference between T1 and T2, we must conclude that any two tables that differ in *F-ness* are distinct. What this means is that having a particular *F-ness* is a necessary and sufficient identity condition for being a particular table – i.e. having *F1* is *essential* to being table T1 [2009: 120, 2010: 102]. Since *F* was arbitrarily chosen, we can conclude that this holds true for *all* the properties in the set. So, when a sufficiency principle specifies a collection of properties that does not include any exclusive properties, then all of the properties must be essential.[93]

Yet suppose that there are some exclusive properties in the set. This brings us to the third fact about sufficiency principles: if there are any such exclusive properties, at least one is essential [2009: 121, 2010: 103]. As before, consider the same collection of worlds and the same sufficiency principle which identifies T1 and T3, and T2 with T4. This time, instead of an arbitrary property, let *F* be the only *exclusive* property in the set.

@	Table T1: F1, G1, H1

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[93] This is in some ways unsurprising: if having a certain set of properties is sufficient to be identical to a particular object yet none of these properties are such that only one object per world can instantiate them, if there are to be worlds with distinct objects that are qualitatively similar, every property must be essential – change properties, and you change which sufficiency condition you satisfy.

World *W1*	Table T2: F2, G1, H1
World *W2*	Table T3: F1, G1, H1
	Table T4: F2, G1, H1

Again, necessity of distinctness tells us that T1≠T2. As before, *F* must then be an essential property. However, unlike in the previous case where F was an arbitrary property, this time F is the only *exclusive* property - by definition, no two objects can instantiate the same F-determinate in the same world. Damnjanovic notes that if there are *multiple* exclusive properties in the set, 'at least the property consisting of the conjunction of all these exclusives is essential' [2010: 103].

With these three facts in hand, we can turn to Damnjanovic's objection.

Damnjanovic's objection

Understand 'H' as the determinable property *being made from a hunk*, 'H1' as *being made from hunk 1* and 'H2' *being made from hunk 2*. Now take the following set of worlds:

@	Table T1: F1, G1, H1
w1	Table T2: F1, G1, H2
w2	Table T3: F1, G1, H1
	Table T4: F1, G1, H2

Now, *w2* is possible only if none of the properties in the set other than *H* properties are exclusive. Further, due to the possibility of recycling, we know that *H* determinates are not exclusive. Consequently, *none* of the properties in the set (including *H* properties) are exclusive. But if no properties in the set are exclusive, then, by the results above, they are all essential. What this means is that a consequence of the sufficiency argument for origin essentialism is that all the properties of an object which are in the specified within the sufficiency principle are going to turn out to be essential to the object.

As Damnjanovic points out, this isn't necessarily a 'general objection' to sufficiency principles, but it is a 'consequence of doing so that is not usually appreciated' [2010: 104]. As such, if we include within the sufficiency set properties concerning order, location, or time of construction, they end up being essential properties. Since we need to include such properties in order to specify which object we are discussing given the possibility of a recycling case, we

must conclude that order, location, time of construction, etc., are all essential to every table. Thus arguments for origin essentialism that employ sufficiency principles which don't pick out exclusive properties necessarily over-generate undesirable essential properties.

The origin essentialist might try to avoid over-generation by assuming that one or some of the properties in the set are exclusive properties; if so we must replace *w2* with a world in which at least one of the properties of table T4 is different to those had by table T3. Let 'F' and 'G' be two exclusive properties, and 'H' remain as it was, as the determinable property *being made from a hunk.*

Since our sufficiency principle now only identifies T1 and T3, we need to postulate a fourth world, *w3*, which by stipulation has T2 in it, with the same qualitative profile as T4. Thus we get the following four worlds, as depicted in the matrix:

@	Table T1: F1, G1, H1
w1	Table T2: F1, G1, H2
w2	Table T3: F1, G1, H1
	Table T4: F2, G2, H2
w3	Table T2: F2, G2, H2

Now, the sufficiency argument for origin essentialism only works given the possibility of *w3*; with such a world, the sufficiency principle tells us that T2 is identical to T4, which then entails (via necessity of distinctness) that T1 and T2 are distinct. Without *w3*, the sufficiency principle only tells us that T1 and T3 are identical, which doesn't guarantee that T1 and T2 are necessarily distinct – we need to be able to identify T4 with T2 to get that.

Unfortunately, w3 isn't possible: it would be possible only if both *F* and *G* determinates were merely accidental to T2. However, they can't *both* be accidental since, as the results above showed, at least one of the exclusive properties in the set must be essential. Given that *H-* determinates are not exclusive, either *F* or *G* properties must then be. Therefore we can't get w3 – subsequently, we can't get the argument for origin essentialism to

work.[94] Consequently, if some of the non-material origin properties in the set are exclusive, there is no argument for origin essentialism.

How does this relate back to Robertson's objection? Applying Damnjanovic's conclusion back to the problem of modifying a sufficiency principle to avoid Robertson's second objection, we know that the problem facing (3"") is not unique: every sufficiency principle must either include or not include an exclusive property. If no exclusive properties are included, the argument for origin essentialism radically over-generates undesirable essential properties. So it looks like some exclusive property must be included. However, because material origins are not exclusive, it cannot be material origin. This implies that if some exclusive property is included within the sufficiency set, the argument for origin essentialism collapses.

Rejecting Salmon's argument

Thus it appears that there is no way to successfully respond to Robertson's second objection. Any variation of the sufficiency argument is going to fail, either because it over-generates essential properties or because it falls prey to a recycling case. The origin essentialist would do well to abandon Salmon-style sufficiency arguments, and try greener pastures; with that in mind, I turn to an argument from Forbes for origin essentialism.

Forbes's argument for the essentiality of biological origins

While Salmon's argument for origin essentialism focused upon material objects' construction out of their origin matter (with an unhealthy obsession with tables), Graeme Forbes has an argument, first raised in his [1985], focusing upon the essential origins of biological objects; in this section I examine Forbes' argument. It will be shown that it doesn't work, and even if it

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[94] One might think that we could construct a new argument, using a pair of new worlds where T2 differed first in respect to F and then in respect to G, but this argument would face the same difficulty: either one or the other (or both) of these new worlds would be impossible, and *both* would be needed to get the origin essentialist conclusion.

did, it only does so, much as with Salmon's argument, by either over-generating counter-intuitive essential properties or begging the question.

Forbes' four worlds argument

Forbes asserts that his 'primary argument for [origin essentialism] is that denying it produces ungrounded identities and non-identities' [2002: 320], where an ungrounded identity is when an identity holds, though there is nothing in which it consists.[95] In effect, origin essentialism falls out of an attempt to ensure that we do not deny a 'plausible sufficient criterion for trans-world identity', Forbes' *principle of intrinsic identity*:

> (II) For all x and all y, if x exists in world w and y exists in world w' and w≠w', x=y if x is indistinguishable in every intrinsic respect from y.[96]

Forbes is committed to (II) (and thereby to rejecting ungrounded identities), so what he does is create a scenario where we must either reject (II) or origin accidentalism (i.e. the position which holds that the biological origin of an object is not essential to it). Since we should not, according to Forbes, reject (II), we must then reject origin accidentialism – and thus origin essentialism falls out of (II).

The argument works like this. Assume (II) and origin accidentialism, and take the four possible worlds depicted in the matrix below:

W1	There is a yard which contains a tree, T1, which grows from an acorn a.
W2	There exists the same yard which contains a tree T2, intrinsically identical to T1 but that grows from acorn b.

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[95] Indeed, Forbes has an overall project to derive substantive essential properties from the idea that identity (and diversity) facts must be intrinsically grounded. See also Forbes [1980, 1981, 1985, 1992]; cf. Chisholm [1967] for support of ungrounded identities.

[96] This is my version of the principle that Forbes uses in his [1985: 149] and [2002: 320].

W3	There exists a tree T3 grown from acorn *a* and another tree, T4, grown from acorn *b*. Both T3 and T4 are intrinsically identical to trees T1 and T2, differing only in virtue of sharing the yard with another tree.
W4	There exists a tree T5, grown from acorn *a*, intrinsically identical to T3. The only difference between T5 and T3 is that T5 does not share its yard with another tree, as T3 does with T4 in world W3. Further, by stipulation, T5=T1.

Now either (a) the tree that comes from acorn *a* in W3, T3, is identical to the tree that emerges from *a* in world W1, i.e. T1, or (b) it isn't. According to Forbes, both options lead to trouble.

Suppose that tree T3 is identical to tree T1. By (II), tree T2 is identical to tree T1. Consequently, T2 is also identical to tree T3. However, in virtue of their being *two* trees, T3≠T4. Then, by the necessity of distinctness, T2≠T4. This is a problem: T4 only differs from T2 in an extrinsic manner – namely, T4 has the extrinsic property of *sharing the yard with another tree*, while T2 doesn't. Intrinsically, T2 and T4 are identical. So it seems the only way to allow for the denial of T4's being identical with T2 is to reject (II), but to reject (II) is to commit ourselves to either extrinsically determined identity or bare identities (i.e. haecceitism). This, according to Forbes, we must not do; hence we have an unacceptable consequence.

Meanwhile, suppose that T3 is *not* identical to T1. By stipulation, T5 is identical to T1. Then, by the necessity of distinctness, T3≠T5. However, by (II) T3=T5 – after all, the only difference between the two trees is an extrinsic difference, that T3 shares the yard with another tree (T4), while T5 does not. So to deny that T3 is identical to T1 requires violating (II) and thereby accepting that being intrinsically indistinguishable is not a sufficient condition for trans-world identity. As before, this is an unacceptable conclusion.

Something has to give. According to Forbes, the intuitive plausibility of (II) is such that it cannot be what we reject; consequently, it must be our other assumption, origin

accidentialism. Conveniently, by rejecting origin accidentialism (and thereby accepting origin essentialism), the possibility of W2 is blocked: T2 cannot be identical to T1, T3, or T5, though it can with T4. Similarly, T4 can only be identical with T2, and none of the others. As such, the dilemma doesn't arise: T2 isn't identical to T1, so it can be identical to T4, and T4 can be distinct from T3 – and all without violating (II)! So Forbes concludes that accepting (II) entails accepting origin essentialism.

Forbes' argument is a clever use of a dual-occupancy world (W3) and (II); unfortunately, I, like many others before me,[97] think that the argument doesn't entail origin essentialism. This is for three reasons: (i) it is unclear what sense of 'intrinsic' Forbes is employing within (II), which means that the argument might be relying upon some extrinsic identity grounds after all; (ii) Forbes' argument shows us that we cannot allow for complete intrinsic duplication, but origin essentialism is only one such way to block this possibility - other ways are available. Thus the argument must face the 'bias problem'; and (iii) the possibility of a recycling case (again) forces Forbes into accepting order essentialism (as he calls it, 'predecessor essentialism' [2002: 332]), which is sufficiently unattractive to make origin essentialism worth rejecting.[98]

Objection 1: the sense of 'intrinsic' in (II)

A large part of Forbes' argument turns upon the application of principle (II), and in particular upon grounding the tree's identities in sets of *intrinsic* properties which they possess. That these properties are intrinsic is important to Forbes; as he states,

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[97] See Robertson [1998, 2000], Mackie [1987, 1997, 2002, 2006] Hawthorne & Gendler [2000], and McKay [1986].

[98] A fourth objection, which I will not detail, is that Forbes simply assumes that we should reject ungrounded identities. His reason for doing so appears to be that accepting ungrounded identities would entail accepting 'bare identities', and accepting bare identities 'if it makes sense at all, is at any rate not the conception that we employ. Articulating our actual conception is another problem, but whatever the right story is in this area… one constraint is that it must imply the fundamental unintelligibility of hypotheses which make the broad kind to which a thing belongs an accidental feature of it' [Forbes 1997: 521]. Obviously, this reasoning is entirely unpersuasive to those who are haecceitistically inclined.

…grounds for identity and non-identity must be *intrinsic*, not *extrinsic*. This means, among other things, that whether or not x = the Φ should not turn on the presence or absence at the relevant time or world of some entity that is causally isolated from the Φ. [2002: 320]

Clearly, intrinsicality is central to Forbes' argument. So what sense of 'intrinsic' is Forbes using?

As Forbes and Mackie note, if we understand 'intrinsic' as 'non-relational' then (II) does not include properties like *being in the same yard as another tree*, but also does not include the property of *originating from acorn a*. Consequently, the argument would be undermined from the start If so, it cannot be a part of (II), which undermines Forbes' argument from the start [Mackie 2002: 344]. Further, Forbes admits that, 'no doubt there are cases of non-relational indistinguishability that nevertheless involve distinct objects. For instance, if a and b are, say, identical twins, the non-relational part of the life of either should be possible for the other' [2002: 320]. So 'non-relational' won't do.

One option Forbes mentions is Humberstone's [1996: 239-40] notion of an 'interior' property,[99] wherein some relational properties of an object can be counted as intrinsic properties; e.g. it is intrinsic for bicycle b to have wheel w as a part, and intrinsic for {Socrates} to have Socrates as a member. The problem with such a notion, as Humberstone points out, is that nothing in the account of interior properties prevents properties like *being six meters from a rhododendron* from turning out to be interior properties [1996: 246]. If so, interior properties are too broad to do the work that Forbes needs them too.

Regardless, Forbes doesn't insist on interior properties. Rather, he suggests a second, wider understanding, where we replace 'intrinsic' with 'identity-relevant' [2002: 321]. The only characterization of 'identity-relevant' that Forbes offers is negative: identity relevant

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[99] Humberstone himself credits Moore [1922] with inventing the idea, and Dunn [1990] with the reviving it.

properties are not properties that logically entail identity with any particular entity. Such an understanding requires a re-phrasing of (II), to

(II'): For all *x* and all *y*, if *x* exists in world *w* and *y* exists in world *w'* and *w≠w'*, *x=y* if *x* is indistinguishable in every identity-relevant respect from *y*.

Grant Forbes this shift from 'intrinsic' to 'identity-relevant', for his doing so opens Forbes up to a quite devastating objection: as Mackie points out, (II') does not by definition exclude the possibility that 'x's identity-relevant properties may include the presence or absence of some individual causally isolated from x' [2002: 345]. What this means is that (II') doesn't exclude the extrinsic properties that Forbes stipulated were not relevant to grounding identity. This result is bad, but it gets worse: the only way that Forbes can get the four worlds argument to entail origin essentialism, is to assume that extrinsic properties like *being in the same yard as another tree* aren't relevant to identity. If they are, then the problematic dilemma Forbes leaves the origin accidentialist in simply doesn't arise.

So (II') cannot eliminate extrinsic determinations of identity. Since blocking such extrinsic identity grounds is necessary for his argument to entail origin essentialism, Forbes is in big trouble.

Objection 2: The bias problem

Forbes' argument turns upon using principle (II) and a 'dual-occupancy world' (where two objects are intrinsically identical) to argue that origin properties must be essential. However, the tension the argument turns upon isn't between (II) and origin properties *per se*, but rather between the intrinsic duplication of an object within a world and the distinctness of the two objects in that world. In other words, it is the possibility of complete intrinsic duplication that is bringing about the problem. So some way must be found to block this intrinsic duplication. The only way to do so is by appeal to an *exclusive* intrinsic property. One such apparently

exclusive property is *having a particular origin*,[100] but *any* exclusive intrinsic property would be just as good at blocking the duplication as an origin property. In other words, nothing in Forbes' argument *requires* that an origin property be the exclusive property selected; we might instead use any other exclusive property you like (that, of course, also satisfies Forbes' notion of 'intrinsic').[101]

To demonstrate this, take the following argument. Assume, for the sake of *reductio*, branching accidentialism, i.e. the position that *having grown branch b at some particular time is non-essential for any given tree*.[102] Further, assume principle (II). Consider the following four worlds, depicted in the matrix below:

W1	There is a yard which only contains a tree, T1, which grows branch B.
W2	There exists the same yard which contains a tree T2, intrinsically identical to T1 but that grows branch C.
W3	There exists a tree T3 that grows branch B and another tree, T4, which grows branch C. Both T3 and T4 are intrinsically identical to trees T1 and T2, differing only in virtue of sharing the yard with another tree.
W4	There exists a tree T5, which grows branch B, intrinsically identical to T3. The only difference between T5 and T3 is that T5 does not share its yard with another tree, as T3 does with T4 in world W3.

Either tree T3 is identical to T1 or it isn't; either way leads to trouble. Suppose that T3 is identical to T1. According to the branching accidentialist, T2 is identical to T1, and subsequently identical to T3. Since T3 is not identical to T4 (because they are two distinct

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[100] Of course, as we already know, origin properties are not exclusive due to the possibility of recycling; let us set this worry aside for the moment.

[101] This point has been noted by several commentators, including Mackie [1987: 186, 1998: 64-5, 2006: 50], Yablo [1988], Robertson [1998: 741], and Damjanovic [2009]; Forbes himself also acknowledges it [2002: 324-5].

[102] This argument borrows heavily from Forbes [2002: 324-5] and Robertson [1998: 741]. Following them, I assume that *growing branch b* is an exclusive intrinsic (in the relevant sense) property.

trees in the same world), T2≠T4. But T2 is intrinsically identical to T4, so (II) dictates that T2=T4. This is a contradiction.

Further, suppose that T3 is not identical to T1. Since T5 is identical to T1, it follows by the necessity of distinctness that T3≠T5. But (II) tells us that T3 must be identical to T5, since the two trees are intrinsically identical. So denying the identity of T3 with T1 leads to both T3≠T5 and T3=T5 – another contradiction. Thus, on pain of denying (II), the branching accidentialist must embrace branching essentialism.

This argument requires the falsity of origin essentialism: if T2 is to be intrinsically identical to T1, then they must originate from the same acorn. Since T2 and T4 are intrinsically identical in the same manner, then T4 must also originate from the same acorn. Consequently, T3 cannot originate from that particular acorn. Yet T5 is intrinsically identical to T3, so it too must have originated from this other acorn. Since the argument requires the identification of T5 with T1, it must then be the case that T1 could have originated from an acorn distinct from the one that it actually did.

This shows that the argument only guarantees the essentiality of *some* exclusive essential property, though we know not which. Any essentialism which appeals to an exclusive property equally preserves (II) and therefore avoids the dilemma that Forbes raises. Consequently, Forbes faces the 'bias problem': some reason needs to be advanced for preferring origin essentialism over any of the alternative, mutually exclusive, essentialisms that would also dissolve the dilemma.

Forbes attempts to solve the bias problem by noting that exclusive properties regarding origins are markedly different from all other exclusive properties because, 'any kind of alternative to, or supplement of, [origin essentialism], will classify as essential some property an entity acquires subsequent to its coming into existence.' While this other property might be exclusive, it will be 'clearly accidental, if for no other reason than that very entity could have ceased to exist before acquiring the property' [2002: 334]. So take *growing branch B*, which is not related to origins, yet which is exclusive. If tree *T* grows branch B at

any point of its existence after its origin, perhaps even just a few seconds after springing into existence, there are a few moments where *T* exists without having the property. Consequently, the property isn't essential to *T* and therefore cannot be the exclusive essential property required.

