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Properties and Powers

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Declaration

This is my own work and has not been in part or whole submitted for another degree.

Summary

This thesis concerns the relation between the fundamental properties and the powers they confer. The views considered are introduced in terms of their acceptance or rejection of the *quiddistic thesis*. Essentially the quiddistic thesis claims that properties confer the powers they do neither necessarily nor sufficiently. *Quidditism* is the view that accepts the quiddistic thesis. The other two views to be considered, *the pure powers view* and *the grounded view* reject the quiddistic thesis. The pure powers view supports its denial of the quiddistic thesis with the claim that properties *consist in* conferring the powers they do; the possession of a property just is the possession of a power. The grounded view, the positive view of this thesis, rejects the idea that properties are constituted by conferring the causal powers they do. Rather on the grounded view, it is the natures of the fundamental properties that metaphysically explain why they confer the powers they do.

Introduction

What is the relationship between the fundamental properties and the causal powers they confer? This is the central question of this thesis. This short introduction is split into two parts. The first will outline this central question in a little more detail and include a short introduction to the concepts involved. The second part of this introduction will provide an outline of the thesis and a summary of the central arguments of the coming chapters.

Three views will be considered: quidditism, the pure powers view and the grounded view. It is the claim of this thesis that of the views to be discussed, the grounded view presents the best account of the relationship between properties and powers. The other two views will not be found to be untenable; rather the grounded view is offered as an attractive alternative following the discussion of the other two views.

1

What is the relationship between the fundamental properties and the causal powers they confer? This question will be approached by considering the acceptance or rejection of the following thesis, which will be called the quiddistic thesis (QT):

QT: QT1: For each fundamental property, P , there is a world, W , distinct from the actual world and such that P confers different causal powers in W than it does in the actual world. QT2: For each fundamental property P

there exists a world that contains *P* and a distinct property *Q* such that *P* and *Q* confer the very same causal power(s).¹

QT is the conjunction of two theses: QT1 and QT2. QT1 is, basically, the denial that properties confer the powers they do of necessity. This is because it states that for each fundamental property there is a possible world in which it confers different powers than it actually does. QT2 is, basically, the denial that the causal powers a property actually confers are sufficient for its identity. They are not sufficient since there is a world in which another property also confers the same power(s).

The views that will be discussed in what follows can be divided into quiddistic and anti-quiddistic views depending on whether they accept or reject QT. As will be seen there is more to the question at hand than acceptance or rejection of QT; however, the QT provides a helpful way to approach the topic.

It has been said that this thesis is concerned with the relationship between the *fundamental* properties and the causal powers they confer. A little can now be said about what this means and why it is the fundamental properties that are in question.

¹ This relatively simple formulation of the thesis may need refinement on some views of properties and powers. For instance, say one thought that what powers a property conferred depended on relations held between universals, and also that a universal only existed at a world if it was instantiated at some point. On this view there may be a world in which a property, *P*, confers different powers than it actually does merely because a contingent event never took place that in the actual world brings about the instantiation of some very rare property. Since in this non-actual world the rare property is never instantiated, on the view in question it does not exist at this world. Since it doesn't exist *P* cannot be related to it as it is in the actual world, and so *P*, on the view under consideration, seemingly confers different powers than it does in the actual world. It would be possible to re-formulate QT to compare worlds that contain all and only all the same properties to avoid such an anomalous result. I say anomalous since in the situation just described I think the intuition ought to be that *P* in the non-actual world doesn't *really* confer different powers (since, for instance, had the contingent even occurred, then the rare property would have been instantiated). I hope in what follows what is really at issue becomes apparent and that the simple formulation of QT is fit for purpose.

1.1

The domain of properties in question is the domain of fundamental properties. Fundamental properties are just those properties whose instantiation requires or admits of no explanation, in a particular sense, in terms of the instantiation of further properties. Examples of this particular sense are reductive explanations and supervenience explanations of the instantiation of non-fundamental properties. In the first case, the instantiation of one property is explained away as being nothing but the instantiation of some other properties. In the second case, explanation of the instantiation of the supervenient property is attempted by pointing to a modal relation between its instantiation and the instantiation of further properties. There are very likely other examples of this form of explanation. The idea is that fundamental properties are not instantiated *in virtue* of the instantiation of further properties.²

This definition, such as it is, is only very crude. The aim is to point to the concept of the fundamental properties that will be in use throughout the thesis. We might also achieve this (quasi-) extensionally, by saying that the fundamental properties are those properties that would appear in a ‘completed’ physics. The *purpose* of restricting ourselves to the fundamental properties will hopefully become apparent at points throughout what follows. The primary reason is to avoid considerations that miss the heart of the central question.

² Where the ‘in virtue’ here is the kind that would be applicable in the cases of reductive and supervenient accounts of non-fundamental properties. So for instance it is specifically not a causal ‘in virtue’. A fundamental particle (say) may well have one fundamental property in virtue of having had another, for instance (i.e the having of the former causing the having of the latter).

For instance, consider some property that could have conferred different causal powers than it in fact does. Perhaps the reason that this is the case is because that property could have been realized, say, by a different set of ‘lower level’ properties and in virtue of being differently realized that property thereby conferred different powers. It is not so much that this is an uninteresting state of affairs but rather that in the first instance it raises questions about the relationship between realized properties and their realizers rather than the relationship between properties and the causal powers they confer. This is because the answer we have considered to why that property could have conferred different powers than it in fact does is, in the first instance, causal and not metaphysical³: The property could have conferred different causal powers that it in fact does since it could have been realized by a different set of properties, and these properties confer different causal powers.

There is surely much to be said about the relationship between the (or more) fundamental properties and other so-called higher-order properties. Of particular relevance is whether the outcome of the debate at hand affects this issue. However, this is not the topic of the thesis and will not be considered further. To reiterate, the reason for restricting discussion to the fundamental properties is to attempt to isolate the issue at hand, i.e. the metaphysical relation between properties and the causal powers they confer.

I will often just talk of ‘properties’ for ease of expression. Unless it is explicitly stated otherwise, I will mean throughout *fundamental properties*.

1.2

³ Of course, it is still metaphysical in the sense just mentioned – that is, as a metaphysical question about the relation between realized and realizing properties (to use one possible terminology).

Also of central importance to an understanding of QT is the notion of a causal power. It will be seen in what follows that exactly what a causal power is may differ depending on the view in question, though we can make some introductory remarks.

The notion of causal power that we should begin with is what I suggest is a relatively pre-theoretic notion. On such, causal powers are possessed by particulars, and to say that a particular has a particular causal power is to say that that particular will (ceteris paribus) behave in a certain way in certain circumstances. The relationship between powers and conditionals will be considered in chapter 2. Though as a starting point I think it should be agreed that as we normally understand things, to say of something that it has some power is in some sense to say something conditional about that thing.

This thesis begins then from the common assumption that properties confer causal powers on their bearers, where to say that that a particular has some causal power is to say at least that it will behave in a certain way in certain circumstances. So it is not in debate that properties confer causal powers, only the relation between the properties and the causal powers conferred.