Supporting this argument is the idea that the future is open, while the past is not [Forbes 2002: 334], i.e. that the past facts are fixed in such a way as to not allow for future variation, while future facts are indeterminate. So take *growing branch B* as the sufficient exclusive property for being identified with tree T and imagine tree T' when it is now a sapling. Given the openness of the future, it is presently indeterminate whether T' will grow branch B. However, since *growing branch B* is sufficient for being identified as tree T, it is presently indeterminate whether T' is identical to T. Since identity is, according to Forbes, determinate, we cannot use properties that objects acquire later than the moment they come into existence to ground their identities.

There are three replies to give to Forbes' attempt to answer the bias question. The first is that the reasons we can give for thinking that the future is open are *epistemological* and not metaphysical: in other words, we think the future is open because we don't know what the future holds. This epistemic ignorance does not entail that we must think that the future is somehow metaphysically indeterminate. And without any reason to think that the future is metaphysically indeterminate, there is no reason to accept the openness of the future that Forbes' reply relies upon.

The second reply builds upon this rejection of the openness of the future; should we think that the future is 'closed', the way is open for us to accept a view where properties are understood to be disguised relations that objects bear to times.[103] According to the version of this story offered by Mellor [1981: 111-4], the property *having branch B* is, when we unpack it, a relation that a tree stands in to a particular time, e.g. tree A bears the *having branch B at*

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[103] See Johnston [1987], Lowe [1988], Haslanger [1989], van Inwagen [1990], Hawley [2002] and Mellor [1981].

relation to some time *t*.[104] If we understand properties in this way, we can eliminate the apparent priority that origin properties have: when an object comes into existence, it stands in all of the relations that it ever will stand in. Given that properties just are these relations, this means that an object has every property it ever will have at the moment it comes into existence. Of course, these properties are all temporally indexed: by standing in the *having branch B at* relation to times t_1-t_n, tree A has the property of *having branch B* throughout times t_1-t_n.

Of course, this view has its detractors: in particular, Lewis [1986: 204] argues that such a view is 'incredible' because it mischaracterizes intrinsic properties as extrinsic relations.[105] I will not enter into this debate here. Instead, I merely note that such an understanding of properties is available, and given it, Forbes' point about the temporal priority of origin properties is devalued.

The third and final reply to Forbes is that even if we grant that origin properties have some temporal priority over some other properties (e.g. properties regarding certain have certain branches), this point does not solve the bias problem. One equally temporally prior property is *having a certain spatio-temporal point of origin*; we can construct a four worlds argument that employs this property, and which requires that we reject biological origin essentialism (which is what Forbes' argument is aimed to support). In fact, any property that an object has at the moment it comes into existence would work equally well here. So, appealing to temporal priority will not solve the bias problem, and if Forbes does not solve the bias problem, then there is no reason to think that the four worlds argument offers any support to origin essentialism.

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[104] The other conception takes the *instantiation* relation to be relativized to a time, so that object x has property Φ at time t in virtue of standing in the *instantiating Φ at* relation to time t.

[105] See Lewis [2002], Wasserman [2003], and Fiocco [2010] for similar points.

Objection 3: Recycling all over again

According to Forbes, it is essential to tree T1 that it originates from acorn a, and this falls out of protecting the idea that identity is not ungrounded. Presumably then, much like with the trees that originate from them, the identities of acorns are grounded in the intrinsic properties that they have – in other words, acorn a's identity is grounded in its intrinsic properties. In order to block the possibility of a four worlds style argument regarding the identities of acorns, the acorns must also have some essential properties. The property of *being originally being composed of matter m* fits, since it implies that origin essentialism applies to every kind of biological object (trees, acorns, people, etc). So let us assume that acorn a is essentially originally composed of matter m.

So suppose that acorn a is planted, and then grows into a tree. What prevents the possibility of the matter m from being recycled to form a second acorn, a', which is an intrinsic duplicate of acorn a? If this is possible, then there are two options: either the recycled acorn a' is identical to a, or it is distinct.

Suppose that a and a' are identical. Then it would be possible for acorn a to be planted, for tree T1 to grow from it, the matter m be recycled to form a', and then a' to be planted and grow into tree T2, which is intrinsically identical to T1 within the same world. By Forbes' argument, T1 must be identical to T2. Yet T1 and T2 are *two* trees, so they are distinct.

Further, suppose that acorns a and a' are distinct. If so, *being originally being composed of matter m* is not an exclusive property. How then is the distinctness of a and a' to be grounded? The only difference between the two is that a' is preceded by a. The two acorns appear to have no exclusive essential properties that ground their identities. Consequently, (II) does not apply to acorns.

It gets worse. If the identities of the acorns are not appropriately grounded, then the identities of the trees that originate from the acorns cannot be appropriately grounded in origin properties. The properties that Forbes requires for origin essentialism are properties like *originating from acorn a*, but if there is no way to ground the identity of acorn a, then

there is no way to determine whether a tree has this particular property. In light of the above four worlds argument, this means that there is no way to fix the identity of a particular tree. So the problem for Forbes is this: until he can specify a way to ground the identities of acorns (and other zygote-like objects), origin essentialism cannot be derived. [106]

Forbes suggests that we attribute to acorn a' the essential property of *being preceded by acorn a* [2002: 328].[107] Since we can iterate the problem (e.g. recycle the matter of a' to form a''), appealing to this property requires accepting what Forbes calls 'predecessor essentialism', but which I have already termed *order* essentialism; this is the position that 'an entity's predecessors in a recycling sequence are its predecessors in every world in which it exists' [2002: 328]. By making order essential, recycling cases are prevented: acorn a is distinct from a', and a' from a'' and so on in virtue of their having certain predecessor properties.

This has some interesting consequences. First, the property of *having as a predecessor acorn a* is clearly not an intrinsic property (this is true even on the Humberstone-style 'interior' understanding). Consequently, accepting order essentialism requires shifting (II) to (II'), and understanding the properties involved in grounding identity as 'identity-relevant' properties. For this reason, Forbes argues that order is 'identity-relevant' [2002: 332-4]. Grant him this; it only leads right back to the above objection that 'identity-relevant' properties include undesirable extrinsic properties.

Second, noted previously, order essentialism is extremely counter-intuitive. As Hawthorne & Gendler comment, 'the intuitive strength of the necessity of origins thesis surpasses that of essentiality of order, so if the project is to generate arguments in favour of the former, it seems best not to invoke the latter.' [2000: 293]. What this means is that

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[106] See Robertson [1998], McKay [1986], Forbes [2002: 324-6], and Mackie [2002: 345-7, 2006:57-9] for similar arguments.

[107] One option which he does not try, but which is mentioned in Mackie [2002: 351n8] and [2006: 58n16] is appealing to the time of origination. There are two likely reasons why he does not do this: (1) as mentioned earlier, temporal location hardly looks 'identity-relevant', so it would be hard to justify using it in defence of (II'); (2) doing so would imply that the time of coming into existence is essential to an object, which seems to violate the principle of the flexibility of origins (FO). Since Forbes accepts (FO), this would be an unacceptable conclusion.

appealing to order essentialism to save origin essentialism will only makes things a lot worse, rather than a lot better.

Forbes is, however, undaunted. He replies that Hawthorne & Gendler's criticism might stick

> if we were trying to explain why [order essentialism] is *intuitive* and thought that a successful non-debunking explanation would have to access explicit reasons for holding [order essentialism] and portray [the position] as inheriting its intuitiveness from those reasons. But in general, explaining why something plausible is *true* may require us to call upon non-obvious lemmas. [2002: 339n20]

Forbes is right: sometimes, to defend the truth of a view, we may need to wheel in quite unattractive but true supplements. But this point only holds when the 'un-obvious lemmas' are ones that we think are true; why should we think this about order essentialism? Further, appealing to such ugly positions as order essentialism increase the overall cost of accepting origin essentialism – and frankly, if the only way to get origin essentialism is to accept order essentialism, then we are better off giving up on it.

Rejecting Forbes's argument

In this section I've examined Forbes' four worlds argument for origin essentialism. This argument faces a trio of objections: the first, regarding principle (II), shows that Forbes' notion of 'intrinsic' is quite suspect, the second argues that Forbes cannot answer the bias problem, and the third demonstrated that Forbes' argument falls prey to another recycling case. The only ways to save origin essentialism were to question-beggingly assume that origin essentialism falls out of the four worlds argument or to accept order essentialism. The latter is an unacceptable commitment. Consequently, I think it safe to say that Forbes' argument does not secure origin essentialism.

Now the previous two arguments for origin essentialism rely upon the sufficiency of origin to entail origin essentialism. These arguments have been shown to be quite suspect and

to suffer from problems regarding the possibility of recycling cases. In the next section, I turn to an argument of Rohrbaugh and deRosset's which, instead of employing sufficiency principles, argues for origin essentialism via an *independence* principle.

A New Route to Origin Essentialism

In this section I focus on a relatively recent argument for origin essentialism advanced by Rohrbaugh and deRosset's (hereafter R&D) [2004]. The basic aim is to motivate origin essentialism not by appeal to a sufficiency principle but rather by 'independence principles', according to which origin theses are derived from the mutual independence of the *processes* used to compose or construct material objects. This independence is a consequence of processes' invulnerability to 'non-local prevention' [R&D 2004: 706].

Groundwork for the argument

Take a table T1 actually made entirely and originally from hunk of matter H1. What might have prevented the production of T1 from H1? It seems like there are lots of things that might have done so: we might have made H1 into something else (e.g. a chair), or used H1 to power a steam locomotive, or the carpenter might have decided to play backgammon instead. According to R&D, the common element to all of the preventing factors are 'local': everything that effects the constructing of T1 affects the existence of H1 or some element of the process by which T1 is actually made from H1. As such, R&D suggest that what lies at the heart of the process of table-creation is the *principle of 'locality of prevention'*:

> (LOP) Any case in which some factor F prevents the production of T1 from H1 must differ from actual circumstances with respect to the properties of either H1 or some elements of the process by which T1 actually emerged. [2004: 707]

The causal-historical path that results in the production of table T1 runs through a specific collection of matter (H1) and specific processes of assembly. This matter and these processes are distinct from similar collections/processes which result in other, distinct, tables. Given that the actual production of table T1 from its source matter is a matter of what happens along its causal-historical path, 'any factor which prevents that production must make a difference along this path.' [2004: 707-8].

The consequence of (LOP) is that what goes on 'elsewhere' does not affect the construction processes: as long as nothing locally infringes on the process which actually turns H1 into T1, the process can succeed. So, if we make a second, distinct table T2 from a second, entirely distinct hunk of matter H2, what we do with H1 and T1 does not matter: whether we make H1 into T1 or not is irrelevant to the H2-T2 process (unless the two processes locally interfere with each other).

There are two points worth noting about (LOP). First, (LOP) makes a weak assertion about H1-T1 production that, in the absence of any factor which adversely affects H1 or some element of the production of T1, the production *may* result in T1. Contrast this with the stronger claim that in the absence of such a factor the production *must* result in T1. R&D do not assert the strong claim because it is a sufficiency principle, which they intend to avoid. Thus 'all that is promised by the locality of prevention is that T1 might still be the product in such a case. But, for all the principle tells us, it also might not' [2004:708].

Second, R&D admit that (LOP) is not universally true: there are cases where non-local prevention is possible. Call a table T is a **prototypical table** iff it is the first table ever made in the universe. If T1 is a prototypical table, we can non-locally prevent T1's creation by creating T2, another table, at some point prior to T1's construction. Since T2 exists prior to T1, T1 cannot then be a prototypical table; the mere construction of T2 prevents the construction of T1. This prevention is non-local: nothing in the construction of T2 affected the hunk of matter used to construct T1, nor the individuals or tools used therein. Similarly, a table T be a **super-prototypical** table iff it is the only table to ever exist at a possible world. Any process

which results in super-prototypical table T1 in world *w* might not do so in world *w'* because there might be another table constructed in world *w'*. Thus some productions are vulnerable to 'competitive interference.' [R&D 2004: 711] This limited scope of application might raise some warning flags about the viability of arguing for origin essentialism via (LOP), but I lay those aside for the moment.

Linking (LOP) with the same kind of compossibility reasoning encountered earlier in this chapter implies that if one table production need not have locally affected another, then it is possible for both productions to succeed concurrently. This leads to R&D's *independence principle*:

> (IND) Given any two distinct hunks, a table constructed from the first hunk can, in principle, also be constructed in the presence of the production of any of the tables which can be constructed from the second hunk. [R&D 2004: 712]

This principle expresses the compossiblity of table-production from distinct hunks. Refining (IND), R&D derive

> (T-IND) Necessarily, given a table T1, made from hunk H1, for any table T2 which might be made from hunk H2, distinct from H1, it is also possible that both T1 is a table made from H1 and T2 is a table made from H2. [2004: 714]

This is just a more fine-tuned expression of (IND), which was in turn derived from (LOP).

However, as we have seen in the discussion of sufficiency arguments, instances where objects are originally composed of partially overlapping materials frequently lead to problems for origin essentialism (especially when conjoined with the acceptance of the flexibility of origins). To avoid these difficulties, R&D restrict (T-IND) further, to

(RT-IND) Necessarily, given any two non-overlapping hunks, H1 and H2, and a table T1, made from H1, for any table T2, that might be made from H2, it is also possible that both T1 is a table made from H1 and T2 is a table made from H2. [2004: 720]

The independence argument

To go with (RT-IND), R&D assume the necessity of distinctness, and the principle of origin uniqueness – i.e. that a single table cannot entirely and exclusively originate from more than one hunk of matter at a single possible world.

(ND) If x≠y, then necessarily x≠y.

(OU) Necessarily, if T1 is a table made from H1 and T2 is a table made from H2 and H1≠H2, then T1≠T2.

With these principles in hand, R&D then present the following argument:

(1) Take the table actually made from a hunk of matter H1, T1, and some arbitrary table which is possibly made from hunk H2 (distinct from H1), T2.

(2) Given that T1 actually comes from H1 and possibly T2 comes from H2, (RT-IND) guarantees that there is some possible world *w* where both are jointly produced.

(3) By (ND), H1 and H2 are distinct in *w*.

(4) By (OU), the distinctness of H1 and H2 in *w* entails that T1 is distinct from T2 in *w*.

(5) By (ND), T1 and T2 are actually distinct.

(6) Since T2 is an arbitrary table, any table possibly made from H2 is actually distinct from T1.

(7) Because *w* was arbitrarily chosen, (6) is true for all possible worlds as well.

Thus R&D conclude that the following is true

(T-EO) Necessarily, given a table T1, made from hunk H1, any table T2, which might be made from a hunk H2, distinct from H1, is distinct from T1. [R&D 2004: 715]

On a modalist understanding of essential properties, (T-EO) amounts to the origin essentialist thesis for tables.

What is most interesting about this argument is that it is, according to R&D, compatible with the falsity of the sufficiency of origin: the truth of independence principles are 'entirely compatible with our being able to make a number of alternative tables from a single hunk of matter, and this is the denial of the sufficiency principle' [R&D 2004: 719]. This is because (T-EO) only implies the necessity of origin, but not the sufficiency. Further, according to R&D, sufficiency principles are not involved in the justification of independence principles. Consequently, recycling cases should not be applicable to the independence argument. Clearly, if the independence argument worked, there would be justification in accepting origin essentialism. Of course, this result would be tempered by the fact that this origin essentialism only applies to certain kinds of objects as a result of (LOP) applying to a rather restricted domain. So, even if R&D's argument works, it only results in a partial victory for origin essentialism.

Objections to the Independence Argument

Unfortunately for the origin essentialist, R&D's argument is not fine. In the following sections, I look at two objections to the argument; the first is from Cameron & Roca, the second from Robertson & Forbes. Both target the move from (LOP) to (RT-IND), and aim to show that there is no good way to derive (RT-IND) from (LOP).

Cameron & Roca's objection

Cameron & Roca (hereafter C&R) argue that while (LOP) supports a compossibility principle, it does not support (RT-IND) without either the addition of a sufficiency principle or some question begging assumption.[108]

To begin their argument, C&R distinguish *prevention* and *exclusion*. The production of table T' from hunk of matter H' *prevents* the creation of table T'' from H' iff the production of T' from H' renders a similar sort of production of T'' not possible. Meanwhile, the production of table T' from hunk of matter H' *excludes* the creation of table T'' from H' iff the actuality of producing T' from H' precludes the actuality of producing T'' from H'. So my making table Al from hunk of matter Hunk excludes making Bill from Hunk – because I've used Hunk up making Al – though it does not prevent the production of Bill because I could have simply made Bill instead of Al. Importantly, given R&D's rejection of the *sufficiency* of origin, it is possible that there are cases in which two ordered pairs of processes and product exclude one another without prevention.

Now, according to (RT-IND), for any pair of processes and product <H, T>, given a distinct process H*, <H*,T*> is compossible with <H,T>.[109] This implies the prevention of the process-product pair <H*, T>. However, (LOP) *alone* does not block the possibility of <H*,T>, for, as R&D themselves admit, (LOP) is compatible with the contingency of origin. Consequently, any independence principle grounded on (LOP) alone cannot block the possibility of the process-product pair <H*,T>. Yet this is exactly what (RT-IND) requires.

Thus the problem: (RT-IND) is stronger than what can be supported by (LOP) itself. According to C&R, 'the extra strength that [(RT-IND)] has … can come only from assuming the necessity of origin' [2006: 365]. (LOP) cannot by itself motivate a principle like (RT-IND) that avoids commitment to origin sufficiency yet which also entails origin essentialism. If I make hunk of matter H2 into table T1, (LOP) ensures that I can still make H1 into a table.

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[108] C&R actually attack the derivation of (T-IND) from (LOP), but to make matters easier and because it does not change the objection in the slightest, I here present the objection in terms of (RT-IND).
[109] Where 'T*' is a possible product of H*.

Exclusion ensures that such a table will not be T1, but this is just a case of exclusion without prevention. (RT-IND) requires and implies prevention. This extra strength can only come from smuggling origin necessity in.

R&D have two avenues of response. They could accept origin sufficiency, which blocks the possibility of exclusion without prevention; the problem is that this makes their argument dependent upon sufficiency principles, and thereby vulnerable to recycling cases. Instead, they might assume that a *particular* table's production from some *particular* hunk prevents it from being a product of every other production. This provides the requisite strength to go from (LOP) to (RT-IND), but only because it amounts to assuming origin essentialism. From this result, we can conclude that R&D's argument fails to entail origin essentialism without either secretly relying upon a sufficiency principle or simply begging the question.

Robertson & Forbes' objection

Along the same lines, Robertson & Forbes (hereafter R&F) object to R&D's argument, arguing that the independence argument either relies upon a sufficiency principle or fails to motivate origin essentialism.

R&F identify two versions of (LOP): an unrestricted version includes haecceitistic facts as potentially affecting factors for table production, while a restricted version does not. This gives us the following two principles:

(U-LOP) If a table T1 is made from H1, then any possible condition or factor F not affecting the locale of the H1-T1 production, including identity or haecceitistic facts, is such that there is a possible world in which F obtains, and T1 is produced from H1 in the locale and way it actually was.

(R-LOP) If a table T1 is made from H1, then any possible condition or factor F not affecting the locale of the H1-T1 production, excluding any identity or haecceitistic facts, is such that there is a possible world in which F obtains, and T1 is produced from H1 in the locale and way it actually was.[110]

It is R&F's argument that (U-LOP) is either false or supports (RT-IND) only by sneaking in a sufficiency principle while (R-LOP) fails to support (RT-IND) unless one is willing to bolster it with a different sufficiency principle. Consequently, the independence argument either fails or begs the question.

Against (U- LOP)

Suppose we, following R&D, deny origin sufficiency. We can then assume that there is some possible world *w* where table T1 is the table made from H1 and that there is another world *w'* where table T2 is the table made from hunk H1 instead of T1. By stipulation, the causal-historical path leading from H1 to the production of T2 is identical to the actual causal-historical path leading to T1 and T2≠T1.

In world *w'*, T2's being the table made from H1 prevents T1's being made from H1. If so, (U-LOP) is false: there is some factor *F*, namely T2's being the table made from H1 in *w'*, which does not make a difference to the 'locale' of H1-T1 production but which prevents making T1 from H1. H1-T2 production utilizes the identical causal-historical path and therefore has the exact same 'locale' as the H1-T1 production, so there is no local difference. Therefore haecceitistic switch cases falsify (U-LOP).

There are two ways to avoid this problem. First, R&D might accept that (U-LOP) implies the existence of some possible world *w''* where T2 is produced from H1 in the exact way and locale that T1 actually was *and* T1 is produced from H1 in the exact way and locale

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[110] While R&F [2006: 369-70] do not express these principles in the manner that I have done, doing so makes it easier to keep track of their subsequent applications.

that T1 actually was – in other words, a world where both productions simultaneously co-occur. This protects (U-LOP), but at the cost of leading to contradiction: according to R&F, distinct tables that originate simultaneously must come from *distinct* hunks of wood [2006: 371]. Since T1 and T2 come from the same hunk of wood, they cannot be distinct. But, by stipulation, they must be. So this response won't work..

Another avenue would be to assert that there are no possible worlds like *w'* where any table distinct from T1 is made from H1 in the exact manner and locale that T1 actually is, which amounts to accepting that originating from H1 in a manner identical to T1 actually does is sufficient for being T1. This also protects (U-LOP), but at the cost of making the argument dependent upon a sufficiency principle.

(U-LOP) is, on first glance, straightforwardly false because haecceitistic switches do not, by definition, make a difference in the causal-historical paths of production. R&D cannot maintain the truth of the principle without either leading themselves into contradiction or accepting the sufficiency of origin. Thus (U-LOP) is true only if R&D assume a sufficiency principle.

Against (R-LOP)

To argue for (RT-IND), R&D cite (LOP) and assert that the production of some table T2 from some distinct hunk of matter H2 does not make a difference to the causal-historical path leading to T1 from H1. However, as R&F point out, the claim about H2-T2 production mentions a haecceitistic fact about tables (specifically, about table T2's identity). Since (R-LOP) does not react with factors that involve identity facts, the H2-T2 production claim cannot be used in conjunction with (R-LOP) – in effect, the two are inert. Consequently, there is no 'route' from (R-LOP) to (RT-IND).

A potential way around this problem is to make the claim interacting with (R-LOP) about the *process* involved in production: talk about specific processes avoids identity or haecceity facts about tables, so could interact with (R-LOP). Call the H2-T2 production

process 'P2'; so understood, we can re-cast the interaction with (R-LOP) in terms of whether P2 makes a difference to the causal-historical path leading to T1. This leads to the following *process combinability principle*:

(PC): If T1 is a table made from H1, and H2 is a hunk of matter that is distinct from H1, does not overlap with H1, and is not involved in the causal-historical path leading to T1, then for any process P2 by which a table might be made from H2, it is also possible that both T1 is a table made from H1 and P2 occurs. [R&F 2006: 372]

The problem is that (PC) isn't (RT-IND) – it is just another compossibility principle. To go from (PC) to (RT-IND) would require linking (PC) with the assumption that sameness of process is sufficient for sameness of product. This, of course, is just another sufficiency principle.

In the end, (R-LOP) cannot guarantee (RT-IND) by itself because (R-LOP) is inert to the claim that it is meant to react with regarding the H2-T2 production. Shifting the focus of the interacting claim away into one that specifies processes allows for a reaction with (R-LOP), and generates (PC). Sadly, (PC) only supports (RT-IND) with the addition of a sufficiency premise. Overall, this means that, no matter whether R&D intended (LOP) to be understood in the restricted way or the unrestricted way, they cannot get to (RT-IND). Consequently, they cannot run the argument for origin essentialism. For this reason, R&F conclude that the independence argument does not work, and origin essentialism still has not been proven.

Responding to the objections

To respond to both objections, what R&D must do is find a principle akin to (LOP) which (a) allows for the necessary prevention of the production of T1 from H1 by an otherwise indiscernible production of a distinct table from the same hunk (i.e. which allows for the

haecceitistic switch case) and (b) also rules out the prevention of T1 from H1 by the production of T1 from a distinct hunk H2 (i.e. which ensures that origins are *necessary*). In their [2006], R&D attempt to formulate and defend such a principle by modifying (LOP). The desired result is the derivation of (RT-IND) from their new version of (LOP), (LOP*).

Suppose that we have an H1-T2 production. Following such a production, it is not possible to produce the original table T1 from H1; so in such a case, while there is no local change, the H1-T2 production is not compossible with the H1-T1 production. This undermines (LOP)'s support of (RT-IND), because (LOP) alone doesn't entail this.

To reconcile this haecceitistic switch case with their story, R&D suggest that such cases be understood as the limit of 'a spectrum of cases involving table-production processes which are less and less similar to the actual case in which T1 comes from H1' [2006: 379-80]; in particular, the haecceitistic switch case can be understood as the limit of *material overlap* between processes. Making some table T2 from H1, even in the exact way that T1 is actually made from H1, *uses up* all of H1, and this using up prevents the production of T1. A similar case would be when we use H1 to build table T3 one hour before we were planning to build T1: in this temporally prior case, H1 is used up before it can be employed to build T1. Thus,

> It is quite clear that crafting some other table from H1 under circumstances otherwise indiscernible from T1's production from H1 prevents that production *in precisely the same way* that crafting some other table from H1 under slightly different circumstances does. …The common mechanism of prevention in each [of] these situations is clear: H1 was used up in the other table production, so it does not remain available for the production of T1. [2006: 381-2, their emphasis].

So why can't we make T1 from H1 in the switch case world? Because H1 is all 'used up'. And this 'using up' is the exact same as cases where too much of the matter that makes up H1 is used for some other construction project, no matter what similarity it has to H1-T1 production.

With this account of the haecceitistic switch case, R&D introduce a modified version of (LOP),

> (LOP*): For any possible factor F, necessarily, if F prevents T1's production from H1, then F either makes a difference in the locale of the original production of T1 from H1 or F is the production of a table from some hunk overlapping H1. [2006: 380]

This principle perfectly captures (according to R&D) the idea that the only affecting factor must be something that operates '*around here*'. Further, by distributing the necessary operator over the conditional and replacing the non-necessary antecedent with a necessary one (i.e. 'if F prevents T1's production of H1' gets replaced with 'if F necessarily prevents T1's production of H1'), we get a necessary condition on necessarily preventing factors:

> (NLONP) For any possible factor F, if F necessarily prevents T1's production from H1, then F necessarily either makes a difference in the locale of the original production of T1 from H1 or F is the production of a table from some hunk overlapping H1. [2006: 377]

Finally, coupling (NLONP) with the assumption that any factor *F* which does not necessarily prevent a table's production is compossible with said production, R&D get

> (COMP): For any possible factor F, if it is not necessary either that F make a difference in the locale of the original H1-to-T1 production or that F is the production of a table from some hunk overlapping H1, then F is compossible with the production of T1 from H1.[111]

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[111] My (COMP) is R&D's (COMP*) [2006: 381].

According to R&D, 'no sufficiency principle is used or implied here, as the switch case involves an overlapping table production, falsifying the antecedent of (COMP).' [2006: 381]. From (COMP), R&D can derive (RT-IND): Assume that T1 is made from H1. Further, let T2 be any table possibly made from some hunk of matter H2 which is entirely disjoint from H1. Understanding T2's being made from H2 as the factor *F*, so long as it is not necessary that if T2 is made from H2 there is some effect in the locale of the production of T1 from H1, it follows that *F* is compossible with the H1-T1 production. This is (RT-IND). Thus R&D conclude that

> (LOP*) is the better expression of our original idea, for (LOP*) is as well motivated as (LOP), delivers the crucial distinction between prevention by the production of a different table from the same hunk and prevention by production of the same table from a different hunk, avoids any commitment to sufficiency principles, and grounds a valid argument for the origin thesis. [2006: 381]

Three objections to the new independence argument

Yet even this new version of the argument faces some objections; in this section I examine three. The first objection turns upon R&D's account of the switch case via the notion of 'using up', aiming at blocking the derivation of (LOP*); the second is that R&D must also reply to the bias problem, which they are incapable of doing; and the third is that (LOP*) either begs the question or is in fact a sufficiency principle.

The mechanism of prevention and 'using up'

Take the haecceitistic switch case, where H1 is used to make T2 in some world in exactly the same manner as it was used to make T1. According to R&D, what prevents the production of T1 from H1 in the H1-T2 production world is that H1 is 'used up' to make T2. Now, take the contingent origin case, where T1 is made from H1 in one world and from H2 in a different world. What is it that prevents the production of T1 from H1 in the world where we make T1

from H2? Here it seems to be the 'using up' of T1 itself: since it has been made from H2, T1 cannot re-originate from H1 as well. So the 'mechanism of prevention' in the haecceitistic switch case and in the contingent origin case is the same: some element of H1-T1 production is 'used up' in such a way so as to prevent any other productions involving either. If this is the case, (LOP*) includes an assumption that blocks origin accidentialism (i.e. that no production can 'haecceitistically overlap' with any T1 production) and so begs the question. If so, the new independence argument for origin essentialism must be rejected.

R&D respond that the mechanisms of prevention in the two cases are different; in the switch case, 'T1 cannot be made from H1 because that hunk has been used up. Using up hunks that provide raw material for table productions is one mechanism by which one may prevent further table productions from those hunks' [2006: 382]. Meanwhile, in the contingent origins case, while T1 has been 'used up' in some sense (by being brought into existence),

> …literally speaking, only hunks of wood get used up by providing raw material for table manufacture. To speak of particular tables being 'used up' by having been produced is to introduce some new and peculiar sense of the phrase, a logical 'using up'… [2006: 382]

So, the sense of 'used up' in the switch case is not the same as in the contingent origins case. This means that no common mechanism is employed in both cases, and thus (LOP*) does not beg the question.

Unfortunately, R&D's response does not work. While it is true the subject of the 'using up' changes in the two cases, what using up itself is does not. In one case, a particular *hunk of matter* is employed in such a way as to no longer be potentially constructed into something else and in the second, a particular *object* no longer has the potential to have a different origin (because it already has one). Importantly, in both cases, what is potential for the entities becomes partially fixed: the hunk of matters' is changed such that it is now, given that a certain production occurs, impossible for the hunk to be employed in some other

construction. Similarly, the potential of the object is affected by its originating from a particular hunk of matter: given that a certain production occurs, it is impossible for the object to have a different origin.

If T1 comes from H1, then it is not possible for T1 to lose the property of *originating from H1*. Of course, it is also not possible, given the way that the world has turned out, that H1 gain the property of *being used to produce T2*. This conclusion is warranted because we are discussing the potentialities of the entities, the way that they could *become* given certain facts. So understood, the 'using up' of both the hunk of matter and of a particular object are in fact the same: given certain facts about what happens to the entities, certain possibilities are closed off for them. Most importantly, the independence argument *relies* upon appealing to differences in potentiality; if the argument were phrased in terms of how different a thing *could have been*, then it straightforwardly begs the question.[112]

So the pay-off for thinking about the mechanism of prevention in terms of potentiality is that R&D's reply must be rejected, leading to the problem of (LOP*) smuggling in a question-begging assumption.

The bias problem: spatio-temporal essentialism & (RT-IND)

It is possible to use a variant of the independence argument to derive *spatio-temporal* essentialism (i.e. where an object's spatio-temporal region of origin is essential to it) instead of origin essentialism. However, the two are mutually exclusive: as R&D point out, to derive (RT-IND) from (LOP*), we have to assume that no table can be built from H2 such that it necessarily involves a mechanism which operates in the locale of production of T1 [2006: 378 n4]. This requires that we reject spatio-temporal essentialism since, were it true, any table built from H2 which could possibly be built at the same spatio-temporal location where T1 is

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[112] Suppose that the reasoning supporting (LOP*) is meant to involve how things might have been, and not how they might become. The distinction between prevention and exclusion then collapses. So when if R&D say something like, 'Following an H1-T2 production it is *not possible* to produce the original table T1 from H1', instead of making a claim about what is prevented within a world, they are making a claim about H1-T1 production being metaphysically impossible.

built from H1 is not compossible with T1, since two tables can't be built at the same place at the same time from distinct hunks.

Now consider a new independence principle,

(RT-IND/STR) Necessarily, given a table T1 made at spatio-temporal region R1, for any table T2 which might be made at spatio-temporal region R2 that doesn't overlap R1, it is possible that both T1 is a table made at R1 and T2 is a table made at R2.

Using the same reasoning as R&D, I can use (LOP*) to derive (RT-IND/STR), and just as R&D used (RT-IND) to derive origin essentialism, I can use (RT-IND/STR) to derive spatio-temporal essentialism.

This is a problem: (LOP*) supports the claim that spatio-temporal region of construction is essential to tables. We can't have both, since the argument for origin essentialism is blocked by spatio-temporal essentialism (and vice versa). This is, of course, the bias problem again. Until R&D give a principled reason for preferring origin essentialism over spatio-temporal essentialism, the independence argument is undercut.

(LOP) begs the question*

The final objection is similar to the first, but does not depend upon arguing for a single sense of 'using up'. Given (LOP*), it is not possible for a factor *F* to prevent the construction of T1 from H1 unless it makes a difference in the locale of production or uses a hunk of matter overlapping H1. Now take a world *w* where T1 originates in H2, a hunk that does not overlap H1. What prevents the construction of T1 from H1 in this world is the fact that T1's identity has been 'used up'. This entails that T1's identity is a part of the 'local factors' that make up H1-T1 production. Yet if T1's identity is part of the production, then it seems as if we have a sufficiency principle: a certain production (H1-T1) is *sufficient* for constructing T1. This implies that within (LOP*) is lurking a sufficiency principle.

R&D respond to this objection in the following way:

> The main form of [this objection] is that the locality of prevention, as newly articulated in (LOP*), is too close to the necessity of origin to provide independent support for the origin thesis. Robertson and Forbes already charge that (RT-IND) begs the question … So too, they might charge that (RT-IND) rests solely on (LOP*) in a similarly objectionable fashion. In a way, we would find this charge surprising. Given (i) that sufficiency principles are a legitimate, non-question begging starting point in this discussion and (ii) that (LOP*) is weaker than (LOP), which is, in essence, such a principle, it is hard to see why (LOP*) would be thought question-begging. The problem with arguing from sufficiency principles, after all, was their likely falsehood, not circularity. Even so, it is surely true that one who wishes to maintain the contingency of origin will now see that she should deny (LOP*), but this is not to say much more than that she accepts the argument is valid and recognizes that (LOP*) is where the action is. [2006: 383]

So R&D's response is that (LOP*) is, in effect, a sufficiency principle, but that this is ok because sufficiency principles are acceptable starting points for origin essentialist arguments.

I'm happy to grant R&D this point; after all, it isn't (LOP*) that begs the question, but rather (NLONP): in order to go from (LOP*) to (COMP), R&D need to be able to derive (NLONP). However, to get (NLONP) from (LOP*) requires (a) the distribution of a necessity operator over a material conditional and (b) the substitution of the merely contingent prevention of a certain production within the antecedent with the necessary prevention, i.e. replacing 'if F prevents T1's production of H1' with 'if F *necessarily* prevents T1's production of H1'. What reason do we have for thinking that this necessary prevention antecedent is ever satisfied? The only justification would be if we thought that prevention implied exclusion – and to think that is in fact to beg the question against the origin accidentialist. This seems a common theme of arguments for origin essentialism: they are convincing only if you are already convinced. As with every other instance of preaching to the choir, this is not going to garner many converts.

So the origin accidentialist can accept (LOP*). What they will reject is (NLONP) – rather, they won't reject it so much as think that its antecedent is never satisfied. If this is the standoff, then I think the origin accidentialist should be quite happy (especially in light of the fact of the other two objections).

Conclusion

This chapter has focused upon four arguments for origin essentialism. I started with Kripke's 'proof', which was found to not entail origin essentialism. This led to Salmon's sufficiency argument which, no matter how we changed the sufficiency principle, either entailed too many un-attractive 'deviant essentialisms' or was susceptible to recycling cases. I then turned to Forbes' four worlds argument for origin essentialism. This also failed, falling prey to a trio of objections concerning vagueness in the definition of 'intrinsic', the bias problem, and another recycling case. Finally, I examined Rohrbaugh & deRosset's independence principle argument. This argument, as with the others, suffers from a series of objections – in the end, the only way to get origin essentialism out was to assume a principle that had origin essentialism built into it.

Because these arguments are all unconvincing for the variety of reasons that I have here discussed, I must conclude that there is no good argument for taking origins to be essential. Consequently, properties and relations concerning origins are not part of the successful answer to the Extension Question.

Now we have examined and rejected both sortal essentialism and origin essentialism. Neither has brought us any closer to actually answering the Extension Question – at best, what we've got so far is evidence that certain properties *aren't* essential. In the following chapter, I look at a position which takes these negative lessons to heart, holding that, if there are any essential properties, they are few and far between; up next is Mackie's *minimalist* essentialism.

Mackie's Minimalist Essentialism - Chapter 8

> *I want to get lean and mean, keep it minimalist.*
>
> *– John Cale*

In her [2006], Penelope Mackie presents 'minimalist essentialism'. Minimalist essentialism is, like sortal and origin essentialism, an attempt to specify what essential properties objects have – in other words, it is an answer to the Extension Question. Unlike sortal and origin essentialism, however, minimalist essentialism is primarily negative in character: instead of suggesting that a certain class of properties are essential (e.g. that sortal properties are essential), minimalist essentialism aims to accept as few essential properties as possible.