§1.3

The only views to be considered in what follows are what we could call unified accounts, where a unified account is unified in so far as it has one position concerning all of the fundamental properties. So no view that takes something like QT to be true of some fundamental properties and false of others will be considered. Non-unified accounts do appear to exist in the literature. Brian Ellis' view presented in his *The Philosophy of Nature*

and elsewhere is perhaps one such account.⁴ George Molnar's account presented in his *Powers* is another. However, neither view, as I understand them, take something like QT to be varyingly true, since they hold that the laws of nature are necessary. I say they hold a non-unified account since they hold some properties to be 'powers' and others to be 'categorical'. As is will be seen in chapter 2 this is not an overly easy distinction to draw so exactly how their positions stand in relation to the arguments of this thesis is not immediately obvious. No arguments will be given against such accounts and their relation to the arguments of this thesis will not be considered and so in this respect they *prima facie* lie outside the scope of this thesis.

2

A summary of the main arguments of the following chapters will now be given. This will serve to introduce the positions that will be considered and to outline the structure of the thesis.

As said above, the views to be considered can be divided into two groups – quiddistic and anti-quiddistic views. Quidditism is the view that accepts QT. The two anti-quiddistic views to be considered, the pure powers view and the grounded view are not defined in terms of their denial of QT. Both views reject QT but as it will be seen they have a substantially different understanding of the relationship between properties and the causal powers they confer.

⁴ See also (Ellis and Lierse 1994).

2.1

Chapter 1 considers quidditism. Quidditism is the view that holds QT. Quidditism will be seen to fall quite naturally out of a metaphysical picture on which properties can be thought of as distinct entities with primitive trans-world identity and which holds to a combinatorial theory of possibility. Two such views, roughly representing the views of David Armstrong and David Lewis are briefly discussed in this regard. Crudely, for Lewis, since what powers a property confers depends on the contingent pattern of instantiation of properties in this and other worlds, what powers a property confers are neither necessary nor sufficient for its identity; hence QT. Crudely again, for Armstrong, what powers a property confers depends on the higher-order states of affairs consisting in the holding of necessitation relations among universals. Since these higher order states of affairs are contingent – universals might have been otherwise related to one another, what powers a property confers are neither necessary nor sufficient for its identity; hence QT.

After an introduction to the view and a consideration of the apparently counterintuitive consequences of quidditism, the bulk of this chapter is devoted to a consideration of an argument by David Lewis. In ‘Ramseyan Humility’ Lewis argues that quidditism leads to ‘humility’, where humility is the thesis that we are irredeemably ignorant of the intrinsic nature of the world. Very briefly, Lewis argues that since all of our evidence would be the same in some worlds in which different fundamental properties play the roles described in physical theory, we cannot know in the actual world which properties play which roles. Lewis’ argument is outlined and it is then argued that it possesses more force than it has been taken to have in the literature.

Two lines of criticism of Lewis’ argument from the literature are considered. The first of these will be called the reference-fixing response and holds roughly that the humility argument fails since we can know which properties play which roles; the *actual* players of the roles. However, Lewis’ conclusion will be shown to be a

natural extension of a restriction on what it takes to knowingly think/talk about entities that is imposed on subjects by the wider position often called two-dimensionalism. As such, the reference fixing response must appreciate that is at odds with this wider philosophical position. Consideration of the relation between Lewis' argument and two dimensionalism will also make clearer what exactly the ignorance involved in humility is supposed be.

The second response considered will be called the response from scepticism and it argues that the humility argument is just a species of external world scepticism and as such standard responses to scepticism can meet Lewis' argument (at least to whatever extent they meet standard sceptical arguments). It will be argued that the response from scepticism is misguided – the humility argument is not in fact a standard sceptical argument and so standard responses to scepticism are not applicable.

The primary conclusion of chapter 1 is that criticisms of Lewis' argument for humility have failed to fully appreciate the force of the argument. It is not claimed that quidditism must lead to humility, but it is hoped that by placing the argument in a wider context it is clearer what a rejection of the argument involves.

2.2

Chapter 2 presents the pure powers view and considers an argument against the view. The pure powers view rejects QT by rejecting both QT1 and QT2 – on the pure powers view properties confer the causal powers they do of necessity and conferring the causal powers they do is sufficient for their identity. What is distinctive of the pure powers view is that it holds the constitution thesis. The constitution thesis is the thesis that properties are constituted by conferring the causal powers they do, and so for a particular to possess a property just is for it

to possess a power/powers. What is seemingly attractive about the pure powers view is that the constitution thesis provides a prima facie account of why QT is false. If it is constitutive of a property that it confer the powers it does then this explains why a property could not have conferred different powers and why no other property could have conferred the same powers.

But what are powers? It was said above that our intuitive notion of power takes it at the very least to be such that to say a particular has some power is to predicate something conditional of it – it is to say something about how that thing will or might behave. However, it will be seen that extant pure powers views wish for the possession of a power by a particular to be a more substantial state of affairs than the mere obtaining of a counterfactual conditional. For the pure powers view powers are perfectly real, perfectly ‘actual’. The task for the pure powers view then becomes providing an account of ‘powers’, and in particular in providing an account of powers that distinguishes them from the properties of other views. Without this the constitution thesis ceases to be a substantial thesis, and, importantly, ceases to provide an account of why QT is false.

The suggested interpretation of the pure powers view, drawing on the view argued for by Alexander Bird in his *Nature's Metaphysics* is then as follows. To say that properties are constituted by their conferring the causal powers they do is to say that properties are constituted by the relations they stand in to the other properties, where it is these relations that determine how their instances interact. A helpful way of understanding the view is in comparison with Armstrong's view of the laws of nature (Armstrong 1983). Armstrong holds that certain necessitation relations hold among universals such that the holding of these relations necessitates the behaviour of their instances. For a simplified example: if the necessitation relation holds between universals F and G, this necessitates that all instances of F are instances of G. For Armstrong it is the obtaining of these relations among universals that determines what powers their instances posses. The pure powers view as it is to be understood here holds that rather than these relations being contingent relations among the properties, standing in the

relations they do to one another is *constitutive* of the properties. *What it is* to be some property is to stand in the relations it does to other properties.

This interpretation of the pure powers view is shown to be consistent with extant views and meets the challenge of substantiating the constitution claim. Additionally it also meets the important challenge of proving for an account of why QT is false. If to be a particular property is just to stand in the relations it does to other properties where these relations determine the behaviour of the instances of the properties, then it follows that both QT1 and QT2 are false: A property could not have conferred different powers since this would require standing in different relations to other properties and a property could not have stood in different relations since standing in the relations it does is constitutive of it. So QT1 is false. And for any property, a distinct property could not have conferred the causal powers it does since to do this it would have to stand in the very same relations to other properties and thereby, ex hypothesi, would not be a distinct property. So QT2 is false.

It will then be argued that the pure powers view thus understood is open to an argument that will be called the *regress of identity*. Since properties are constituted by their standing in the relations they do to one another, the identity of any property is seemingly dependent on the identity of the properties it is related to. Yet since the same is true for these other properties – they are dependent on further properties for their identity – it is argued that no property can get its identity fixed. This argument is identified by Bird and in the form just sketched is attributed to E.J Lowe, among others. Bird argues that the pure powers theory can respond to this challenge. Bird draws upon graph theory to show that the members of a set of entities can be individuated by the relations that hold between them, and argues that this is what is required in the property case.