I begin this chapter by presenting Mackie's argument for minimalist essentialism. This leads to my own, lengthier exposition. I conclude that the argument for minimalist essentialism is dubious and, even if it succeeds, the position is so ambiguous that it does not constitute any sort of answer to the Extension Question. Consequently, even if we agree to be minimalist essentialists, we are no closer to specifying what essential properties there are. As such, it should not be included in our extension answer.

Mackie's argument for minimalist essentialism

Mackie's argument for minimalist essentialism goes as follows: first, define *extreme haecceitism* as the position that rejects *any* logical connections between the qualitative nature of an object and the object's identity.[113] As such, extreme haecceitism is committed to denying that there are any necessary or sufficient qualitative identity conditions. This in turn implies that extreme haecceitism is committed to the rejection of *all* essential properties; so accepting

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[113] Mackie takes this definition of extreme haecceitism from Adams and Lewis; a distinct position which has the same name is found in Salmon's [1996]. See Catterson [2008] for a criticism of Salmon's form of extreme haecceitism.

extreme haecceitism amounts to saying that the extension of essential properties is empty. To get to her minimalist essentialism, Mackie argues for extreme haecceitism, but then reins things back in ever so slightly.

Take the wide-spread intuition that Aristotle 'could not have been a giraffe, a centipede, a parsnip, a paper clip, or the number 17' [Mackie 2006: 150]. What explains this intuition? One explanation is an essential property story: Aristotle essentially is a human being, which means that it is impossible for him to not be a human being (and therefore impossible for him to be a giraffe, centipede, etc). Another explanation is the extreme haecceitist's *tenacious* property story, according to which *being a human being* is a property that Aristotle has in all of the possible worlds that aren't too 'distant' to be relevant to our counterfactual speculation about Aristotle. What then explains the intuition isn't Aristotle's essentially being a human being, but rather our (rightly) ignoring as too distant those worlds where Aristotle is a giraffe, centipede, etc.

So the extreme haecceitist can account for essentialist intuitions. Further, Lewis argues that extreme haecceitism doesn't fail to justify why certain apparent possibilities are not genuinely possible, while essentialist accounts do [1986: 239-48]. When we link this 'obvious advantage' up with the ability to account for the intuition, it seems that extreme haecceitism is more favourable than an essentialist position.

However, extreme haecceitism *isn't* compatible with the possibility of there being essential kinds or categories, however broad they might be. This, according to Mackie, renders extreme haecceitism 'indefensible'. To avoid this incompatibility, extreme haecceitism must be modified; the resulting position is minimalist essentialism, which walks a fine line between extreme haecceitism and a more substantial essentialism. If there are essential kinds, however broad, the minimalist essentialist can accept them; if there aren't, the minimalist essentialist can employ the tenacious property story. Thus, the minimalist essentialist

may present the following challenge. Either our intuition that Aristotle could not have been a centipede or a poached egg... is to be explained by reference to a theory of essential kinds or categories, or it is not. If it is, what are the relevant essential kinds or categories that rule out Aristotle's being a poached egg or a centipede? If it is not, what is the alternative explanation? And why is it to be preferred to the explanation of the intuition that is provided by the extreme haecceitist? [2006: 166]

For these reasons, minimalist essentialism is the best position available: it is better than its more substantial essentialist cousins in virtue of being so similar to extreme haecceitism, and it is better than extreme haecceitism because it is compatible with the possibility of some broad essential kinds.

My version of Mackie's argument

It should be clear from this brief presentation that the argument for minimalist essentialism has two distinct parts: the first is the argument for the superiority of extreme haecceitism over substantial essentialism, the second the argument for the shift from extreme haecceitism to minimalist essentialism. In the following sections, I examine, at some level of detail, both parts in turn. This is partially because I think it is a complicated argument, and partially because I re-package it in a new way to make certain issues snap into focus better.

Yet before I turn to Part 1 of the argument, it is worth noting that there are two points within the overall argument that can be interpreted in either a strong or a weak way. The first involves the conclusion of Lewis' argument: the strong interpretation is that substantial essentialism *cannot* justify the limitations on possibility it is committed to, while on the weak reading it is merely committed to offering *some* justification. Meanwhile, the second concerns the point Mackie uses to justify rejecting extreme haecceitism: on the strong reading, the assumption is that possibly, there are essential kinds, while on the weak reading it is that we should not take sides regarding the possibility or impossibility of there being essential kinds. The interpretations are independent of each other: we can interpret both in the strong, both in the weak, or one in the strong and one in the weak way – every combination results in an

argument for minimalist essentialism. Yet while the results don't change, the objections applicable do: certain objections only apply to certain readings. I will return to these issues later; for now, I turn to Part 1 of the overall argument for minimalist essentialism.

Part 1: for extreme haecceitism over substantial essentialism

The conclusion of this part of the argument is that extreme haecceitism is preferable to substantial essentialism (where *extreme haecceitism* is defined as above and *substantial essentialism* as the cluster of positions that postulates essential and accidental properties for objects).[114] Mackie argues for this conclusion by citing an argument of Lewis' that extreme haecceitism 'has the obvious advantage' over substantial essentialism that, 'the less we believe in qualitative limits to haecceitistic difference, the less we need an account of how those limits are imposed' [1986: 239]. In other words, substantial essentialism has to bear the 'burden of moderation', while extreme haecceitism doesn't.

This means little if extreme haecceitism has significant counter-intuitive consequences. To that end, Mackie argues that extreme haecceitism can support many of the same intuitive conclusions that substantial essentialism does by employing the notions of tenacious properties and restricted modal contexts. She supports this point with three minor arguments that show (a) the extreme haecceitist and the essentialist agree about counterfactual claims that occur within restricted modal contexts; (b) tenacious properties can be employed within 'standard' distinctness arguments just as well as essential properties; and (c) tenacious properties can 'solve' Chisholm's Paradox just as well as essential properties. These arguments show that everything essentialism can do, extreme haecceitism can do too – all without the costly commitment to essential properties. Thus extreme haecceitism is superior to substantial essentialism.

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[114] So sortal essentialism is a form of substantial essentialism, as is origin essentialism. See Adams [1979: 25-6, 26n29], Skow [2008], and Lewis [1986: 239] for similar definitions of extreme haecceitism.

Lewis and the burden of moderation

Assume for the sake of argument, a sortal essentialism according to which you essentially are a human being.[115] A consequence of this essential property is that there are no possible worlds where you are a poached egg. The problem is that nothing *a priori* entails that your possibly being a poached egg isn't a genuine possibility – it appears consistent at least.

There is a disconnect between the apparent possibility of your being a poached egg and the fact that, according to sortal essentialism, it is impossible for you to be one. In this way, the sortal essentialist owes us an explanation as to *why* this apparent possibility isn't a legitimate possibility – he must say why there aren't any poached-egg-you worlds. Call this need for an explanation the 'burden of moderation'. What makes the burden so difficult to bear is that it is unclear what sort of explanation the sortal essentialist could give:

> …consider a set of sentences, otherwise a suitable candidate to be an ersatz world, which says of you, by name, that you are a poached egg. If this set is consistent, it is an ersatz world according to which you are a poached egg. The burden of moderation, therefore, is to say what makes this set inconsistent. It isn't inconsistent in a narrowly logical sense. It isn't inconsistent in virtue of axioms concerning the incompatibility of a few fundamental properties and relations of simple things, like the axiom saying that no particle is both positively and negatively charged. And it isn't inconsistent in virtue of axioms relating local to global descriptions, like the axiom saying that if particles are arranged in such-and-such way there is a talking donkey. [1986: 241][116]

So the sortal essentialist must explain why the apparently possible you-as-poached-egg worlds aren't possible, but it is difficult to find any good reason that the sortal essentialist can fall back upon; most amount to nothing more than simply *assuming* the required limitation.

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[115] The use of sortal essentialism is arbitrary as Lewis' argument can be run against any form of substantial essentialism; I here cite it simply because both Mackie and Lewis do so.

[116] Note that this is not meant to imply that the extreme haecceitist must understand worlds as sets of sentences – this is just how Lewis presents the point. Clearly, both extreme haecceitism and the burden of moderation argument are compatible with any understanding of the notion of possible worlds, as Lewis suggests.

The extreme haecceitist, meanwhile, drops the qualitative restrictions on identity that that the substantial essentialist is committed to and thus does not insist that there are any apparent possibilities which aren't genuinely possible. In this way, the extreme haecceitist

> stands to avoid a burdensome debt. A [substantial essentialist] says that there are qualitative constraints on haecceitistic difference; there is no world at all, however inaccessible, where you are a poached egg. Why not? He owes us some sort of answer, and it may be no easy thing to find a good one. Once you start it's hard to stop – those theories that allow haecceitistic differences at all do not provide a good way to limit them. The extreme haecceitist needn't explain the limits – because he says there aren't any. [Lewis 1986: 241]

This gives us Lewis' burden of moderation argument: sortal essentialism is committed to qualitative constraints on identity and therefore must provide some reason why some apparent possibilities aren't genuinely possible (further, no good reason appears forthcoming). Extreme haecceitism doesn't have to provide any reason because it takes every apparent possibility to be possible. Thus extreme haecceitism has 'the obvious advantage over substantial essentialism'.

Strong and weak interpretation of Lewis' argument

There are two ways to interpret Lewis' argument. On the strong interpretation, the real problem for the substantial essentialist is that he *cannot* offer any justification as to why the troublesome possibilities aren't genuinely possible – at least, any non-circular justification. As we have seen, arguments for substantial essentialism end up begging the question in their attempts to block undesired possibilities. Generalizing, we might conclude that, to block the 'bad' possibilities, the substantial essentialist will always have to simply assume their essentialist conclusions. Consequently, the substantial essentialist cannot provide a non-circular justification for rejecting problematic possibilities as not genuinely possible. Extreme haecceitism is clearly preferable to such a position.

Contrast this with the weak interpretation: in virtue of asserting that there are apparent possibilities and genuine possibilities, the substantial essentialist is committed to some levels of theoretical complication. The extreme haecceitist is not so committed, since she does not mark the distinction between apparent possibilities and genuine possibilities. Thus extreme haecceitism is preferably *simpler*.

Both readings end up with the same result: extreme haecceitism is preferable to substantial essentialism. The difference lies in which objections are applicable. I return to this point later; for now, let us proceed with the argument.

The 'cost-effectiveness' of extreme haecceitism

Lewis' argument entails that extreme haecceitism is preferable to substantial essentialism because it does not bear the burden of moderation. This alone isn't enough to justify the acceptance of extreme haecceitism, however; there is a question about whether the 'price' of accepting extreme haecceitism is acceptable.[117] We want a position that avoids the burden of moderation and also implies intuitive consequences. The trouble is that we have certain intuitions that extreme haecceitism doesn't look capable of supporting. If so, the results of Lewis' burden of moderation argument notwithstanding, there would be justification in preferring substantial essentialism to extreme haecceitism.

Mackie argues that this isn't the case, however: extreme haecceitism *can* do everything that substantial essentialism can do. She offers a way for the extreme haecceitist to account for essentialist intuitions without incurring the substantial essential property cost in the form of the tenacious property story. This is bolstered by three minor arguments, concerning agreement within restricted counterfactual contexts, 'essential property' distinctness arguments, and 'solving' Chisholm's paradox. When these arguments are coupled with Lewis', extreme haecceitism looks to be the smart consumer's choice.

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[117] See Mackie [2006: 155] and Lewis [1986: 241].

Aristotle's tenaciously not being a parsnip

There are plenty of widely accepted essentialist intuitions; one in particular is that Aristotle couldn't have been an instance of a sortal dramatically different from **human being**, e.g. **parsnip** or **paper clip**. What explains this intuition? Obviously, the most straightforward explanation is sortal essentialism: the reason Aristotle must be a human is because he essentially is so. And if sortal essentialist properties were the *only* explanation for this intuition, there would be reason to accept sortal essentialism. However, Mackie suggests

> we consider seriously the suggestion that we should explain the intuition that Aristotle could not have belonged to certain radically different sorts or kinds without supposing that, strictly speaking, his not belonging to these kinds is among his essential properties [2006: 151].

With an eye towards such an explanation, Mackie introduces the notion of a 'quasi-essential' or 'tenacious' property:

> (T) A property Φ is a *tenacious* property of object *x* iff *x* has Φ in every possible world in which it exists except those worlds that are 'remote possibilities' - worlds which can rightly be ignored in all but the strangest modal contexts.[118]

Take Aristotle's having the property *being a human being*. If the property were tenacious instead of essential, then even if there are worlds where Aristotle is a parsnip, we could still accept that Aristotle couldn't have been an instance of sortal dramatically different from **human being**. This is because the Parnsip-stotle worlds are remote enough that we can rightly ignore them. The upshot is that there is a restricted sense of necessity according to which Aristotle *must* be a human being. Lewis makes it clear how the extreme haecceitist's account works:

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[118] Compare Mackie: 'Going beyond Lewis, let us call a property of an object 'quasi-essential' (or 'tenacious') if to suppose that the object lacks this property is to envisage a very remote possibility, one that would be ignored in all but abnormal contexts' [2006: 155].

When you insist, no matter how forcefully, that you could not have been a poached egg, the extreme haecceitist can agree. Not quite unequivocally, of course. After all, he does believe in worlds according to which you are poached egg. So if he speaks absolutely without restriction, ignoring none of all the possibilities he thinks there are, then he has to say you could have been a poached egg. *But he doesn't have to speak without restriction*. All hands agree that very often our modalities are quantifications restricted to 'accessible' worlds - we tacitly ignore worlds where the past differs, where the actual laws of nature are violated, where there are alien natural properties, or what have you. The extreme haecceitist need only say that this tacit restriction goes further than we usually think: even when all the other restrictions come off, still we persist in ignoring far-out worlds where things differ too much in qualitative character from the way they actually are. Almost always... these far-out worlds are left aside as inaccessible. Leaving them aside, indeed you could not have been a poached egg – which is just what you said.' [1986: 239-40]

Thus we have the strategy for the extreme haecceitist's explanation of the intuition: first, the extreme haecceitist understands the 'essential property' (e.g. *being a human being*) as a tenacious property. The extreme haecceitist then insists that when we say things like 'Aristotle couldn't have been a parsnip or a poached egg', we think we're speaking unrestrictedly – quantifying over *all* of the worlds that there are, but in fact we are speaking restrictedly, quantifying over only those worlds that aren't 'too remote'. This means, given that *being a human being* is a tenacious property of Aristotle's, in all of the worlds our restricted quantifier ranges over, Aristotle *must* be a human being. In effect, the story turns on something like Lewis' *sotto voce* proviso about knowledge as applied to essential properties: 'If a property Φ is essential to x, then for every possible world x has Φ – Psst! – except for those possibilities that we are properly ignoring.'[119] Consequently, the extreme haecceitist can conclude that Aristotle could not be a parsnip (within the restricted sphere of worlds). Thus

although it is, in fact, a genuine possibility that Aristotle could have been a poached egg, this possibility is too far-fetched to be treated as relevant in any normal context of counterfactual speculation. Hence

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[119] See Lewis [1996: 554]

the acceptability, in all normal contexts, of 'Aristotle could not have been a poached egg', and the remarkable prevalence of the intuition that to suppose that he could have been one is an absurdity. [Mackie 2006: 155]

So the argument for the cost-effectiveness of extreme haecceitism is that, with the tenacious property story and an insistence that we are (almost always) operating within a restricted modal context, extreme haecceitism can vindicate common-place intuitions about qualitative restrictions on identity without appealing to any essential properties – clearly a favourable result for extreme haecceitism.

This isn't the only argument Mackie offers in support of extreme haecceitism. The following three minor arguments also indicate how extreme haecceitism can bring about results similar to substantial essentialism in other areas, thus further demonstrating its cost-effectiveness.

Restricted modal contexts and counterfactuals

Every modal theorist accepts that there are contexts wherein the range of relevant possibilities is restricted in some way. Within these restricted contexts, the extreme haecceitist and their essentialist rivals agree. This means extreme haecceitism can support essentialist intuitions within these restricted contexts just as well as substantial essentialism. Mackie presents three cases to support this conclusion.

First, within contexts where the discussion focuses upon how an object could *become* different, the extreme haecceitist can agree with the substantial essentialist about the results of counterfactuals. Both agree that Aristotle couldn't have failed to be the teacher of Alexander *after the fact*. This is true even though they disagree about whether Aristotle could have been a parsnip. In this way, the difference between the two positions is irrelevant for questions about how different something might *become*. Thus,

> there is no reason why extreme haecceitists should not agree with their opponents about the range of *de re* possibilities that is included in the ways in which Aristotle could have become different... even though they hold contentious views about the range of ways in which he could have *been* different. [Mackie 2006: 156-7]

The second case is when we counterfactually speculate about objects in terms of how they would have been different, *given certain other features of the world*: e.g., we might ask how Napoleon might have fared as a general in 1940's France, and while there might be some debate about the answer, both the essentialist and the extreme haecceitist can agree that the possible worlds involved are legitimately possible - the extra worlds that the extreme haecceitist believes in don't enter into the picture. So as with questions about how different something might become, the difference between extreme haecceitism and substantial essentialism is irrelevant when it comes to situations where we stipulate certain features of the world. As Mackie puts it,

> …where the antecedents of these counterfactual speculations do not concern remote possibilities, remote possibilities are irrelevant to their consequents too. ...the fact that extreme haecceitists believe in a wider range of genuine possibilities …than do their opponents provides no reason why the extreme haecceitists should disagree with their opponents about what subset of the total range of possibilities is relevant to the assessment of a counterfactual conditional whose antecedent is agreed by both parties to represent a possibility. [2006: 158-9]

The third and final case is where we stipulate that the causal powers of the individuals involved in the counterfactual are fixed as they actually are. Here Mackie makes another persuasive point:

> many of the *de re* possibilities that interest us are cases where certain causal powers or potentialities of the individuals in question are kept fixed in the envisaged counterfactual... thus...the extreme haecceitist's possibility in which Aristotle is a cheetah... is irrelevant to the question whether, assuming his causal powers unchanged, Aristotle could have run a mile in four minutes. But equally irrelevant to

this question is the possibility – which most philosophers who are not extreme haecceitists would readily admit to be such – that Aristotle could have existed with the muscular powers of a modern Olympic athlete. [2006: 159]

These three cases confirm that when it comes to restricted contexts, 'extreme haecceitists have no reason to disagree with their opponents about what is included in the range of *de re* possibilities' [2006: 160]. Importantly, this means that extreme haecceitism provides the same results as substantial essentialism within all of these restricted contexts without any commitment to essential properties.

Distinctness arguments and tenacious properties

Another argument Mackie offers in support of extreme haecceitism is that, via the tenacious property story, it can account for arguments that rely upon differences in 'essential' properties to demonstrate non-identity. Mackie details the situation:

> Even when there is no obvious difference between the non-modal properties of A and B... philosophers may appeal to a difference in the essential properties of A and B in order to establish the non-identity of A and B, via Leibniz's law. Thus, for example, if Descartes and his body have different essential properties, they are distinct entities... [2006: 160]

In fact, these arguments needn't turn on *essential* differences between Descartes and his body; all that is required is *any* modal different. For example, if Φ is a tenacious property of Descartes but not his body, there is a nearby world wherein the two qualitatively differ. This is sufficient to entail, by Leibniz's Law and the necessity of distinctness, that they are necessarily distinct. In this way, the extreme haecceitist can, just as effectively as the substantial essentialist, use such arguments.

Of course, this isn't the *only* way to reconcile extreme haecceitism and these distinctness arguments. Another possibility is to re-cast the arguments in terms of

straightforward counterfactuals; Mackie cites Lewis's [1986b] analysis of the distinctness of events, and notes that while it is phrased in terms of essential properties, all it really relies upon is counterfactual independence, i.e. an event A is distinct from event B iff if event A happens, B doesn't necessarily happen [2006: 161]. The extreme haecceitist could quite easily countenance distinctness arguments, so understood.

Further, many of these distinctness arguments turn upon differences in how two things might *become*, not how they might have been. Mackie cites the debate within the literature on personal identity between the psychological continuity theorists and the animalists as an example. What matters here is how different a person could *become*: the Lockean holds that to persist we must be identical to something that has certain psychological states, the animalist to something that has certain physical states. Essential properties don't enter into the matter.[120] So Mackie concludes that 'the extreme haecceitist's denial of essential properties is in no danger of either foreclosing or trivialising this debate, a debate in which the extreme haecceitist is fully entitled to participate, on either side' [2006: 163].

This makes it clear that the extreme haecceitist can employ distinctness arguments just as effectively as the substantial essentialist. Further, she can do so without any commitment to essential properties.

Solving Chisholm's paradox

A final argument in support of extreme haecceitism involves solving the 'paradox' first presented by Chisholm in his [1967]. Effectively, the paradox goes like this: take Rob, an actual human male philosopher and Hagatha, an actual undercooked haggis.[121] It is true of both of them that they could have been slightly different, i.e. Rob slightly more Hagatha-like

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[120] There is one sense of 'essential' which does enter into this debate: this is the sense of essence that I earlier (following Mackie) called the 'Weak Aristotelian Sense' of essence, which are those properties that an object cannot lose without ceasing to exist. Obviously, these sorts of 'essential' properties are relevant to the debate about persistence, but they aren't the sort of properties that essentialists are worried about.

[121] I use my own version of the paradox instead of the original Adam-Noah version because the consequences are intuitively more repulsive.

and Hagatha slightly more Rob-like. This gives us world W1, where Rob is ever so slightly more like an undercooked haggis, and Hagatha is more like a human male philosopher. From this W1, we can apply the same reasoning to generate W2, where both are made even more similar. …After some steps, perhaps many, perhaps just a few, we get world Wn, where Rob is qualitatively identical to actual-Hagatha and Hagatha is qualitatively identical to actual-Rob. This result is unacceptable: we want to allow *some* flexibility in how an object might have been but not too much, yet since little differences add up, accepting the possibility of little differences commits us to undesired flexibility in how different something might have been.[122]

The essentialist response to the paradox is to stipulate that there are certain essential properties of Rob's (and Hagatha's) which prevent the swap: i.e. Rob essentially has the property of *being a human* and Hagatha *being a haggis*, so it follows that Rob and Hagatha could not be qualitatively identical.[123] Thus the substantial essentialist can solve the paradox via essential properties.

Fortuitously, tenacious properties can be used by the extreme haecceitist to bring about similar results: replace the essential property that blocks the sorites shift with a tenacious version of the property. Although Rob could have been qualitatively identical to Hagatha, the possibility is so remote that we can ignore it for most of our speculations. Consequently, the extreme haecceitist can 'block' the paradoxical conclusion by stipulating that, within standard (restricted) modal contexts, Rob *couldn't* lose the property of *being a man* (similarly with Hagatha and *being a haggis*). Of course, when the restrictions are dropped, the extreme haecceitist embraces the conclusion of the paradox – but this doesn't matter, because we don't usually drop the restrictions![124]

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[122] See Lewis [1986: 240-246].

[123] It is a bit harder for the substantial essentialist to respond to the paradox in its original version, where we have Adam and Noah swapping qualitative roles, if only because sortal essentialism won't prevent such a qualitative swap. Still, it could be done though some other form of essentialism: Salmon [1981] and Chandler [1976] use origin essentialism.

[124] Lewis presents Chisholm's paradox as an argument for extreme haecceitism [1986: 242-5], while in her treatment Mackie handles it like a potential difficulty [2006: 163-5]. Either way, within the overall argument it works as another point in favour of extreme haecceitism, as I here presented.

In this way, the extreme haecceitist can ensure the truth of certain intuitive responses to the paradox: instead of essential properties blocking paradoxical conclusions, the extreme haecceitist has 'quasi-essential' tenacious properties doing so (within the normal restricted modal context that the speculation occurs within).

Concluding Part 1

This brings us to the end of the first part of the overall argument. According to Lewis' burden of moderation, extreme haecceitism is superior to substantial essentialism; exactly why depends upon whether we buy the strong or weak interpretation. However, extreme haecceitism might still be too costly, entailing too many counter-intuitive consequences. To show that it is not, Mackie argues that, via the tenacious property story, the extreme haecceitist can vindicate intuitive 'essentialist' intuitions within restricted modal contexts. Further, she shows how extreme haecceitism and substantial essentialism imply the same results in restricted counterfactual contexts, that accepting extreme haecceitism does not prevent the use of 'essential property' distinctness arguments, and that the extreme haecceitist can present responses similar to the substantial essentialist when it comes to Chisholm's paradox. Linking these together, we can conclude that extreme haecceitism looks much better than substantial essentialism.

Was this the end of the overall argument, we would have an interesting conclusion, for it implies that the answer to the Extension Question is that there are *no* essential properties. This is counter-intuitive, but feasible; after all, as Parsons showed, in accepting quantified modal logic we are committed to the meaningfulness of essential properties (read: *de re* necessary properties), but not to there being any. Then the work in Part I of the thesis was interesting, but ultimately for naught, since nothing satisfies the conditions for being an essential property.

Of course, the argument does *not* stop here – this is only the first half of a two-picture show. Extreme haecceitism is, in the second half of the argument, going to give way to

minimalist essentialism. So perhaps there will turn out to be some properties to include within our essential extension after all. Yet before we press on with the overall argument, I would like to raise some objections to this first part.

Objecting to Part 1

In this section, I present a series of objections to Part 1 of the overall argument. In particular, I present one objection to the strong and one objection to the weak interpretations of Lewis' burden of moderation argument, as well as a pair of objections to Mackie's arguments for extreme haecceitism's cost-effectiveness. These objections show that it is questionable whether extreme haecceitism is in fact superior to substantial essentialism, potentially de-railing the overall argument.

The possibility of non-circular reasons: objecting to the strong interpretation of Lewis

Recall again that the strong interpretation of Lewis' argument is that substantial essentialists are incapable of providing non-circular reasons why some apparent possibilities (e.g. Aristotle's possibly being a parsnip) are not genuinely possible. This interpretation depends upon adding to Lewis' burden argument the premise

(Q) Every reason the substantial essentialist can cite for rejecting the problematic possibilities is question begging.

The extreme haecceitist can justify (Q) via an inductive argument: it is certainly true of all the substantial essentialist positions that I have examined that they rely upon begging the question in order to reject problematic possibilities (be it recycling cases, the possibility of an object being an instance of a different sortal, or what have you). From these cases, we can

generalize to the claim that *all* substantial essentialists reasoning must be circular. So (Q) is a universalization from a sample of arguments for substantial essentialist positions.

Of course, this sample is just a fraction of the number of possible arguments for substantial essentialism: there are lots of other arguments still out there, most of which haven't even been formulated or expressed yet. This should make us suspicious that (Q) might be the product of a fallacy of hasty generalization. But let us set aside worries about inductive generalizations – a better argument against (Q) can be found.

Nothing *a priori* entails that 'possibly, there is a substantial essentialist justification that isn't circular' is inconsistent. Consequently, it is an apparent possibility. This puts the extreme haecceitist in a bind: either she must accept that it is genuinely possible for there to be an argument for substantial essential that isn't question begging or she must assert that this apparent possibility isn't genuinely possible. Both lead to trouble. If the possibility is genuinely possible, there is at least one argument for substantial essentialism that is non-circular. This undermines (Q) and therefore the strong interpretation of the argument. In the grander scheme of things, this entails that some form of substantial essentialism is correct and thereby derails the argument for extreme haecceitism. Clearly then, the extreme haecceitist must deny that it is a genuine possibility.

However, if the apparent possibility isn't genuinely possible, the extreme haecceitist must explain why this apparent possibility isn't genuinely possible. This looks quite hard to do – indeed, the substantial essentialist might argue that the extreme haecceitist cannot do so without some form of circular argument… More importantly, until the extreme haecceitist offers some such explanation, the burden of moderation argument is devalued: neither the substantial essentialist nor the extreme haecceitist has any 'obvious advantage' when it comes to not demarcating the apparent possibilities from the genuine possibilities.

So it appears that the extreme haecceitist is trapped: either she can accept the genuine possibility of some non-circular reason supporting substantial essentialism and thereby shoot herself in the foot, or she can reject it as a non-genuine apparent possibility, which means she

too has to bear the burden of moderation. Both ways undercut the strong interpretation of Lewis' argument.

In response to this objection, the extreme haecceitist could restrict (Q) to avoid the dilemma. While (Q) ranges over *all* substantial essentialist arguments, including those that are merely possible (which is what leads to the dilemma), a weaker premise that ranges over only those arguments that currently available would not be troubled by the mere possibility of a non-circular substantial essentialist reason. Such a premise would be something like

(Q') Every reason the substantial essentialist can *presently* cite for rejecting the problematic possibilities is question begging.

Of course, using (Q') entails changing the conclusion of the strong interpretation, weakening it to the thought that substantial essentialists are *at present* incapable of justifying their position, though they theoretically could.

And while this response successfully avoids the above dilemma, it doesn't force us into rejecting substantial essentialism – in fact, quite the opposite: given the objection, we know that there is (at least) one possible argument for substantial essentialism that isn't question begging. Consequently, we know that substantial essentialism is *correct*; what we don't know is what *form* of substantial essentialism is correct and how to justify it – yet. So we shouldn't give up on substantial essentialism and embrace extreme haecceitism. Instead, we should try to work out what the non-circular substantial essentialist argument is. In other words, this response from the extreme haecceitist isn't a way to motivate us into rejecting essentialism, so much as a way to get us back to work, hammering out the non-circular essentialist argument.

For this reason, I conclude that the strong interpretation of Lewis' argument does not in fact support extreme haecceitism. It cannot be a part of the argument for the superiority of extreme haecceitism over substantial essentialism.

Turning the tables: objecting to the weak interpretation of Lewis

According to the weak interpretation of Lewis' burden of moderation argument, because substantial essentialism must provide a reason as to why some apparent possibilities aren't genuinely possible, it is a more *complicated* position than extreme haecceitism (which does not rule out any such possibilities). This methodological point is intended to make us favour extreme haecceitism.

The weak interpretation depends upon the assumption that a simpler theory is methodologically preferable to a more complicated one. The substantial essentialist might object to this assumption, but doing so would lead into complicated issues involving theoretical virtues and would, quite frankly, be a mess. This is especially true because there is a straightforward objection to the weak interpretation. Extreme haecceitism is just as committed as substantial essentialism is to distinguishing genuine possibilities from apparent possibilities. Consequently, extreme haecceitism must also offer some reason as to why some apparent possibilities aren't genuinely possible. It is not a simpler theory after all.

There are lots of apparent possibilities that involve necessities, i.e. possibilities picked out by sentences where the possibility operator has wide-scope and the sentence contains a *de re* necessity; one such apparent possibility is expressed by the sentence, 'Possibly, Aristotle necessarily is human'. If this is genuinely possible, there would be some possible world whereat Aristotle has a necessary property (namely, his being a human being). Given a modal logic where the accessibility relation between worlds is transitive, this implies that Aristotle *actually* has such a necessary condition, *contra* extreme haecceitism.

Clearly then, the extreme haecceitist is committed to rejecting this as a non-genuine possibility; she can't accept it without rejecting her own position. Yet if the extreme haecceitist rejects this possibility, she too must now bear the burden of moderation: the extreme haecceitist must say why the apparent possibility of Aristotle's possibly necessarily being human isn't genuinely possible. This is enough to defeat the weak interpretation: extreme haecceitism is at least as complicated as substantial essentialism as regards the

burden of moderation – the only difference is which apparent possibilities they reject as disingenuous.

Effectively, this objection works by turning the tables upon the extreme haecceitist, forcing them into admitting that they too accept some qualitative limits to haecceitistic difference. However, instead of limits based on instantiating properties like *being a human*, the extreme haecceitist is committed to limits captured by more complicated properties like *necessarily not essentially being a human*.[125]

One way the extreme haecceitist can respond is to reject the assumption that the accessibility relation between worlds is transitive. If so, then while it is *possible* that Aristotle necessarily is a human being, nothing entails that Aristotle actually is necessarily so. So by denying transitivity, the extreme haecceitist no longer has to deny that the possibility is genuinely possible and so does not have to bear the burden of moderation.

The trouble is that while this response protects the simplicity of extreme haecceitism as regards the burden of moderation, it faces three problems. First, it renders the position complicated along a different axis: by committing itself to a non-transitive accessibility relation, is must now justify why this relation is this way. Meanwhile, substantial essentialism can remain compatible with any kind of accessibility relation that you like. Consequently, extreme haecceitism is more complicated than substantial essentialism concerning issues related to accessibility relations. Second, if the accessibility relations are non-transitive, then many substantial essentialist arguments can be made to work: for example, the arguments for origin essentialism that failed due to recycling cases (e.g. Salmon's) are, given a non-transitive accessibility relation, now successful. So by altering the accessibility relations in this way, the extreme haecceitist opens the door to plenty of unwanted essentialist consequences. Third, Lewis suggests that saying there are worlds which exist but are inaccessible 'is no defence, but is capitulation. In these questions of haecceitism and essence, by what right do we ignore

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[125] Obviously the property necessarily not essentially being a human is not a sparse property and so could not be essential to an object on my understanding of essential properties. This does not affect the objection, however; so long as we accept that there are such abundant properties – which I am happy to do – this objection works.

worlds that are deemed *in*accessible? Accessible or not, they're still worlds. We still believe in them. Why don't they count?' [1986: 246][126] These reasons are enough to warrant rejecting this response.

Perhaps another line of response is in order. Lewis' burden of moderation argument places a burden of proof on the substantial essentialist – they must explain why there are qualitative limits on how different an object could have been. This makes substantial essentialism less attractive than extreme haecceitism. However, this objection amounts to nothing more than simply shifting this burden by asking the extreme haecceitist why there *aren't* any qualitative limits on how different objects could have been. To that end, the extreme haecceitist might respond that this objection isn't that worrisome, since it is just a burden of proof argument turned back upon itself. Effectively, it is just the substantial essentialist saying, 'Well, why *not* essential properties?', which is clearly a dubious strategy.

The trouble with this response is that the burden of moderation argument is a burden of proof argument too. So if the extreme haecceitist can dismiss the objection because it is this kind of argument, then the substantial essentialist can, using similar reasoning, dismiss Lewis' initial argument. One can imagine the following being said: 'The extreme haecceitist says that I, the substantial essentialist, must explain the qualitative limits? Well she's in the same pickle too: she's got to explain why there aren't any such limits. So at worst we're at a standoff – and I can still go on believing in essential properties.' Thus if the extreme haecceitist uses this response, then they undercut the burden of moderation argument.

These are enough, to warrant thinking that the weak interpretation of the burden of moderation argument is flawed, and cannot offer any support for favouring extreme haecceitism over substantial essentialism.

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[126] Lewis makes this comment in the discussion regarding solutions to Chisholm's paradox, but it is equally applicable here: worlds are worlds, and we shouldn't discount troubling ones just because they are troubling.

Objecting to Mackie's arguments

These results do not entail the failure of the Part 1, however. Even if Lewis' burden of moderation argument doesn't offer any support to extreme haecceitism, Mackie's arguments regarding its cost-effectiveness might be enough to warrant preferring extreme haecceitism to substantial essentialism. However, the substantial essentialist can object to some of Mackie's cost arguments, and perhaps enough to save their position. Of course, the substantial essentialist must pick their battles: it is hard to argue with Mackie about the overlap between extreme haecceitism and substantial essentialism within restricted modal contexts; the same goes for her assessment of 'essential' distinctness arguments not turning upon essential properties. Instead, I focus upon Mackie's tenacious property story, arguing that it does not have the pay-off she claims it does.

Why is Φ tenacious to Aristotle?

The first objection is in fact a problem Mackie herself notes: the tenacious property story turns upon the idea that objects have certain properties tenaciously. What marks these properties as special in this tenacious way? In other words, why are certain properties like *being a human* tenacious to Aristotle while properties like *being a philosopher* aren't? Mackie admits that 'we stand in need of an account of why some properties of a thing are quasi-essential to [an] object while others are not.' However, she continues,

> …it is not clear that the results of this account can simply be appropriated by a theory that makes the properties in question essential rather than quasi-essential. For one thing, the quasi-essentialist can very naturally construe a property's being quasi-essential (or tenacious) as a matter of degree. By contrast, the standard notion of a genuinely essential property does not admit of degrees. [2006: 155-6].

Mackie is correct that the standard notion of an essential property does not admit of degrees. But recall the essentialist can posit several restricted senses of essence corresponding to

restricted senses of necessity.[127] If the substantial essentialist were to do so, they could have a notion of 'essential' that admitted of degrees: the closer to metaphysical necessity the restricted necessity is, the stronger the degree of essentiality. This would require only slight alteration in the definition of 'essential property', and if it would allow the essentialist to borrow the extreme haecceitist's story about why certain properties are special, it would be worth the change.

Further, the sparse property analysis of essential properties that I endorse[128] lends itself to a degrees-account: Lewis admits,

> Probably it would be best to say that the distinction between natural properties and others admit of degrees. Some few properties are perfectly natural. Others, even though they may be somewhat disjunctive or extrinsic, are at least somewhat natural in a derivative way, to the extent that they can be reached by not-too-complicated chains of definability from the perfectly natural properties. [Lewis 1986: 61][129]

Suppose that we agree that properties can have degrees of sparsity. Taking the completely sparse properties as the limit, my preferred sparse modal analysis can be modified so as to permit degrees of essentiality based upon degrees of sparseness. Importantly, this would not alter my responses to Fine's objections: the properties he proposes could be understood as being non-essential in the most extreme degree, which would be enough to derail the Finian objections.