However, it is argued that in cases in which the identity of all of the members of some set of entities is relationally determined there are in fact two distinct worries about individuation that emerge. There is the identity regress argument sketched above and then there is a distinct problem that I will call the identical essences argument. The identical essences argument claims that if, ex hypothesi, the identity of some entities is to be determined by relational facts, for any two such entities if the relational facts supposed to determine their identity are identical then they are identical, i.e. not genuinely distinct. Through a series of simple cases it is hoped to be shown that these are in indeed two distinct problems. It is then argued that Bird's response drawing on graph theory is in fact a response to the identical essences problem and not to the identity regress argument he has identified.

If successful the argument of Chapter 2 shows that the identity regress argument is in want of a response from the pure powers view. It is suggested that the principle behind the identity regress argument has some intuitive force, however no independent support is given for this principle. That said, it is a claim of this thesis that since the grounded view, to be outlined in Chapter 3 does not face the identity regress argument it should, all things being equal, be preferred. It will additionally be claimed in Chapter 3 that all things are not equal; in fact, the grounded view is preferable to the pure powers view for other reasons also.

2.3

In Chapter 3 the grounded view, the positive view of this thesis, is outlined. The grounded view rejects QT by rejecting both QT1 and QT2, and it also rejects the constitution thesis: Properties confer the powers they do necessarily and, for any property, no other property could have conferred the powers it does – however,

properties are *not* constituted by conferring the causal powers they do; the possession of a property is not the possession of a power⁵.

Whilst this appears to represent a coherent set of claims, it is not a set of claims that appears to have received very prominent attention in the literature. John Heil and Charlie Martin have both articulated a position on which they claim that properties are at once both ‘categorical’ and ‘dispositional’, yet it will be briefly shown that this is quite a different view from the grounded view. It will then be argued that there appears to be an assumption made by at least some philosophers in this area that any view that denies both QT1 and QT2 *must* accept the constitution thesis. This I call the constitution assumption. Consideration of the constitution assumption reveals that there appears to be at least two motivations behind it that correspond to the denial of QT1 and QT2. Firstly there is a worry about necessity: If it isn’t part of the *essence* of a property that it confers the powers it does, then what can account for the fact that it confers these powers of necessity? Secondly there is a worry about sufficiency: If there is anything else to the identity of a property besides conferring the powers it does then what could prevent two properties from conferring the same powers?

These motivations behind the constitution assumption are then taken to provide a challenge for any view that denies QT1 and QT2 and yet does not hold constitution thesis. The grounded view must then attempt to provide an account that can support its denial of QT1 and QT2. The thesis is this. *The intrinsic natures of properties metaphysically explain why they confer the causal powers they do.* By way of comparison with the other views discussed: On one version of quidditism, it is the contingent ‘necessitation’ relations among properties that determine how their instances will behave and so, therefore, what causal powers they confer.

⁵ Where ‘possession of a power’ is understood either as consisting in the mere obtaining of a conditional, or in the more robust sense adopted by the pure powers view.

On the pure powers view this picture is altered – these relations are no longer contingent since they are constitutive of the identities of the properties. On the grounded view, the picture is different again. These relations that hold among properties hold of necessity, yet they are not constitutive of the identity of the properties. Rather, it is the natures of the properties that determine how they are related. Specifically, the natures of the properties metaphysically explain why they are related as they are, and therefore it is the nature of a property that metaphysically explains why it confers the causal powers it does.⁶

It is the holding of this metaphysically explanatory relation between a property and the powers it confers that the grounded view wishes to use in support of its denial of QT. It is therefore necessary to say something substantial about this notion of a metaphysical explanatory relation that holds between properties and powers. After first comparing this notion to that of the notion of ontological dependence discussed by Kit Fine (1995) and Jonathon Lowe (1998) as an anti-symmetrical relation that cannot be characterised modally, it is argued that this relation is a relation with which we are very familiar. Specifically it is the relation that our ordinary understanding takes to hold between the properties encountered in perception of medium sized objects and the powers they confer. Our supposed familiarity with, or the obtaining of such a relation at the medium sized level is specifically is *not* supposed to represent an argument *for* this relation's obtaining at the fundamental level. Rather what its being provided is elucidation of a notion. It is the aim to show that this metaphysically explanatory relation invoked by the grounded view at the fundamental level is not some opaque, ad hoc relation crafted to suit the needs of a theory. Rather it is to be shown that the relation is not ad hoc, it is one we already take to hold between properties and the causal powers they confer and neither is it opaque – it is a relation that we already understand.

⁶ This way of comparing the views perhaps requires a particular view of properties on which it is relations among property types that determine the behaviour of the instances. Whilst it not to be discussed in this thesis, as far I can determine, the grounded view is compatible with the order of explanation being reversed; that is, the grounded view is *prima facie* compatible with a trope-style or universals-style view of properties. Whether the same is true of the pure powers view is not something that will be discussed here.

Now, it is to be pointed out that there are fundamental differences between our knowledge of such an explanatory relation on the one hand as encountered in perception and on the other being postulated to hold between entities named by physical theory. It seems that we can perhaps have a certain kind of knowledge of the relation between the properties of medium sized objects and the powers they confer that we can never have about the fundamental properties. It is perhaps somewhat perspicuous to us *why* roundness is related to rolling as it is (or so it may seem to us, at least). It will never, perhaps necessarily, be perspicuous to us why positive charge, say, is related as it is to the powers it confers. Yet it is to be argued that this presents no block to us understanding that the same relation holds at this fundamental level, despite the fact that we can have no *knowledge* of the *nature* of positive charge other than as whatever explains the causal powers that positive charge confers. Or at least this is the claim.

Finally in Chapter 3, how the holding of this explanatory relation between fundamental properties and the causal powers they confer provides support for the grounded view's denial of QT1 and QT2 is considered.

Chapter 1: Quidditism.

Introduction

In this chapter quidditism will be introduced. Quidditism is the view that accepts the Quiddistic Thesis (QT).

QT: QT1: For each fundamental property, P , there is a world, W , distinct from the actual world and such that P confers different causal powers in W than it does in the actual world. QT2: For each fundamental property P there exists a world that contains P and a distinct property Q such that P and Q confer the very same causal power(s).

Although the argument of this thesis is that an anti-quiddistic view, the grounded view, is the most plausible of the views considered, the purpose of this chapter is not to provide an argument against quidditism. Quidditism, as it will shortly be seen, has what some find to be implausible consequences. However, its proponents don't find them implausible - or else they find the alternatives more implausible - and no argument that quidditism is inconsistent seems forthcoming.

The purpose of this chapter is rather to consider and defend an argument of David Lewis' for an epistemological consequence of quidditism; namely that if quidditism is true then there is a sense in which we are irredeemably

ignorant of the intrinsic nature of the world. Whether humility of the sort Lewis' argument reaches would be an acceptable consequence of quidditism will not be considered here, though an attempt is made to make clear exactly what the epistemological position of humility *is*, as Lewis construes it.