If we desired, we could link these stories together, so that one axis of essentiality regards how sparse a property is, while the other concerns what strength of necessity applies. For this discussion, this means that whatever story Mackie employs to explain why certain properties are tenacious and others merely accidental, the substantial essentialist will be able to appropriate it.

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[127] See Chapter 4, pg 61-2.
[128] See Chapter 5.
[129] Here, Lewis' 'natural' is my 'sparse'.

This is getting ahead of ourselves, however: the essentialist can't steal something Mackie doesn't have. So what might Mackie say to explain why certain properties are tenacious? Here it is unclear, since nothing that proposes a necessary connection between qualitative natures is going to stand up to extreme haecceitism's denial of such connections. And even if Mackie does come up with a story (and if it is one that permits of degrees), the essentialist can just lift it off her. So this looks like a serious reason to doubt the superiority of the tenacious property story over genuinely essential properties.

'Normal contexts' ≠ absolute contexts

The extreme haecceitist's tenacious property story purports to be the cheaper alternative to essential property accounts. It is 'cheaper' because the commitment to tenacious properties is meant to be less worrisome than commitment to essential properties and because 'the role that is typically accorded to essential properties may be played, without significant loss, by quasi-essential ('tenacious') properties' [Mackie 2006: 155]. In particular, one role that tenacious properties are thought to play is making true essentialist assertions about limitations on how different something might have been. The extreme haecceitist can achieve the same result by stipulating that such assertions are uttered within restricted modal contexts; thus the 'essential' property is really a tenacious property, and the worlds which falsify the assertion that the extreme haecceitist are committed to are rightly ignored as being too distant.

Such is the tenacious property story. But what *are* the essentialist assertions that the tenacious property story is meant to be accounting for? When I say that 'Aristotle could not have been a parsnip', my use of 'could not' is *prima facie* unrestricted – this is especially true given the earlier association of essential properties with metaphysical necessity, which is meant to take into account all of an object's *de re* possibilities.[130] This means the assertion the tenacious property story must account for is something like, 'There is *absolutely* no world

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[130] See Chapter 4, pg. 63.

where Aristotle is a parsnip'. Obviously, the extreme haecceitist isn't going to be able to tell a story that makes this assertion true, simply because, according to extreme haecceitism, it is false.

So understandably the tenacious property account's ability to account for essentialist intuitions looks a bit like a bait-and-switch: the extreme haecceitist says that he's going to give us the standard essentialist results without the essentialist price-tag, but when we get the result, we find that they have been subtly altered in unacceptable ways.

Lewis nicely captures this point. Suppose that you say, 'I essentially am not a poached egg'. Now,

> You probably thought you were speaking unrestrictedly. You had two opinions:
>
> (1)   that you meant something true when you said you could not have been a poached egg, and
> (2)   that in saying so, you did not mean to be quantifying over less than all the possibilities there are.
>
> The extreme haecceitist has a way to agree with (1), but at the cost of disagreeing with (2). He is 'speaking with the vulgar' – that is, he is granting the truth of what you said, but disputing your understanding of what you meant.

Having summed up the case, Lewis lays out the objection:

> … Some say that speaking with the vulgar is a worthless trick; we know perfectly well what we mean, and if it isn't what the trickster means, then his merely verbal agreement with us is no agreement at all. It does nothing fair to enhance the plausibility of his doctrines. On this view, to speak with the vulgar by agreeing with (1) while disagreeing with (2) is just a dishonest way of covering up genuine and serious disagreement. [1986: 240]

Re-phrasing slightly, the objection amounts to the idea that the 'essentialist' results available to the extreme haecceitist via the tenacious property story aren't the right results at all: while they *sound* exactly like essentialist assertions, they are fundamentally different.

Of course, when pressed, the extreme haecceitist is going to agree with this result; after all, if the tenacious property results were the same as when we used essential properties, then extreme haecceitism wouldn't be correct. So we might not think that this isn't that terrible an objection, if we are being fair to the extreme haecceitist. But the fact that the tenacious property story only provides the right results when we misinterpret the essentialist's assertions should at least make us question whether extreme haecceitism really is a cost-effective alternative to substantial essentialism.

Results of the objections

This concludes my objections to Part 1 of the argument. Clearly, both objections to Lewis' burden of moderation argument are crippling to the overall push for extreme haecceitism over substantial essentialism. The two objections to Mackie's arguments, while not quite as damaging, make it questionable whether extreme haecceitism is in fact a cheaper option: without a story about why certain properties are 'special' (i.e., tenacious), the tenacious property story doesn't look like it even has much in the way of content. Coupling this with the worry that it works by twisting around the meanings of essentialist assertions, one can see why we might be doubtful about extreme haecceitism's superiority. Still, let us assume the success of Part 1, so that we can now proceed to Part 2, where extreme haecceitism is rejected in favour of minimalist essentialism.

Part 2: for minimalist essentialism over extreme haecceitism

In this section I present Mackie's argument for preferring minimalist essentialism over extreme haecceitism. Here is Mackie at length advancing the argument:

> It must be admitted, as a matter of logic, that if there is any kind of thing such that, necessarily, everything that belongs to that kind belongs to it essentially, then if Aristotle does not in fact belong to that kind, he could not have done so. …Now, perhaps this line of reasoning will support the conclusion

that the most extreme versions of haecceitism… can be rejected. For example, perhaps we should accept that every number is essentially a number, and that every event is essentially an event, and every abstract object essentially abstract. If so, since Aristotle is, in fact, neither a number nor an event nor an abstract object, it follows that he could not have been a thing of any of these kinds. …let us say that a kind or category is an essential kind or category if and only if, necessarily, anything that belongs to it belongs to it essentially. Then we can say that, although… it my be unclear which are the essential kinds or categories to which Aristotle does belong, it may yet be clear that there are certain essential kinds or categories to which he does not, and hence that there are at least some kinds of thing such that Aristotle could not have been a thing of one of those kinds. If so, it may be that any version of extreme haecceitism that is so extreme as to attempt to explain away, rather than to accept at face value, the intuition that Aristotle could not have been, say, a hurricane, a baseball game, a Platonic universal, a hypothesis, a set, or the number 17, is indefensible.

With this I agree. A sensible version of extreme haecceitism should not be so dogmatic as to deny that there may be *some* kinds or categories that are essential kinds or categories, and that, as a consequence, there are some genuinely essential properties that Aristotle has that represent limits to the ways in which he could have been different from the way that he actually is. Nevertheless, this concession is evidently compatible with a fairly extreme version of haecceitism – what one might call 'minimalist essentialism'. [2006: 165-6]

There is a lot that happens within this quote, so I will spend the remainder of this section presenting what I take the argument to be, in order to make clearer what is going on.

The tension

First, let us offer the following definition: a kind *K* is an *essential kind* iff necessarily, anything that belongs to it belongs to it essentially. If there are any essential kinds, it is true of *every* entity that either it necessarily is an instance or necessarily is not an instance of the essential kinds; thus, assuming that **number** is an essential kind, Aristotle is either necessarily or necessarily not a number, depending upon whether he actually is one.[131] Further, according to

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[131] Note that this does not imply that Aristotle essentially is or is not an instance of such a kind according to my analysis of essential properties; this is because the properties involved might not be sparse and so not eligible for essentiality.

extreme haecceitism, there are *no* limitations on how something might be – in other words, there are no kinds of which an object like Aristotle is necessarily or necessarily is not an instance.

With this in mind, take the following trio of assumptions:

(1) Extreme haecceitism is true.

(2) **Number**, **event**, and **abstract object** are essential kinds.

(3) Aristotle isn't a number, an event, or an abstract object.

Together, (2) and (3) entail:

(4) Aristotle could not have been an instance of any of these kinds.

In this way, it appears that 'there are at least some kinds of thing such that Aristotle could not have been a thing of one of those kinds'. Yet from (1) we can derive

(5) There are no kinds that Aristotle couldn't have been an instance of.

Thus we get a contradiction between (4) and (5): there are some kinds that Aristotle could not have been an instance of and there are no kinds that he could not have been an instance of. One of the assumptions has to be rejected. Which one is it going to be?

We might be tempted by (3); perhaps we are haunted by Frege's Julius Caesar problem, convinced that Aristotle is identical to the event that is his life, or we accept that Aristotle is an abstract object.[132] Yet this wouldn't do any good, since we would then have to conclude that Aristotle necessarily *is* an instance of (at least) one of these essential kinds, which is just as antithetical to extreme haecceitism. In this way, avoiding the contradiction

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[132] See Frege [1884/1974: §55, §66], Wright [1983], and Hale & Wright [2001] about the Julius Caesar problem; Mellor [1980], Quine [1960], Parsons [1991] and Whitehead [1929] on objects as events; and Burgess and Rosen [1997], Zalta [1983] and Hale [1987] regarding abstract objects.

comes down to rejecting either (1) or (2) – in other words, we must give up on either extreme haecceitism or essential kinds. Of course, it also won't do to simply reject the three particular kinds used as examples here – if we did that the argument could still be run again with some other essential kind.[133] This makes it clear that rejecting (2) amounts to rejecting the existence of *any* essential kind whatsoever. So, which is it going to be: the possibility of an essential kind or extreme haecceitism?

Mackie's suggestion and the ramifications

Mackie suggests that 'a sensible version of extreme haecceitism should not be so dogmatic as to deny that there may be *some* kinds or categories that are essential kinds or categories…' [2006: 166]. I take her to be saying that we shouldn't deny that it is *possible* that there are some essential kinds. This is, I think, the crux of the argument.

Now, there are two consequences to accepting the possibility of essential kinds. First, because extreme haecceitism is committed to the denial of there being any even merely possible essential kinds, Mackie's suggestion implies that extreme haecceitism must be rejected. This renders extreme haecceitism, for all of the virtues argued for in part 1 of the argument, 'indefensible'. Second, because there are some possible essential kinds, it follows that Aristotle has either the essential property of *necessarily* or *necessarily not being an instance of such a kind*. Of course, because we're only accepting the *possibility* of there being some essential kinds and thus staying agnostic about what these essential kinds might be, we don't actually know what essential properties Aristotle has – just that he's got some. In this way, by rejecting extreme haecceitism, we are committing ourselves to a *non-empty* essential property extension: Aristotle must have some 'genuinely essential properties' which

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[133] This is why Mackie says that she isn't committing herself to **event**, **abstract object**, and **number** being essential kinds [2006: 166n20]. She can maintain agnosticism. All that matters is that there are *some* essential kinds, whatever they might be.

'represent limits to the ways in which he could have been different from the way that he actually is'.[134]

Strong and weak reading of Mackie's suggestion

As was the case with the conclusion of Lewis' burden of moderation argument, it is possible to give two readings to Mackie's suggestion that 'a sensible version of extreme haecceitism should not be so dogmatic as to deny that there may be some kinds or categories that are essential kinds or categories…' [2006: 166].

A strong interpretation takes this line to be an assertion that there is at least one possible world where some essential kind exists.[135] Given that this possibility is true, accounts of how things might have been must not contradict it – if they do, they must be rejected. Of course, extreme haecceitism stipulates that it is not possible for there to be any essential kinds, which clashes with the possibility. Meanwhile, the weak interpretation takes Mackie to be suggesting that a 'sensible' story does not assert that there *couldn't* be any essential kinds but instead *allows* for such a possibility. This 'allowing' doesn't entail accepting it as genuinely possible, i.e. falling into the strong interpretation however; rather, the implication is that the best position should be flexible enough to *accommodate* such a possibility were it genuinely possible.

These interpretations dove-tail in concluding that extreme haecceitism should be rejected, though they differ regarding the reasons why. This implies that different objections can be levelled at the different interpretations, a point I return to shortly. For now, let us return to the argument.

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[134] This depends of course upon what analysis of 'essential' we employ here. On the sparse modal analysis, *necessarily not being an instance of such a kind* could not be an essential property of Aristotle's since the property is not sparse; let us ignore this problem for now.

[135] This might be because the sentence 'possibly, there are some essential kinds' is true, or because some kind has the property of *possibly being an essential kind*. Either way, the result is the same: at least one possible world where there exists at least one essential kind.

Minimalist essentialism to the rescue

Accepting the possibility of essential kinds needn't force us into some form of substantial essentialism, however; rather, it forces us to temper our haecceitistic fervour slightly.

According to extreme haecceitism, there are no connections between an object's qualitative nature and its identity. This is incompatible with the possibility of essential kinds. In place of this extreme haecceitism, Mackie suggests a more moderate form which allows for *some* necessary connections between an object's qualitative nature and its identity. This position has more essentialist commitments than extreme haecceitism, but would have only the bare minimum – definitely less than substantial essentialism.

Thus Mackie gives us *minimalist essentialism*, the version of haecceitism which accepts that objects have genuinely essential properties, but only those essential properties that we *must* believe in. For most properties, the minimalist essentialist agrees with the extreme haecceitist, and can use the tenacious property story to account for essentialist intuitions. However, some properties the minimalist essentialist accepts as genuinely essential. In this way the concession that (possibly) there are essential kinds is 'evidently compatible' with minimalist essentialism.

For this reason, when we plug minimalist essentialism into the argument above, the tension is resolved: no contradiction can be derived.[136] For this reason, minimalist essentialism is superior to extreme haecceitism.

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[136] The argument now looks like this:

(1') Minimalist essentialism is true.		[Assumption]
(2') **Number**, **event**, and **abstract object** are essential kinds.		[Assumption]
(3) Aristotle isn't a number, an event, or an abstract object.		[Assumption]
(4) Aristotle could not have been an instance of any of these kinds.		[From (2'), (3)]
(5') There are some kinds that Aristotle either must be or couldn't have been an instance of.		[From (1')]

Concluding Part 2 and the overall argument

This brings us to the conclusion of the argument for minimalist essentialism. Part 1 secured the superiority of extreme haecceitism over substantial essentialism. This is partially because extreme haecceitism doesn't have to bear Lewis' burden of moderation, and partially because, via the tenacious property story, is not as costly as it might first appear. However, Part 2 demonstrated that, for all of its virtues, extreme haecceitism is incompatible with the possibility of there being some essential kinds. Since, according to Mackie, we shouldn't deny that it is possible that there are such kinds, extreme haecceitism must be given up. In its place, we should accept Mackie's minimalist essentialism. Thus minimalist essentialism is superior to extreme haecceitism. For these reasons, we can conclude that minimalist essentialism is the best position, and clearly the one that essentialists should accept.

Objecting to Part 2

In this section, I present a series of objections to this second part of the overall argument. Specifically, I present one objection to the strong interpretation of Mackie's suggestion, and one to the weak interpretation.

Tenacious, not essential, kinds: objecting to the strong interpretation

The strong interpretation of Mackie's suggestion takes Mackie to be stipulating that a certain possibility – namely, that possibly, there are essential kinds – is true. Because this possibility clashes with extreme haecceitism, extreme haecceitism must be incorrect.

Perhaps the first objection that one might make is that Mackie does not give us a reason to accept such a possibility – indeed, if anything, it almost looks like she simply assumes its truth. So, when Mackie asserts that 'a sensible version of extreme haecceitism should not be so dogmatic as to deny that there *may* be some kinds or categories that are essential kinds or categories' [2006: 165], the extreme haecceitist can ask why their story –

which does in fact deny such essential kinds – is 'dogmatic' when it seems just as dogmatic to assume the possibility of essential kinds in the face of the challenges offered in Part 1.

What might Mackie say to justify the assumption? Mackie could follow Adams [1979: 25] in arguing that without essential kinds it is pointless to think about *de re* modality. The extreme haecceitist could deny this, offering back the thought that while it might be 'pointless' to think about the *absolute* limitations of *de re* modality, within restricted modal contexts it is just as useful as it ever was: since extreme haecceitism supplies the right answers within these restricted contexts, it doesn't render *de re* modal studies pointless after all. So Adams doesn't offer Mackie any support.

Another possible avenue is Kirwan [1970], who asserts that while it is difficult to mark the distinction between essential and non-essential properties,

> [t]hat George is a bishop is certainly not essential to him, that he is not the Latin word for "bishop" certainly is: he could even now be defrocked, but he could never have been declined.

This appears to add some support to Mackie's suggestion that we should accept that there are essential kinds (in this case, Kirwan is perhaps suggesting that **word** and **object** are essential kinds). However, he continues,

> In between these clear cases, however, there are plenty which are unclear. It is not easy, for instance, to know whether the soul of our grandam might haply inhabit a bird, and the Aristotelian view that every man is essentially a man, so that no man could become a nightingale or a parrot except in the sense of being replaced by a nightingale or a parrot, is *unjustifiably dogmatic*. [Kirwan 1970: 49, my emphasis]

Seizing upon this last line, the extreme haecceitist can retort that the reason we think George couldn't be the Latin word for 'bishop' is because we are being dogmatic in exactly the same manner as the Aristotelian who suggests that every man is essentially a man. Were we to step out of the restricted modal context we normally operate in, we would see that George *could*

indeed have been 'episcopus'.[137] So here again the extreme haecceitist can throw the dogmatic point back at Mackie.

A final line of support is the thought that the distinction between universals and particulars is central to our being able to construct a combinatorial account of modality.[138] This implies that the very broad kinds **universal** and **particular** are essential kinds (e.g. Aristotle is essentially a particular and essentially not a universal) and would justify Mackie asserting that we must accept at least the possibility of them. However, there are familiar Ramseyan reasons for denying that the distinct between particulars and universals is genuine, and arguments for accepting single category ontologies.[139] So until Mackie disposes of those, such accounts offer her no support. So it seems that Mackie is being dogmatic when she asserts that possibly there are essential kinds, which is clearly enough to vindicate rejecting the argument against extreme haecceitism.

However, this isn't the only reply that the extreme haecceitist can offer; indeed, by employing the tenacious property stories the extreme haecceitist can accept that it *is* possible for there to be essential kinds, within restricted contexts. First, assume that there is some kind which some objects tenaciously are instances of, e.g. **man**. This implies that, within a restricted set of worlds (a proper subset of all the worlds), anything that belongs to **man** belongs to it necessarily. In this way, **man** satisfies the requirements for being an essential kind. So it is possible for there to be essential kinds –so long as we understand this assertion in the manner suggested.

Mackie might object that (a) the extreme haecceitist can only accept the possibility of essential kinds by re-interpreting the 'necessity' operators within the definition of 'essential

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[137] Of course, if we think of 'episcopus' as an individual, then George couldn't have been it in virtue of the necessity of distinctness, but then Kirwan's assertion is just that two distinct objects are necessarily distinct, which offers no help to Mackie.

[138] See Forrest [1986], Armstrong [1986, 1989a, 1997, 2004], Bigelow [1988], Bigelow & Pargetter [1990], Skyrms [1981], and Lewis [1986] for accounts along these lines.