The primary purpose of this chapter is to argue that Lewis' argument is stronger than has been supposed in the literature and in particular that its conclusion follows from quidditism together with a popular version of two dimensional semantics. Therefore one who holds to both must accept Lewis' conclusion of humility, and any rejection of Lewis' argument must appreciate that this has wider philosophical repercussions. Additionally it will be suggested that a principal argument for quidditism requires two dimensionalism and so Lewis' conclusion is of wider relevance than may initially be supposed.

1.

In section 2, two broad ways in which quidditism could be developed are briefly outlined. This will serve to clarify the view and to set it in a wider philosophical context. Whilst this will also serve to show that there are different possible versions of quidditism, the discussion of quidditism in this chapter and the next concerns quidditism in general; concerns, that is to say, any view that holds QT.

Quidditism has, it will be seen in section 3, some perhaps quite counterintuitive consequences. However, these provide, for quidditism's proponents at the very least, insufficient reason for rejecting the view. After quidditism has been introduced the remainder of this chapter will be spent on considerations raised by an argument presented by David Lewis, in 'Ramseyan Humility'. In 'Ramseyan Humility' Lewis argues that

quidditism leads to humility toward the intrinsic nature of the world. That is, if quidditism is true then there is a sense in which we must remain irredeemably ignorant of the fundamental properties.

Lewis accepts quidditism and he accepts the consequence of humility. However, where Lewis' argument has been considered in the philosophical literature it has been found wanting; quidditism, Lewis' critics argue, does not lead to humility. They argue this for what I identify as two reasons. The first I call the 'reference fixing response' and the second, the 'response from scepticism'. It is argued that the reference fixing response is not as straightforward as it has been assumed to be. It is argued that the response from scepticism fails.

Discussion of the reference fixing response reveals Lewis' argument to have in the background a much wider philosophical picture: what is often called two-dimensionalism. Two-dimensionalism purports to account for apparent cases of the necessary a posteriori and contingent a priori without countenancing any necessary a posteriori or contingent a priori truths. Through a relatively brief consideration of the two dimensionalist project it will be seen that the way Lewis reaches humility from quidditism is a standard feature of the two dimensionalist picture. The reference fixing response then must face the possibility of standing at odds with two dimensionalism. Whilst this may be a perfectly acceptable consequence for some philosophers, it should be made explicit.

Discussion of the reference fixing response provides some necessary background for considering the response from scepticism. It will be shown that the humility argument differs from a standard sceptical argument. Standard sceptical arguments work by highlighting possible ways in which certain target beliefs might actually be false, ways that the subject cannot rule out. However, the humility argument suggests not only that we

cannot know which properties confer which powers, but we cannot have *beliefs* about which properties confer which powers. If this is the case then there is nothing to be salvaged by a standard response to scepticism.

Further, if the response from scepticism looks to the reference fixing response for the relevant beliefs it becomes redundant. For any such beliefs we might have about which properties confer which causal powers could not, in actuality, be false – for they are about whatever actually confers any given power. Without beliefs that could for all one can tell be false, talk of scepticism is misplaced. Whether we *have* any such belief turns on the success of the reference fixing response.

Finally in, section 7, it will be briefly argued that a principle argument for quidditism requires two dimensionalism. As such, philosophers attracted to quidditism by this argument must take Lewis' argument and its conclusion seriously.

2. Quidditism.

In this section, quidditism will be considered in a little more detail. Quidditism is the view about the relationship between properties and the causal powers they confer that holds QT. However, quidditism is non-

committal in at least two respects. Firstly, it is open to differing views about the nature of properties.⁷ Secondly it is open to what exactly a causal power is and what a property's conferring of a causal power consists in. Two quiddistic views will now be briefly outlined. This will serve to help position quidditism in a wider philosophical framework. The remainder of the chapter will not turn on which version of quidditism one has in mind.

It is open for proponents of quidditism to take quite different views on what it is involved in a property conferring causal powers and so on what exactly differs between the actual world and worlds of the kinds suggested in QT. The details of any given account will most likely depend on what account the view has of the nature of properties (whether they are universals, tropes or classes of some kind, for instances) and the views' account of the laws of nature.

Appeal to an account of the laws of nature is important for quidditism since, given QT, the mere existence of whatever properties exist at a world does not entail that they confer any particular causal powers (since they confer different powers in different worlds). Something else is required in addition to the fact of which properties exist for it to be the case that the properties confer the causal powers they do.

David Lewis holds what is often referred to as a 'regularity' theory of the laws of nature. For Lewis, what make it the case that, at a world, a property confers a particular causal power just depends on where and when that property and other properties are instantiated. An alternative view is offered by David Armstrong, who takes

⁷ Though not I will assume as to their existence. Additionally, this formulation of QT is not compatible with 'properties' quantifying over 'particularized-properties' such as tropes, *if* these are taken to be world-bound entities. If on such a theory there are resemblance classes that are not world bound then 'properties' can quantify over them.

what we might think of as a more 'robust' picture of the laws of nature. For Armstrong the laws of nature are contingent relations among universals that govern the behaviour of their instances.⁸ On this picture, it is the relations among universals that can be seen as determining the causal powers conferred by a property.

Say, with Lewis, one thinks that the laws of nature at a particular world are just the best possible generalization of the overall pattern of instantiation of the properties (where 'best' for Lewis is an 'unexcelled combination of simplicity and strength').⁹ On this picture then one might take the laws to specify the causal powers conferred by a property.¹⁰ So, a property's conferring a particular causal power at a world depends just on its pattern of instantiation at that world. For a property to confer a different causal power in two worlds is just for its pattern of instantiation in the two worlds to be such that it figures in a different way in the best generalization of the overall pattern of instantiation of properties. A property's conferring a different causal power consists in nothing more substantial than the way its instantiation is best generalized.

This model of the laws of nature is perhaps clearer on considerations of what Lewis calls the thesis of 'Human supervenience'.

Humean supervenience is named in honour of the great denier of necessary connections. It is the doctrine that all there is to the world is a vast mosaic of particular matters of fact, just one little thing

⁸ See (Armstrong 1983)

⁹ See (Lewis 1986, p.xi). See also (Lewis 1973) and 'Postscript C: A Subjectivist's Guide to Objective Chance', in (Lewis 1986)

¹⁰ An alternative understanding of powers on Lewis' view might well take it to be the counterfactual conditionals the possession of properties entails. On such a view, what powers a property confers would depend on the pattern of instantiation of properties at both the actual and counterfactual worlds. On either construal, quidditism emerges. The picture on which powers a property confers is to be read off the laws of nature is described since it fits better with the talk of 'roles' played by properties used in the discussion of 'Ramseyan Humility' below.

and then another...We have geometry: a system of external relations of spatial temporal distance between points. Maybe points of spacetime itself, maybe point-sized bits of matter or aether or fields, maybe both. And at those points we have local qualities perfectly natural intrinsic properties which need nothing bigger than a point at which to be instantiated. For short: we have an arrangement of qualities. And that is all... All else supervenes on that. (Lewis 1986b, p.x)

The laws of nature for Lewis, supervene on the 'Humean mosaic' – a 'mosaic' formed by the instantiation of perfectly natural properties across space-time.¹¹ The laws of nature are just the best ('simplest and strongest') generalizations about this mosaic. It has just been said that a detailed quidditism will make reference to the laws of nature to account for what it is for a property to confer a causal power, since, given QT, the existence of properties does not entail that they confer any particular causal power. The answer Lewis' model of the laws gives us is that it is the pattern of instantiation of the properties that determines what causal powers properties confer. In one world the instantiation of properties across space-time makes up one mosaic for which one set of generalizations is best, and in another world the instantiation of properties makes up a mosaic for which a different set generalizations is best.

On the other hand, Armstrong exemplifies a philosopher with a more 'robust' picture of the laws of nature. Armstrong believes that regularity theories, such as Lewis', miss out an essential feature of laws that is not captured by any form generalization. Armstrong's contention is that the laws must somehow 'necessitate' or 'compel' and that this is missing from Lewis' picture.¹²

¹¹ For Lewis' account of natural properties see (Lewis 1983b).

¹² See (Armstrong 1983)

Armstrong holds that the laws of nature are the holding of irreducible relations between universals; specifically, a particular kind of necessitation relation the function of which is to compel, on the instantiation of one universal, the instantiation of another. So for instance 'N(F, G)' can be taken to symbolize the obtaining of the necessitation relation between the universals F and G and this higher-order state-of-affairs' obtaining necessitates that all F's are G's.¹³

So, on Armstrong's account, for the instantiation of a property to confer a particular causal power would be for it to be a universal that stood in the appropriate relations to other universals. On this model, quidditism's position that the instantiation of properties only confer causal powers contingently amounts to the claim that for any universal, it might not have been related to the universals it is actuality related to by the necessitation relation. So whilst the relation, N, between the universals F and G is a kind of 'necessitation' relation – in so far as it 'necessitates', given instances of F, instances of G – it does not itself hold with necessity.¹⁴ So, given the existence at a world of the properties F and G, the 'higher-order' state-of-affairs N(F, G), if it obtains, only obtains contingently. On this model then, the fact that a particular property confers a particular causal power consists in the property's contingent relations to other properties.

Motivation for holding quidditism is as I understand it, broadly Humean. How much of what would now be thought of as Humean views is to be found in Hume or to what extent such views are faithful to Hume's thinking is something I will not consider. 'Humean' as it is now used applies to views that deny necessary connections of various sorts – particularly causal connections. Somewhat crudely, the motivation for quidditism

¹³ Higher order in so far as it is a state-of-affairs composed of universals and no particulars.

¹⁴ I put 'necessitates' in inverted commas out of sympathy to Lewis' (1983b) observation (and of course argument) doubting the *necessitating* credentials of Armstrong's relation: 'But I say N deserves the name of necessitation only if, somehow, it really can enter into the requisite necessary connections. It can't enter into them just by bearing a name, any more than one can have mighty biceps just by being called 'Armstrong'.'

comes from the Humean intuition that anything could have followed from anything else, and that anything could coexist with anything else. Bread *might not* have nourished, fire *might not* have consumed.

Accordingly, both Lewis and Armstrong hold a ‘combinatorial’ theory of possibility. A combinatorial theory of possibility works by generating possibilities out of other possibilities. By taking some possible state of affairs (for instance the state of the actual world) and re-combining its distinct parts one creates a distinct possibility. In Lewis’ terms:

Possibility is governed by a combinatorial principle. We can take apart the distinct elements of a possibility and rearrange some or all of them. We can replace one element of a possibility with an element of another. When we do, since there is no necessary connection between distinct existences, the result will be a possibility. (Lewis, forthcoming).¹⁵

We can see how, on Lewis’ account of the laws of nature, this leads to the holding of QT. For Lewis, particular instances of properties are distinct elements so they are freely re-combinable. The actual pattern of instantiation of properties could then be rearranged so that this new possibility would be subject to different laws (i.e. different (simplest, strongest) generalizations would hold). Since the laws differ the causal powers conferred could differ. The simplest way to see this (and to anticipate Lewis’ argument for Humility below) is to imagine rearranging the actual ‘mosaic’ so that, for two properties, the locations of their instances are all swapped. On Lewis’ model, these two properties would then also swap the causal powers they conferred.

¹⁵ See Lewis (1986a), section 1.8. See also (Armstrong 1989).

Similarly for Armstrong, universals are constituents of higher order states that can be freely recombined to create new possibilities. So, as has already been said, the necessitation relations that obtain between universals, only obtain contingently.

Quidditism is the view about the relationship between properties and the powers they confer that holds QT. As is clear from the above, what exactly acceptance of QT amounts to will depend on one's other commitments. However, the consideration of quidditism in his chapter concern any view that endorses QT.

The first criticism to be considered is that quidditism has fairly immediate counter-intuitive consequences. Although it can be agreed that perhaps this is indeed the case, it will be suggested that it itself it is insufficient grounds for rejecting the view. Then, in section 4, an argument of Lewis' will be presented that purports to show that if quidditism is true then we must remain forever ignorant of the intrinsic nature of the world. Some replies and counter-replies to Lewis' argument will then be considered.

3. Argument from Implausibility

In his book, *Nature's Metaphysics*, Alexander Bird considers the apparently counter-intuitive consequences of quidditism and draws an analogy with the counter-intuitive consequences faced by haecceitism.

Chisholm (1967) finds haecceitism's consequences implausible. Haecceitism is the thesis that individuals have primitive trans-world identity. As Lewis (1986a) describes it, haecceitism is the view that two worlds can be qualitatively identical (throughout their history) yet differ in their de-re description.

In his thought experiment Chisholm imagines series of worlds in which Noah and Adam (of bible fame) exchange properties. In one world they exchange one property, in the next another, until we end with a world in which the Adam of that world has all of the properties of the Noah of this world and vice versa. These worlds would differ merely haecceistically, as we have defined it. So there are two qualitatively identical worlds that are allegedly distinct possibilities. This is the consequence that Chisholm finds unacceptable. As Chisholm sees it one is faced with a choice of either denying that individuals have transworld identity, or with taking individuals to have essential properties.

A parallel apparent dilemma for quidditism falls straight out of our statement of the position. Quidditism countenances worlds that differ merely quiddistically. For example we can consider the world in which two fundamental properties play reverse causal roles. One such world might be a world in which the property that actually plays the positive charge role and the property that plays the gravitational mass role, play the reverse roles (i.e. the two properties confer the opposite causal powers). Bird considers several such worlds and voices the following conclusion, in line with the parallel with Chisholm's judgment against haecceitism.

The world w_e is one where charge has all the causal or nomic roles associated with gravitational mass, including proportionality with inertial mass, while gravitational mass has the causal/nomic roles of charge. We can also describe a world w_f like the actual world except that the roles of gravitational mass and inertial mass have been swapped. Consequently we can also describe a world w_g like the actual world except that the roles of charge and inertial mass have been swapped.