[139] See MacBride [1999] for an argument that there is no way to construct a combinatorial reductive theory of modality from sparse universals and particulars, Ramsey [1925] regarding the collapse of the universal-particular distinction, and Campbell [1990] for one such single category ontology (for tropes).

kind' and (b) that such a re-interpretation changing the meaning of the expression in an unacceptable way. If she is right, then her use of the tenacious property story in Part 1 is undercut, which means the overall argument doesn't work: no Part 1, no reason to think that substantial essentialism should be rejected, no reason to prefer minimalist essentialism over its more substantial cousins.

So the strong interpretation of Mackie's suggestion cannot lead us to preferring minimalist essentialism over extreme haecceitism. The suggestion begs the question against the extreme haecceitist and, ignoring that, the extreme haecceitist can account for the possibility of essential kinds through careful selection of specific restricted modal contexts.

Mackie's weak suggestion

On the weak interpretation, Mackie is suggesting that a 'sensible' story should be flexible enough to *accommodate* the possibility of there being an essential kind. I take this to be a suggestion offered in the spirit of epistemic humility: we simply don't know whether it is or is not possible for there to be essential kinds. If we want to avoid saying something false, we should neither accept nor reject the possibility. So understood, the suggestion looks quite sensible; after all, we think it a good idea to withhold judgement on issues that we don't have enough information on.

The problem is that I don't see how this fits within the argument Mackie provides. She offers her suggestion, 'a sensible version of extreme haecceitism should not be so dogmatic as to deny that there *may* be some kinds or categories that are essential kinds or categories', then follows with the line, '…and that, as a consequence, there are some essential properties that Aristotle has that represent the limits to the ways in which he could have been different from the way that he actually is' [2006: 166]'. This implies those who agree with the 'sensible' suggestion aren't completely quiet about some questions regarding what is and is not possible – they accept that there are some essential properties. Consequently, the position that results from the suggestion, minimalist essentialism, takes a stand regarding some possibilities.

Therefore it is just as guilty as extreme haecceitism in violating the proposed epistemic humility. So the weak interpretation, understood as an expression of epistemic humility, does not imply that we should prefer extreme haecceitism over minimalist essentialism as Mackie presents the position. Both are equally bad. The only position that epistemic humility could push us towards would be a universal agnosticism about modal and essentialist issues. That simply isn't the position that Mackie advocates.

Of course, maybe the possibility of essential kinds is somehow special; maybe it merits genuine epistemic humility, while issues about essential origin and other essential properties don't. This would allow for the minimalist essentialist to take a stand about *some* essential properties (those not related to essential kinds), and would avoid the problem above. Of course, it would be quite mysterious why possibilities involving essential kinds deserve epistemic humility when other essentialist possibilities don't. So this is clearly then a last ditch, *ad hoc* manoeuvre.

I therefore conclude that the weak interpretation of Mackie's suggestion will not work within the context of the argument for minimalist essentialism. Perhaps it is a good point against extreme haecceitism, but it cannot be a point in favour of minimalist essentialism.

The final objection: minimalist essentialism doesn't answer the Extension Question

Things do not look good. First of all, the argument for minimalist essentialism does not look like it really holds much water. Regarding the first part of the argument, neither the strong nor the weak interpretation of the Lewisian burden of moderation argument offers any support to extreme haecceitism in favour of substantial essentialism, and Mackie's tenacious property story (which requires more fleshing out) only succeeds in producing 'essential' conclusions by changing the meanings of the conclusions in the first place. These problems certainly weaken the case for extreme haecceitism's being a superior position to substantial essentialism. Meanwhile the second part of the argument fares little better: Mackie's suggestion, upon which the whole rejection of extreme haecceitism turns, either can be

accommodated by the extreme haecceitist (on the strong interpretation) or doesn't offer any support to minimalist essentialism (on the weak interpretation). Yet for all of these problems, this final objection is perhaps the most serious for minimalist essentialism. While the other objections are aimed at the argument, this concerns the position itself.

Grant that the argument for minimalist essentialism succeeds, the other objections notwithstanding. Minimalist essentialism is compatible with the possibility of essential kinds and therefore is compatible with Aristotle having certain 'genuinely essential properties' that 'limit the ways in which he could have been different' [2006: 166]. However, minimalist essentialism is not explicitly committed to any *particular* essential property of Aristotle's: being a minimalist essentialist doesn't entail asserting that Aristotle essentially is not a number, for instance.

In one sense, this is clearly beneficial to minimalist essentialism, since it avoids tying the position to any particular essential property that could then be argued against. However, because minimalist essentialism remains agnostic about what essential properties there are, the essentialist commitments of the position are unclear. Effectively, saying that one is a minimalist essentialist does not mean anything when it comes to saying what essential properties there are. The minimal essentialist fails to tell us anything (one way or the other) about what essential properties Aristotle has.

This matters for two reasons. First, such a result makes minimalist essentialism look like an *ad hoc* position, invented to resolve the tension between being an extreme haecceitist and accepting that possibly there are essential kinds. Worse, by having nothing to say about what essential properties there are (or are not, for that matter) minimalist essentialism *cannot* help us answer the Extension Question. Because the position does not specify any essential properties, it does not specify any essential extension, even in the negative.

This would be fine if minimalist essentialism wasn't intended to be an answer to the Extension Question, but if it isn't then what is it meant to be? It certainly isn't an *analysis* of essential properties, and it clearly isn't a rejection of essentialist questions (since part of the

position is that there are 'genuinely essential properties'). The only way to make sense of minimalist essentialism is as an extension answer – unfortunately, a fundamentally vacuous one. This entails that minimalist essentialism is to be rejected; it is, until Mackie offers some specification about what its essential commitments are, empty.

Conclusions regarding Mackie's minimalist essentialism

This brings us to the end of the discussion concerning Mackie's minimalist essentialism. I have argued that there are strong reasons to doubt that the argument for minimalist essentialism succeeds: first because the argument for the superiority of extreme haecceitism over substantial essentialism is dubious, and second because the argument for the rejection of extreme haecceitism doesn't work. And, even if the argument succeeded - which, given these worries, is a big 'if' – and minimalist essentialism were preferable to both substantial essentialism and extreme haecceitism, saying so would not bring us any closer to specifying the extension of essential properties. This is because minimalist essentialism does not confirm or deny the essentiality of *any* properties. We know that it takes as essential some properties, though we know not which. For these reasons, we must reject Mackie's minimalist essentialism.

Conclusions

This brings us to the end of our study of essential properties. It has had mixed results. First, I successfully answered the Analysis Question. This was through a series of arguments, initiated by noting the modal analysis, in the form of Quine's use of it in his objection to quantified modal logic. This modal analysis fit well with our pre-theoretic understanding of essential properties, but more justification was needed if we were to accept it.

With an eye towards providing the required motivation, I then offered an argument by elimination: taking the eight possible ways that modality and essentiality might be related, I presented reasons for rejecting the six that didn't entail the modal analysis. Part of this argument by elimination included attacking E.J. Lowe and Kit Fine's Fundamentalist understandings of essence, according to which modality is analysed in terms of essentiality. This position was shown to be fatally flawed (in several different ways).

Having secured the modal analysis, I then began to flesh it out. I argued that the best version of it was an existence dependent formulation. Dealing with a potential rival in the form of the identity-dependent analysis, and a minor, misguided objection (McLeod's objection to weak necessity), everything seemed grand. I then presented Fine's objection to the modal analysis, which threatened to completely undermine the whole exercise by proving that there are properties an object has *de re* necessarily but not essentially. If Fine was right, the modal analysis was fundamentally flawed.

Thankfully, there is a solution: my own sparse modalism can handle Fine's objection by making the properties Fine is worried about not eligible for essentiality due to their not being sparse properties. Knocking out Fine, I had my answer to the Analysis Question: an essential property of an object x is a sparse property that x has in every world in which x exists.

Unfortunately, this success in the first Part did not translate into success in the second. Here I tried to answer the Extension Question by examining specific attempts to offer

classes of essential properties. First I looked at sortal essentialism as argued for by Wiggins. Wading through his theory of individuation, I attempted to find some argument for the essentiality of sortal properties. Sadly, none were forthcoming. The only way to get sortal essentialism from Wiggins's theory was to build it in from the start.

So, moving on from sortal essentialism, I turned to origin essentialism. Here I examined four arguments, starting with Kripke's 'proof'. This was found to not entail origin essentialism, and so had to be rejected. Shifting to Salmon's sufficiency argument, the argument slowly evolved until it faced a pair of objections from Robertson. I then demonstrated how Damnjanovic's argument entailed that there was no way for Salmon to respond to one of Robertson's objections; no matter what changes to the sufficiency principle Salmon might make, his argument is always either going to be susceptible to a recycling case or over-generate undesirable essentialisms. For this reason, Salmon's arguments must be rejected.

This led to Forbes' four worlds argument. This faced a trio of objections: first, the sense of 'intrinsic' that Forbes' principle (II) relies upon is unclear, potentially undermining the whole argument. Second, the bias problem showed how Forbes' argument was compatible with several mutually exclusive essentialisms. As such, the argument doesn't support origin essentialism. Third, the argument is either susceptible to another recycling case or it entails order essentialism. The recycling case proves origin accidentialism, and the entailment of order essentialism is about as unattractive a conclusion as you can get. Consequently, Forbes' argument also was rejected.

Finally, I turned to Rohrbaugh and deRosset's independence principle argument. Here, the necessity of the locality of prevention entailed an independence principle, according to which an act of constructing a table out of a particular hunk of matter is compossible with a distinct act of constructing a different table from a non-overlapping hunk of matter. This, when linked with a recombination principle, generates an argument for origin essentialism. However, it was objected (by both Cameron and Rocca and Robertson and Forbes) that there

was no legitimate way to go from principles regarding the locality of prevention to independence principles; either a sufficiency principle was being snuck in, or somewhere along the line Rohrbaugh and deRosset were begging the question.

In an attempt to respond to these objections, Rohrbaugh and deRosset altered their locality of prevention principle. However, I argued that this new locality of prevention principle doesn't work either, for it (a) begs the question against the origin accidentialist, (b) faces the bias problem, and (c) is a sufficiency principle. As such, the independence principle argument also fails to prove origin essentialism.

At this point, with four different arguments for the position having failed, I admitted defeat and conceded that origin essentialism simply wasn't justifiable. Consequently, origin properties could not be part of our essential property extension.

Finally, having no luck with the two positive positions, I turned to Mackie's minimalist essentialism. To argue for minimalist essentialism, Mackie first argued for extreme haecceitism, then reined herself back in ever so slightly. The argument for extreme haecceitism relied first upon Lewis' burden of moderation argument, then upon the tenacious property story's capacity to provide essentialist results without the essential property price-tag. I argued that Lewis's argument didn't actually offer any support to extreme haecceitism, because it either entailed that there was a successful substantial essentialist story or showed how extreme haecceitism also had to bear the burden of moderation. Further, I attacked the tenacious property story, arguing that it succeed only by pulling a fast one and changing the meaning of essentialist expressions when it validated them.

The argument for the shift from extreme haecceitism to minimalist essentialism fared no better: however we understand Mackie's suggestion that 'a sensible version of extreme haecceitism should not be so dogmatic as to deny that there may be *some* kinds or categories that are essential kinds or categories' [2006: 166], it could not be made to support minimalist essentialism without begging the question against the extreme haecceitist.

The worst part is even if the argument had succeeded it wouldn't have mattered because minimalist essentialism is an empty notion: it does not have any clear essentialist commitments, so it simply does nothing when it comes to answering the Extension Question. Thus, as with the others, minimalist essentialism cannot be a part of our essential extension.

This leaves me in a strange position. I've an account of what essential properties are, but what I don't have is any properties that satisfy the account. While the answer to the Analysis Question has been successful, this isn't the case with the Extension Question. So where to go from here?

I think there are four distinct avenues for future research which stem naturally from the results of this study. The first and most obvious is to look at more essential extension arguments. Perhaps some other argument will be found which works. If so, we would then have part of an extension answer.

A second area of future research concerns applying the answer to the Analysis Question to the positions of those metaphysicians who put essential properties to such heavy usage; the aim here is to catch essential 'cheaters' – i.e. metaphysicians who are using essential properties in ways that they simply are incapable of being employed, or who are relying upon a misunderstanding of what essential properties are. This project of 'taking essence back' focuses heavily upon attacking the Neo-Aristotelian movement, which is based upon a Fundamentalist understanding of essential properties.[140]

The third avenue concerns the nature of my sparse modal analysis. This analysis depends upon the notion of sparse properties. In particular, one potentially major problem is the thought that the extension of sparse properties is such that everyday objects like Socrates are prevented from having any essential properties because the sparse properties simply aren't the kinds of properties Socrates has (this is similar to one of the objections to sparse modalism I dealt with in Chapter Five).

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[140] See Tahko [Forthcoming] for an example.

What this means is that a proper understanding of the sparse property analysis requires a better understanding of the nature of properties themselves. In particular, once we know what sparse properties there are, then we will be in a better position to fully understand the consequences of the sparse modal analysis. There is likely a knock-on benefit to this research: knowing what sparse properties there are would go a long way towards helping us answer the Extension Question. For any proposed essentialist extension that doesn't rely upon a sparse property could be rejected out of hand. In this way, looking at the nature of properties and especially the nature of sparse properties looks like an important continuation of this research project.

Finally, back in Chapter One, I distinguished between *Objectual* and *Kind* essentialism, and stated that I would be entirely focused upon Objectual essentialism. With the results regarding the Analysis Question, it would be fruitful to see how the sparse modal analysis applies to Kinds. One worry is that the sparse modal analysis might not apply to Kinds, either because they are not the sort of entity that has sparse properties or because they cannot satisfy the modal criteria. An interesting off-shoot of this is applying the sparse property analysis to the essences of properties themselves. Clearly, properties will satisfy an entirely different sort of modal criteria than objects. Does this entail that we must have two different analyses of essential properties, one for the properties of objects and another for the properties of properties? These are questions that must be answered if we are to have an understanding of essentiality. That they might are related to the results of this investigation make them all the more interesting. At the end of the day, I can merely agree with the following sentiment:

> I see no reason, then, for thinking essentialism unintelligible. At the same time, I do not mean to suggest that it is without its perplexities. …The existence of [difficult] cases, even in such large number, does not show that there simply is no distinction between essential and accidental attributes of an object. But it does show that the distinction is a great deal less clear than essentialists are wont to suppose. [Cartwright 1968: 626]

Bibliography

Adams, R. 1979. 'Primitive thisness and primitive identity,' *Journal of Philosophy*, 76: 5-26.

Almog, J. 1991. 'The what and the how,' *Journal of Philosophy,* 88: 225-44.
- 1996. 'The what and the how II: reals and mights,' *Noûs,* 30: 413-433.

Aquinas, St. T. 1252 /1997 'De Ente et Essentia,' translated by Miller, R.T., available at http://www.fordham.edu/halsall/basis/aquinas-esse.html#f1

Armstrong, D. 1978. *A Theory of Universals*. Cambridge: Cambridge University Press.
- 1983. *What Is a Law of Nature?* Cambridge: Cambridge Univ. Press.
- 1986. 'The nature of possibility,' *Canadian Journal of Philosophy*, 16: 575-94.
- 1989. *A Combinatorial Theory of Possibility*. Cambridge: Cambridge University Press.
- 1997. *A World of States of Affairs*. Cambridge: Cambridge University Press.
- 2004. *Truth and Truthmakers*. Cambridge: Cambridge University Press.

Ayer, A. 1973. The Central Questions of Philosophy. London: Weidenfeld.

Barnett, D. 2005. 'The problem of material origins,' *Nous*, 39: 529-40.

Bigelow, J. 1988. 'Real possibilities,' *Philosophical Studies*, 53: 37-64.

Bigelow, J. & Pargetter, R. 1990. 'Quantities,' *Philosophical Studies*, 54: 287-304.

Bird, A. 2007. *Nature's Metaphysics: laws and properties*. Oxford: Oxford University Press.

Black, M. 1971. 'The elusiveness of sets,' *Review of Metaphysics,* 24: 614–36.

Blackburn, S. 1987. 'Morals and modals,' in Wright, C. & Macdonald, G. eds, *Fact, Science, and Value*. Oxford: Blackwell.

Boolos, G. 1971. 'The iterative conception of set,' *Journal of Philosophy,* 68: 215-231.
- 1989. 'Iteration again,' *Philosophical Topics*, 42:5-21.

Bottani, A., Giaretta, P. and Carrara, M., eds. 2002. *Individuals, Essence and Identity,*

Themes of Analytic Metaphysics. Dordrecht, Holland: Reidel.

Brody, B. 1973. 'Why settle for anything less than good old-fashioned Aristotelian essentialism,' *Noûs*, 7: 351-365.
- 1980. *Identity and Essence.* Princeton: Princeton University Press.

Burgess, J. & Rosen, G. 1997. *A Subject with no Object.* Oxford: Oxford University Press.

Cameron, R. 2005. 'A note on Kripke's footnote 56 argument for the essentiality of origin,' *Ratio*, 18: 262-75.
- 2008. 'Truthmakers and ontological commitment: or how to deal with complex objects and mathematical ontology without getting into trouble,' *Philosophical Review*, 140: 1-18.
- 2010. 'The grounds of necessity,' *Philosophy Compass*, 5: 348-58.

Cameron, R. & Roca, S. 2006. 'Rohbraugh and deRosset on the necessity of origin,' *Mind*, 115: 361-66.

Campbell, K. 1990. *Abstract Particulars.* Oxford: Blackwell.

Cantor, G. 1932: *Gesammelte Abhandlungen mathematischen und philosophischen Inhalts*, Zermelo, E. ed. Berlin: Springer.

Cartwright, R. 1968. 'Some remarks on essentialism,' *Journal of Philosophy*, 65: 615-26.

Catterson, T.T. 2008. 'Reducing reductionism: on a putative proof for extreme haecceitism,' *Philosophical Studies*, 140: 149-59.

Chandler, H. 1976. 'Plantinga and the contingently possible,' *Analysis*, 36: 106-9.

Chisholm, R. 1967. 'Identity through possible worlds: some questions,' *Noûs*, 1; 1-8.
- 1973. 'Parts as essential to their wholes,' *Review of Metaphysics*, 26: 581-603.

Correia, F. 2005. *Existential Dependence and Cognate Notions.* Munich: Philosophia Verlag.
- 2007. '(Finean) essence and (Priorean) modality,' *Dialectica*, 61: 63-84.
- MS. 'On the reduction of necessity to essence,' available at http://www.philosophie.ch/fabrice/Papers/Reduction.pdf

Damnjanovic, N. 2009. 'Sperm, eggs and hunks: biological origins and identity,' *Acta Analytica*, 24, 113–26.

-    2010. 'No route to material origin essentialism?' *Erkenntnis*, 72: 93-110.

Della Rocca, M. 1996. 'Essentialism: parts 1 & 2,' *Philosophical Books*, 37: 1-20; 81-9.