The worlds w_e , w_f , and w_g are analogues for properties of Chisholm's final world with every property of Adam and Noah swapped. Just as Chisholm wants to say about Noah and Adam, if anything exists

which seems to fit our description of w_e , then it is just the actual world plus a decision to swap the names 'gravitational mass' and 'charge'; similarly if anything exists which seems to fit our description of w_g , then it is just the actual world plus a decision to swap the names 'inertial mass' and 'charge'...

Just as we should reject haecceitism we should reject quidditism, which we may do by allowing both particulars and properties to have essential properties. (Bird 2007, p.75)

The suggestion is then that quidditism takes as distinct possibilities, possibilities that are not in fact genuinely distinct -- and that therefore quidditism must be false.

I think it ought to be agreed that this is an all too quick an argument against quidditism. It is the position of the quidditism that these various worlds *do* present genuine possibilities. It seems an insufficient argument against quidditism to simply state that they are not genuine possibilities. Quidditism may admit that these are perhaps rather counterintuitive consequences of their view but hold that that is far from grounds for rejecting it. They will argue that that these are consequences of their combinatorialism for which they have independent motivation and argument.

This is not to say that unease with these consequences ought to be dismissed. However, in themselves they do not provide a decisive argument against quidditism. They may well encourage one to seek an anti-quiddistic view – two such views will be considered in the following two chapters.

The remainder of this chapter is an investigation into an argument of David Lewis' for the conclusion that quidditism leads to humility about the fundamental properties.

4. Ramseyan Humility

The remainder of this chapter concerns issues that arise on consideration of an argument of David Lewis' for the conclusion that quidditism leads to Humility about the intrinsic nature of the world; that is, to an irredeemable ignorance about the fundamental properties.

The consensus in the literature in which Lewis' argument has been discussed is that it doesn't work; quidditism doesn't lead to Humility. It will be argued that the matter is not as straightforward as it has perhaps been taken to be. It will be seen that Lewis' argument has as its background a wider philosophical position about what it takes to talk/think about entities in general and that, given quidditism, Humility towards the fundamental properties is a natural conclusion of this position. Responses to the Humility argument therefore must be conscious of the possibility of standing at odds with this wider position. This may of course be an unproblematic consequence for some, but it is a consequence that should be made explicit.

In 'Ramseyan Humility' Lewis puts forward an argument that has as its conclusion Humility toward the intrinsic fundamental properties of the world. In essence, Lewis argues that because properties could have played different roles than they do that we must remain ignorant of them.¹⁶ We are ignorant of them in the sense that we are unable to identify them – therefore in an important sense we can never know which property

¹⁶ In the following presentation I will ignore certain details of Lewis' argument. As well as the 'permutation' argument in which Lewis considers properties swapping roles, he considers the 'replacement' argument where worlds are considered where 'alien' properties take the place of some actual property. These differences are not important for the criticisms and considerations to be covered below.

we are talking/thinking about.¹⁷ For Lewis this follows because for each role a different property could have played that role and all our evidence is only evidence *that* the role is occupied (and not for what occupies it); therefore all our evidence is no evidence for which properties occupy which roles. The conclusion that we are unable to identify which property plays which role Lewis calls ‘humility’.

Lewis introduces the argument thus:

Quite generally, to the extent that we know of the properties of things only as role-occupants, we have not yet identified these properties. No amount of knowledge about what roles are occupied will tell us which properties occupy which roles. (Lewis forthcoming, p.2)

As I understand the argument, Ramsification provides the basis for the first claim – that we know of properties only as role-occupants (that is, as occupiers of roles described by physical theory). Quidditism, the view that roles can be variously occupied across worlds, provides Lewis’ reason for our failure to identify the properties that play the roles.

Lewis’ argument centres on, T, where T is the ‘true and complete final theory’. T is supposed then to be a complete physical theory and as such ‘ought to deliver a true and complete inventory of those fundamental properties that play an active role in the actual workings of nature’ (Lewis forthcoming, p.3).¹⁸

¹⁷ Exactly *what* sense will be hopefully emerge during the discussion of the reference fixing response.

¹⁸ This would exclude what Lewis terms ‘idlers’ from appearing in T. Idlers, if there are any, are fundamental properties that play no active role. In our terms we could say they have no dispositional character. These properties do not play a role in

As Lewis conceives of T, it contains two types of terms, T-terms and O-terms. For Lewis, ‘T’ and ‘O’ stand for ‘Theoretical’ and ‘Old’. ‘O-term’ is sometimes taken to stand for observational-term, where the ‘o-language’ is some kind of pure ‘observational language’. This is *not* what Lewis means by o-language it and he ‘doubt[s] there could be any such thing’ (Ibid, p.2). Instead ‘old-terms’ are terms from the ‘old-language’, where that is comprised of any terms not to be defined by T. So the old-language is just our ordinary language and the o-terms in T have just whatever meaning they have outside of T. The theoretical-terms in contrast are not terms whose meaning is independent of T. They are terms introduced by the theory and ‘implicitly defined’ by T. What is meant, I take it, by saying that a term is ‘implicitly defined’ is that such a term has its meaning given by its place in T¹⁹.

Beginning with T expressed as one sentence, all the theoretical terms can be replaced with variables and prefixed with existential quantifiers. This is the Ramsey sentence of T. The Ramsey sentence for T then says that there is some things such that they play the roles defined in T. That is, the roles by which T defines its T-terms. So where T says some fundamental property *P* plays such-or-such a role the Ramsey sentence of T says that there is *something* that plays this role.

We can now consider how Lewis takes quidditism to lead to Humility. In summary the argument goes as follows:

Lewis’ argument as it will be presented here and the possibility of the existence of such properties is not being considered in this thesis.

¹⁹ See Lewis ‘How to Define Theoretical Terms’ in Lewis 1986b for a detailed discussion of this point.

- 1) The fundamental properties are named by the implicitly defined T-terms of our best true physical theory, T.
- 2) Yet all our evidence for T is equally evidence for the Ramsey sentence of T.
- 3) According to Quidditism, the Ramsey sentence of T has multiple possible realizations.²⁰
- 4) Therefore, all of our evidence for T is not evidence for any particular realization of the Ramsey sentence of T.
- 5) Therefore, all our evidence for T is not evidence for any particular realization of T.
- 6) Therefore, we do not know which properties play which roles.

So Humility is the thesis that we must remain ignorant of which properties play which roles. We can know *that* some role is occupied but we cannot know *which* property occupies it. The details of this conclusion will become clearer after responses to the argument have been considered. Before considering these response the argument itself can be considered in a little more detail.

Premise (1) is the assumption that it is T that defines our terms used to refer to the fundamental properties – the importance of this will be considered shortly. Since we are assuming Quidditism then we must accept premise (3), that the Ramsey sentence of T has multiple possible realisations.

²⁰ For Lewis this is two premises. Firstly, Lewis combinatorialism principle– mentioned above – says that one is free to rearrange elements of one possibility in order to generate a new possibility. There are *some* restrictions on which of the possibilities generated are genuine. (Most notably for Lewis one cannot generate new possibilities by rearranging individuals whilst strictly preserving their identity, since Lewis denies that individuals exist in more than one world.) Secondly, quidditism is e premise that says the possibilities produced are genuine possibilities. However, the way we have defined quidditism this quidditism does the work of combinatorialism. Nothing hangs on this difference.

Premises (2), (4) and (5) are essentially consequences of premise (1). The terms in T that name the properties are implicitly defined by T. This is why all evidence for T is evidence for the Ramsey sentence of T and vice versa. The terms are introduced by the theory and name whatever satisfies the role given to them by the way they figure in T. This is unlike a situation in which we have a theory about the behaviour of some independently known (and named) entities. Consider a theory about the behaviour of a certain person, say. Evidence for the Ramsey sentence of this theory (where the name of the person is replaced by an existentially bound variable) need not be evidence for the theory; that *someone* satisfied the role described would be no evidence that the theory was true, since it is a theory about a particular person. So whilst it would be true that all evidence for the theory was also evidence for the Ramsey sentence of the theory, the converse would not be true.

Yet if the names in the theory are introduced by the theory as names of whatever plays some role, then that something is playing the roles specified *is* evidence for the theory. This is the case with T and the fundamental properties. Our only access to the fundamental properties, it would seem, is as whatever plays a particular theoretical role. Evidence that the Ramsey sentence of T is satisfied is therefore evidence that T is true.

Providing that one accepts (1), then given quidditism, opposition to Humility is focussed on the move from (5) to (6). So why does Lewis think (6) follows from (5)?

The broad idea is relatively straightforward: that all our evidence is only evidence that the roles are occupied and is not evidence for which of the multiple possible realizations is actual.

Suppose it [T] does have multiple possible realizations, but only one of them is the actual realization. Then no possible observation can tell us which one is actual, because whichever one is actual, the Ramsey sentence will be true. There is indeed a true contingent proposition about which of the possible realizations is actual, but we can never gain evidence for this proposition, and so can never know it. If there are multiple possible realizations, Humility follows. (Lewis forthcoming, p.5)

Since all our evidence is for the truth of a theory which would be made true by a number of possible realizations, we have no way of knowing which realization it is that in actuality makes our theory true – that is, no way of knowing which properties play which roles. For us to know which properties play which roles, is then to know that some proposition is true - the proposition (or set of propositions) about which properties play which roles. This proposition is only true at a subset of the worlds at which T is true, i.e this world and the other worlds with the same properties, same laws and where these same properties play the same roles. And we cannot know that *this* proposition is true, since our evidence is only evidence for the truth of T.

If we don't know which properties play which roles, we fail, Lewis claims, to have *identified* the properties. If we cannot identify the properties we can know nothing about them; this is Humility. How exactly we are to understand these final moves of the argument – from mere knowledge that roles are occupied to a failure to know which property occupies which role – will be considered in more detail below.

5. Responses to the Humility argument.

There are two main extant responses to the Humility argument that I will refer to as the reference fixing response and the response from scepticism. I am taking any response that claims that either we can know of the fundamental properties via a description that incorporates the indexical 'actual' (or anything to that effect) or via simply that an *actually* uniquely description is sufficient to think about the properties described, to be a reference fixing response. A response that claims that the problem posed by the Humility argument is just a form of external world scepticism -- in so far as it can be responded to by using traditional responses to external world scepticism -- is a response from scepticism. I will consider the reference fixing response first as this will lay some groundwork for the discussion of the response from scepticism.

5.1

The reference fixing response challenges the move from (5) to (6). Whilst it accepts that T has multiple possible realizations and so our evidence for T is only evidence *that* T is realized not for *how* it is realized, this response claims we can in fact know which properties play which roles. This knowledge is gained, not so much by evidence for *which* realization is actual, but by evidence *that* T is realized plus some kind of cognitive access to whatever it is that does realize T.²¹

That is, we have evidence for the 17th role in T being occupied by something. We can then think about whatever it is that occupies this role under the description, 'whatever uniquely occupies the 17th role'. We are then in a position to know various things about it – such as it plays the 17th role in T and that it was instantiated at a particular place a particular time, etc.

²¹ This response is discussed in (Whittle 2006), (Ney 2007, p.50) and (Bird 2007, p.78)

In 'Ramseyan Humility' Lewis considers this kind of response, and argues that it does not help. Lewis explains that whilst we can indeed express propositions that are about properties and what roles they occupy, we cannot do so knowingly – that is, we cannot know which proposition we are expressing; and this ignorance is supposed to be immune to the reference fixing move discussed above. According to Lewis, by using what we know about the roles, with the supposition that they are uniquely occupied, and with 'actually' as a rigidifier, we can succeed in expressing propositions that are indeed about the *properties* (i.e. not just the roles) and predicate of them that they play a particular role. We can say that 'the property that *actually* plays the 17th role, plays the 17th role'. Here 'actually' fixes the referent of the descriptive phrase on the actual referent of the description. So the proposition being considered is that proposition that is true only at worlds where the property that in *actuality* plays the 17th role, plays the 17th role.

However, and of the utmost importance for Lewis, we express this proposition, but *without knowing which proposition we have expressed*.

We know that 'it is the occupant of the 17th role expresses the true answer-proposition, but that is no help in knowing which one is true. We have fixed the reference blindly, not knowing which rigidified descriptions were rigid designators of which fundamental properties. (Lewis forthcoming, p.13)

Let us try and understand Lewis' claim here.

Very generally there is a sense in which the following must be held by Lewis: Take some description, *D*, that in actuality is uniquely satisfied by *a*. Then it is possible that a subject can have access to and understand *D*, know that *D* is uniquely satisfied and know that whatever satisfies *D* is *F*, without us being able to truly say of them that they know which thing is *F*.

Is this plausible? Can a subject know that *D* is *F* (where *D* has a unique satisfier and the subject knows this) without thereby knowing which thing is *F*? Certain intuitions about what it takes for a subject to 'know which' thing they are thinking about encourage a positive answer to this question that are *not* behind Lewis' argument. It is important to briefly distinguish these in order to put them aside. As it has been seen and will be discussed in more detail below, the ignorance in the Humility case is caused by our evidence being insufficient to rule out various possibilities. Considering the following example we can see that this is *not* what is behind alternative sources of worry about knowing which thing satisfies some description.

A detective has a uniquely identifying description of a criminal, *b*. This is a description that can develop, and one the detective has a version of from the get-go: 'the person who actually committed the crime'. Developed, this might become a much more detailed description. At a point the detective might be justifiably convinced that some physical description (call this *B*) is uniquely satisfied and satisfied by the same person who satisfies 'the person who actually committed the crime'. They can then say 'B is the person who actually committed the crime'. At this point, despite access to a uniquely satisfied description, we might still say, intuitively, that the detective didn't *know which* person committed the crime.

Is Lewis' case similar? The detective knows that 'the person that meets the description he has' is the person that committed the crime but, again intuitively, he doesn't *know which person this is*.

Yet whatever is missing in the case of the detective *cannot* be what is missing in the property case. We can see this by remembering what it is that causes the supposed difficulty in the property case -- the fact that T is multiply realizable. So if we suppose quidditism is false, then Lewis' problem ought to vanish. If T is not multiply realizable then we must then know which proposition we express with 'the property that plays the 17th role is the property that plays the 17th role'. Yet the same does not seem to be true in the detective case.