Dodd, J. 2008. 'Musical works: ontology and meta-ontology,' *Philosophy Compass,* 3: 1113-1134.

Dummett, M. 1973. Frege: Philosophy of Language. London: Gerald Duckworth.

Dunn, J.M. 1990. 'Relevant predication II: intrinsic properties and internal relations,' *Philosophical Studies*, 60: 177-206.

-    1990b. 'Relevant predication III: essential properties', in Dunn, J.M. and Gupta, A. eds., *Truth or Consequences: Essays in Honor of Nuel Belnap*, Dordrecht: Kluwer Academic Publishers, 77-95.

Efird, D. 2009. 'Is Timothy Williamson a necessary existent?' in Hale, B. and Hoffmann, A. eds. *Modality: Metaphysics, Logic, and Epistemology*. Oxford: Oxford University Press.

Efird, D. & Stoneham, T. 2005. 'The subtraction argument for metaphysical nihilism,' *The Journal of Philosophy*, 101: 303-25.

Ellis, B. 2001. *Scientific Essentialism*. Cambridge: Cambridge University Press.

-    2002. *The Philosophy of Nature: A Guide to the New Essentialism*. Chesham: Acumen.

Fales, E. 1993. 'Are causal laws contingent?' in Campbell, K., Bacon, J., & Reinhardt, L., eds, *Ontology, Causality, and Mind: Essays in Honour of D.M. Armstrong*. Cambridge: Cambridge University Press.

Fine, Kit. 1982. 'First-order modal theories III – Facts,' *Synthese,* 53:43-122.

-    1994. 'Essence and modality', *Philosophical Perspectives*, 8: 1-16.
-    1994b: 'Senses of essence', in: W. Sinnott-Armstrong (ed.), *Modality, Morality, and Belief.* Cambridge University Press: New York, 53-73.
-    1995. 'The logic of essence,' *Journal of Philosophical Logic*, 24:241-73.
-    2002. 'The varieties of necessity', in Gendler, T.S. and Hawthorne, J. eds. *Conceivability and Possibility*. Oxford: Oxford University Press). Reprinted in Fine, K. *Modality and Tense*, Oxford: Clarendon Press.
-    2005. *Modality and Tense*. Oxford: Clarendon Press.
-    2005b. 'Necessity and non-existence,' in his 2005: 321-54.

Fiocco, M.O. 2010. 'Temporary intrinsic and relativization,' *Pacific Philosophical Quarterly* 91: 64-77.

Forbes, G. 1980. 'Origin and identity,' *Philosophical Studies*, 37: 353-63.
- 1981. 'On the philosophical basis of essentialist theories,' *Journal of Philosophical Logic*, 10: 73-99.
- 1985. *The Metaphysics of Modality*. Oxford: Clarendon Press.
- 1986. 'In defence of absolute essentialism,' *Midwest Studies in Philosophy*, 11: 3-31.
- 1994. 'A new riddle of existence,' *Philosophical Perspectives*, 8: 415-30.
- 1997. 'Essentialism,' in Hale, B. and Wright, C. eds. *A Companion to the Philosophy of Language*. Oxford: Blackwell.
- 2002. 'Origins and identities,' in Bottani, A., Giaretta, P. and Carrara, M. eds. *Individuals, Essence and Identity, Themes of Analytic Metaphysics*. Dordrecht, Holland: Reidel.

Forrest, P. 1986. 'Neither magic nor mereology: a reply to Lewis,' *Australasian Journal of Philosophy* 64 (1):89 – 91.

Frege, G. 1884/1974. *The Foundations of Arithmetic*, J. L. Austin (trans.), Oxford: Basil Blackwell.

French, P. Uehling Jr., T. and Wettstein, H, eds. 1986. *Midwest Studies in Philosophy, Vol. 11: Studies in Essentialism*. Minneapolis: University of Minnesota Press.

Geach, P. 1962. *Reference and Generality*. Ithaca: Cornell University Press.

Goff, P. 2010. 'Ghosts and sparse properties: why physicalists have more to fear from ghosts than zombies,' *Philosophy and Phenomenological Research,* 81:119-139.

Goodman, N. 1970. 'Seven strictures on similarity,' in Foster, L. & Swanson, J. eds. *Experience and Theory*. Amherst: University of Massachusetts Press, 19-29.

Gorman, M. 2005. 'The essential and the accidental,' *Ratio*, 18: 276-89.

Grossman, R. 1972. 'Russell's paradox and complex properties,' *Noûs,* 6:153-164

Hale, B. 1987. *Abstract Objects*. Oxford: Blackwell.
- 1996. 'Absolute necessities,' *Philosophical Perspectives* 10: 93-117

Hale, B. & Wright, C. 2001. *The Reason's Proper Study: Essays Towards a Neo-Fregean Philosophy of Mathematics*. Oxford: Oxford University Press.
- eds. 1997. *A Companion to the Philosophy of Language*. Oxford: Blackwell.

Haslanger, S. 1989. 'Persistence, change, and explanation,' *Philosophical Studies*, 56: 1-28.

Hawley, K. 2002. 'Vagueness and existence,' *Proceedings of the Aristotelian Society* 102: 124-40.

Hawthorne, J. & Szabo-Gendler, T. 2000. 'Origin essentialism: the arguments reconsidered,' *Mind*, 109: 285-98.

Heil, J. 2003. *From an Ontological Point of View*. Oxford: Oxford University Press.

Hirch, E. 1982. *The Concept of Identity*. Oxford: OUP.

Humberstone, L. 1996. 'Intrinsic/extrinsic,' *Synthese*, 108:205-67.

Jenkins, C. 2005. 'Realism and independence,' *American Philosophical Quarterly*, 42: 199-209.

Johnson, P. 1977. 'Origin and necessity,' *Philosophical Studies*, 32: 412-18.

Jubien, M. 1993. *Ontology, Modality, and the Fallacy of Reference*. Cambridge: Cambridge University Press.

Kaplan, D. 1971. 'Quantifying in,' Synthese, 19: 178-214.
- 1975. 'How to Russell a Frege-Church,' Journal of Philosophy, 72: 719-729.

Kirwan, C. 1970. 'How strong are the objections to essence?' *Proceedings of the Aristotelian Society* 71: 43-59.

Kraut, R. 2007. *Artworld Metaphysics*. Oxford: Oxford University Press.

Kripke, S. 1971. 'Identity and necessity,' in Munitz, M. ed. *Identity and Individuation*, New York: New York University Press.
- 1980. *Naming and Necessity*. 2nd edition. Oxford: Blackwell.

LaPorte, J. 1997. 'Essential membership,' *Philosophy of Science*, 64: 96-112.

Leibniz, G. 1686/1950. *Discourse on Metaphysics*. Translated by Loemker, L. Dordrecht:

D. Reidel

Lewis, D. 1968. 'Counterpart theory and quantified modal logic,' J*ournal of Philosophy*, 65: 113-26.

- 1973. *Counterfactuals*. Oxford: Blackwell.
- 1983. 'New work for a theory of universals', *Australasian Journal of Philosophy*, 61: 343-77.
- 1984. 'Putnam's paradox', *Australasian Journal of Philosophy*, 62: 221-36.
- 1986. *On the Plurality of Worlds*. Oxford: Blackwell.
- 1986b. 'Events', in his (1986c).
- 1986c. *Philosophical Papers: Volume II*. Oxford: Oxford University Press.
- 1986d. 'Against structural universals,' *Australasian Journal of Philosophy*, 64: 25-46.
- 1991. *Parts of Classes*. Oxford: Blackwell.
- 1993. 'Mathematics in megethology', *Philosophia Mathematica* 3: 3-23.
- 1996. 'Elusive knowledge,' *Australasian Journal of Philosophy*, 74: 549-67.
- 2002. 'Tensing the copula,' *Mind*, 111: 1-14.

Lowe, E.J. 1988. 'What is a criterion of identity?' *Philosophical Quarterly* 39: 1-21.

- 1989. *Kinds of Being: A Study of Individuation, Identity, and the Logic of Sortal Terms*. Oxford; Blackwell.
- 1995. *Locke on Human Understanding*. London: Routledge.
- 1998. *The Possibility of Metaphysics: Substance, Identity, and Time*. Oxford: Clarendon Press.
- 2006. *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*. Oxford: Oxford University Press.
- 2008. 'Two notions of being: entity and essence,' *Royal Institute of Philosophy Supplement* 83: 23-48.
- 2009. *More Kinds of Being: A Further Study of Individuation, Identity, and the Logic of Sortal Terms*. Wiley-Blackwell.

MacBride, F. 1999. 'Could Armstrong have been a universal?' *Mind*, 108: 471-501.

Mackie, J. 1974. 'De what re is de re modality?' *Journal of Philosophy*, 71: 551-61.

Mackie, P. 1987. 'Essence, origin, and bare identity,' *Mind*, 96: 173-201.

- 1998. 'Identity, time, and necessity,' *Proceedings of the Aristotelian Society*, 98: 59-78.
- 2002. 'Forbes on origins and identities,' in Bottani, A., Giaretta, P. and Carrara, M. eds. I*ndividuals, Essence and Identity, Themes of Analytic Metaphysics*. Dordrecht, Holland: Reidel.
- 2006. *How Things Might Have Been: Individuals, Kinds, and Essential Properties*. Oxford: Clarendon Press.

Marcus, R. B. 1967. 'Essentialism in modal logic,' *Noûs*, 1: 91-96, reprinted in her 1993, 45-51.

- 1971. 'Essential attribution,' *Journal of Philosophy*, 68:187-202, reprinted in her 1993, 53-70
- 1990. 'A backward look at Quine's animadversions on modality,' reprinted in her 1993, 215-232.
- 1993. *Modalities: philosophical essays*. Oxford: Oxford University Press.

McFetridge, I. 1990. 'Logical necessity: some issues,' in McFetridge, I, Haldane, J. & Scruton, R. eds. *Logical Necessity and Other Essays*. The Aristotelian Society, vol. 11.

McGinn, C. 1976. 'On the necessity of origin,' *Journal of Philosophy*, 73: 127-35.

McKay, T. 1975. 'Essentialism in quantified modal logic,' *Journal of Philosophical Logic*, 4: 423-38.

- 1986. 'Against constitutional sufficiency principles,' *Midwest Studies in Philosophy* 11: 295-304.

McLeod, S. 2008. 'How to reconcile essence with contingent existence,' *Ratio*, 21: 314-28.

McTaggart, J. 1927. *The Nature of Existence*, Volume I. Cambridge: Cambridge University Press.

Mellor, D.H. 1980. 'Necessities and universals in natural laws', in Mellor, D.H. ed. *Science, belief, and behaviour: essays in honour of R. B. Braithwaite*. Cambridge: Cambridge University Press.

- 1981. *Real Time*. Cambridge: Cambridge University Press.
- 1991. 'Causation and the direction of time,' *Erkenntnis 35:* 191-203.
- 1995. *The Facts of Causation*. London: Routledge.
- 1998. *Real Time II*. Routledge.

Moore, G.E. 1922. 'The conception of intrinsic value', in Moore, G.E. ed., *Philosophical Studies*, London: Routledge. 252-75.

Noonan, H. 1983. 'The necessity of origin,' *Mind*, 92: 1-20.

Oderberg, D. 2007. *Real Essentialism*. London: Routledge.

Oliver, A. 1996. 'The metaphysics of properties,' *Mind* 105: 1-80.

Oliver, A. & Smiley, T. 2006. 'What are sets and what are they for?' *Philosophical Perspectives,* 20:123–155.

Parsons, T. 1971. 'Essentialism and quantified modal logic,' reprinted in Linsky, L. ed, *Reference and Modality*, Oxford: Oxford University Press, 73-87.
- 1991. 'Tropes and supervenience,' *Philosophy and Phenomenological Research*, 51: 629-32.

Paul, L.A. 2004. 'The context of essence,' *Australasian Journal of Philosophy*, 82:170 – 184
- 2006. 'In defence of essentialism,' *Philosophical Perspectives*, 20: 333-73.

Plantinga, A. ed. 1968. *The Ontological Argument: From Saint Anselm to Contemporary Philosophers*. New York: Doubleday.
- 1974. *The Nature of Necessity*. Oxford: Clarendon Press.
- 1983. 'On existentialism,' *Philosophical Studies*, 44: 1-20.

Potter, M. 2004. *Set Theory and its Philosophy*. Oxford: Oxford University Press.

Putnam, H. 1970. 'Is semantics possible?' *Metaphilosophy,* 1: 187-201.
- 1973. 'Meaning and reference,' *Journal of Philosophy,* 70: 699-711.
- 1975. 'The meaning of 'meaning',' reprinted in *Mind, Language and Reality*, 215-271.

Quine, W.V.O. 1953. 'Three grades of modal involvement,' reprinted in his 1976.
- 1960. *Word and Object.* Cambridge, MA: MIT Press.
- 1961. 'Reference and modality', reprinted in his 1980.
- 1968. 'Ontological relativity,' *Journal of Philosophy,* 65: 185-212.
- 1969. *Ontological Relativity and Other Essays*. New York: Columbia University Press.
- 1972. Review of Munitz (ed.) *Identity and Individuation*, *The Journal of Philosophy*, 69: 488-497.
- 1976. *The Ways of Paradox*. Revised and Expanded. Cambridge, MA: Harvard University Press.
- 1980. *From a Logical Point of View*. 2nd Edition. Cambridge, MA: Harvard University Press.

Ramsey, F. 1925. 'Universals,' *Mind*, 34: 401-17.

Robertson, T. 1998. 'Possibilities and the arguments for origin essentialism,' *Mind*, 107: 729-49.

\-   2000. 'Essentialism: origin and order,' *Mind*, 109: 299-307.

Robertson, T. & Forbes, G. 2006. 'Does the new route reach its destination?' *Mind*, 115: 367-73.

Rodriguez-Pereyra, G. 2004. 'Modal realism and metaphysical nihilism,' *Mind*, 113: 683-704.

Rohrbaugh, G. & deRosset, L. 2004. 'A new route to the necessity of origin,', *Mind*, 113: 705-25.
\-   2006. 'Prevention, independence, and origin,' *Mind*, 115: 375-83.

Russell, B. 1903. *The Principles of Mathematics*. Cambridge: Cambridge University Press.

Salmon, N. 1979. 'How not to derive essentialism from the theory of reference,' *Journal of Philosophy*, 76: 703-725.
\-   1981. Reference and Essence. Princeton: Princeton University Press.
\-   1986. 'Modal paradox: parts and counterparts, points and counterpoints,' *Midwest Studies in Philosophy*, 11: 75-120.
\-   1989. 'The logic of what might have been,' *The Philosophical Review*, 98: 3-34.
\-   1996. 'Trans-world identification and stipulation,' *Philosophical Studies,* 84: 203-23.

Schaffer, J. 2009. 'On what grounds what,' in Manley, D., Chalmers, D., and Wasserman, R. eds. *Metametaphysics: New Essays on the Foundations of Ontology*. Oxford: Oxford University Press, 347-382.

Shalkowski, S. 1994. 'The ontological ground of alethic modality,' *Philosophical Review*, 103: 669-88.
\-   2008. 'Essence and being,' *Royal Institute of Philosophy Supplements* 83: 49-63.

Sharvy, R. 1983. 'Individuation, essence, and plentitude,' *Philosophical Studies,* 44: 61-70.

Shoemaker, S. 1980. 'Causality and properties,' in van Inwagen, P. ed., *Time and Cause*. Dordrecht: D. Reidel, 109-35.
\-   1997. 'Self and substance,' *Philosophical Perspectives,* 11: 283-319.
\-   1998. 'Causal and metaphysical necessity,' *Pacific Philosophical Quarterly*, 79: 59-77.

Sidelle, A. 2002. 'On the metaphysical contingency of the laws of nature,' in Gendler, T.S. and Hawthorne, J. eds. *Conceivability and Possibility*.

Simons, P. 2010. 'Relations and truthmaking,' *Aristotelian Society Supplementary Volume,* 84:199-213.

Skow. 2008. 'Haecceitism, anti-haecceitism, and possible worlds,' *Philosophical Quarterly*, 58: 98-107.

Skyrms, B. 1981. 'Tractarian nominalism,' *Philosophical Studies*, 40: 199-206.

Spelke, E. 1990. 'Principles of object perception,' *Cognitive Science,* 14: 29–56.

Stalnaker, R. 1979. 'Anti-essentialism,' *Midwest Studies in Philosophy*, 4: 343-55.

Tahko, T. *Forthcoming* (2011). *Contemporary Aristotelian Metaphysics.* Cambridge: Cambridge University Press.

Taylor, B. 1993. 'On natural properties in metaphysics,' *Mind,* 102: 81-100.

Van Cleve, J. 1985. 'Why a set contains its members essentially,' *Noûs,* 19: 585-602.

Wasserman, R. 2003. 'The argument from temporary intrinsics,' *Australasian Journal of Philosophy*, 81: 413-9.

Wetzel, L. 2000. 'Is Socrates essentially a man?' *Philosophical Studies*, 98: 202-20.

Whitehead, A. 1929. *Process and Reality.* New York: Macmillan.

Wiggins, D. 1967. *Identity and Spatio-Temporal Continuity.* Oxford: Blackwell.
- 1976. 'The de re "must": a note on the logical form of essentialist claims', in Evans, G. and McDowell, J. eds. *Truth and Meaning: Essays in Semantics*. Oxford: Oxford University Press.
- 1980. *Sameness and Substance*. Oxford: Oxford University Press.
- 1997. 'Sortal concepts: a reply to Xu,' *Mind and Language,* 12: 413–421.
- 2001. *Sameness and Substance Renewed*. Cambridge: Cambridge University Press.

Williamson, T. 2002. 'Necessary existents', in O'Hear, A. ed. *Logic, Thought, and Language*. Cambridge: Cambridge University Press.

Woods, J. 1971. 'Essentialism, self-identity, and quantifying in,' in Munitz, M, ed. *Identity and Individuation*, New York: New York University Press.

Wright, C. 1983. *Frege's Conception of Numbers as Objects*. Aberdeen: Aberdeen

University Press.

Xu, F. 1997. 'From Lot's wife to a pillar of salt: Evidence that *physical object* is a sortal concept,' *Mind & Language* 12: 365–392.

- 2005. 'Categories, kinds, and object individuation in infancy'. In Gershkoff-Stowe, L. and Rakison, D. (eds.), *Building Object categories in developmental time,* New Jersey: Lawrence Erlbaum, 63-89.

- 2007. 'Sortal concepts, object individuation, and language,' *Trends in Cognitive Sciences,* 11: 400-406.

Yablo, S. 1988. 'Review of The Metaphysics of Modality,' *Journal of Philosophy*, 85: 329-37.

Zalta, E. 1983. *Abstract Objects: an introduction to axiomatic metaphysics.* Dordrecht: D. Reidel.