Suppose we assume that a parallel to denying quidditism in the detective case can be generated by supposing there are *no* non-actual possible worlds – the world could have only been one way. Then, since *b* is the criminal, then no one else could have been the criminal. Does this help out our detective? It seems not. There is still the intuition (to whatever extent there is originally) to say that the detective does not know which person committed the crime, because he does not 'know which' person meets his description B.

Lewis claims that when we try and fix the reference of our description, we do so 'blindly', 'not knowing what rigidified descriptions were rigid designators of which fundamental properties' (Lewis, forthcoming, p.13). It has been observed that the reason for blindness must be the multiple realizability of T. In the burglar case, this is not so. What causes our intuitions in the burglar case is perhaps a requirement on the detective to connect his description with some other domain. This may be to be somehow acquainted with the burglar as the burglar (ideally by catching him). But it needn't be this. If we suppose our detective was some kind of historian/detective attempting to solve some crime from the past, we might be satisfied if he can discover the name and address, say, of the satisfier of his description. Now one may take this to involve some kind of acquaintance relation but this is at least debatable.

We should not then think that the ignorance in the property case is the result of a need to connect some other domain with the description, in any straightforward sense. For Lewis it cannot be in general true that we need, in order to identify properties, to know of the occupier of the role as one of some special domain, as it might be thought to be in the burglar case. We *can* only know of the fundamental properties via the roles they play - this remains the same whether or not quidditism is true.

With the above in mind we can return to the discussion of the reference fixing response. Anne Whittle in 'On an Argument for Humility' takes what is at work in the humility argument to be the requirement imposed by Lewis that knowledge by description be via a description that has only one actual *or possible* satisfier. Whittle aims to show that this requirement is too strong. Whittle's argument will now be briefly outlined and with what I suggest is a repair can be thought to have some force. However, it will be seen to be inconclusive and a much more detailed look at what is behind Lewis' argument is required.

5.2

What is required then for us to identify entities? Beginning with Gareth Evans' formulation that "the subject must have a capacity to distinguish the object of his judgement from all other things" (Evans 1982, p90) and accepting that, on Lewis' account of fundamental properties, this identification isn't going to be perceptual in nature, Whittle looks for a descriptive form of identification. Since we are assuming that our Ramsey sentence has a *unique actual realization*, the description provided of the role of any particular property in this sentence ought to be enough to uniquely identify it.

Yet Lewis requires more than this, Whittle explains. He seems to require that we be able to distinguish the properties not only from all actual but also from all possible entities. Yet this is too strict a criterion, Whittle suggests. She argues the following.

As we have been supposing Quidditism, now suppose Haecceitism. As before, two worlds differ merely haecceitistically if they are qualitatively identical yet differ in their de re description. One such haecceitistic difference would be if the world had been qualitatively identical throughout its history yet I had been you and you had been me (I would have had all the properties, origins etc. that you have and you the ones I have). Haecceities are then supposed to capture what is essential to the identity of individuals that is independent of all qualitative facts.

Imagine a historian who knows a great deal about Napoleon, enough in fact to uniquely single him out. Since we are assuming Haecceitism there is a qualitatively identical possible world differing only in that Napoleon is Nelson and Nelson is Napoleon. Given Lewis' identity criterion this means that we cannot in the actual world identify Napoleon (or any other individual) by description (since our evidence would be the same if the 'Napoleon' role was being played by Nelson). Yet, even assuming Haecceitism, we can, intuitively, identify Napoleon and others by description; therefore Lewis' criterion for identity is too strict.

In assessing Whittle's argument we should note that counterexamples relying on haecceitism should be taken with a little caution. Given the comments of Chisholm and Bird above, it seems that at least some find the consequences of haecceitism just as implausible as they find the consequences of quidditism (and Lewis

explicitly rejects haecceitism²²). So it would be at least open for Lewis to admit that just as Quidditism leads to humility about the fundamental properties so haecceitism leads to humility about (at least) individuals that can only be known by description.

However, it does not seem necessary to assume haecceitism in order to provide the kind of supposed counterexample Whittle seeks. Intuitively we would think that the historian's description of Napoleon needn't be fully complete in order to allow the historian to identify Napoleon. For instance perhaps it was not known exactly on what day or exactly where Napoleon was born, or even who his parents were. If we have the intuition in the first place that the historian could identify Napoleon this ought not, intuitively and minus some particular theory, to change things.

It is quite plausible that, even supposing that haecceitism is *false*, it could have been another man and not *our* Napoleon, also called Napoleon, that went on to live a very similar life and would have equally satisfied the historian's description. This is because it seems plausible (as plausible at least as the initial example assuming haecceitism) that a uniquely satisfied description (that can be known to be uniquely satisfied) can omit reference to any properties sufficient for the identity of the satisfier. This then leaves open the possibility then that some other individual *could have* met the description, even if we assume the falsity of haecceitism.

We can then see Whittle's argument as showing that Lewis is implementing a restriction on what must be the case for someone to think about a thing (know *which thing* satisfies a description) such that he *prima facie* rules out a class of descriptive knowledge about individuals that plausibly he shouldn't. I say *prima facie* since Lewis

²² See (Lewis forthcoming) and (Lewis 1986a)

does not discuss knowledge of individuals in 'Ramseyan Humility' and it is at least plausible that there might be facts unique to particulars that allows us to know them by the above-descriptions.

As said above, Lewis considers and rejects the reference fixing response. Is it that Lewis has failed to notice that his criteria have the prima facie affects they do on our thoughts about particulars? In the following section it will be seen that there is very good reason for thinking that this is not the case. On the contrary, the mechanism by which thought about quiddistic properties is found to be impossible is the very same mechanism that has been developed with particulars often in mind.

6. Two Dimensionalism

It will now be argued that the general picture that Lewis is working with – that provides the background for claiming that the answer proposition is expressed, but not knowingly – is what is commonly known as two-dimensional semantics, or just two-dimensionalism.

This is how Lewis summarises it:

The real lesson of Saul Kripke's alleged examples of a posteriori necessity and a priori contingency in Naming and Necessity, is that when we have reference-fixing, we have two different ways for a sentence to express a proposition. It may happen that the proposition expressed one way is necessary

and knowable a priori but the proposition expressed the other way is contingent and knowable only a posteriori.

...The primary intension of S (Chalmers), or the diagonal proposition (Stalnaker), or the A-intension (Jackson) is the proposition that is true at just those worlds W such that S is true at W with respect to reference-fixing as it is at W. The secondary intension of S (Chalmers), or the horizontal proposition (Stalnaker), or the C-intension (Jackson), is the proposition that is true at just those worlds W such that S is true at W with respect to reference-fixing as it is in actuality. If, for instance, the reference of 'heat' is fixed on molecular motion at the actual world but on other things at other worlds, the primary intension of 'Heat is molecular motion' is contingent but the secondary intension is necessary; and vice versa for 'Heat is the occupant of the heat-role'.

So far, when I have spoken of the propositions expressed by the answer-sentences, I've meant the secondary intensions. If instead we took the primary intensions, it would be just as if we'd omitted the rigidifier 'actual'. As already noted, that would not be a way to ask the question we meant to ask. We would know the primary intensions of the answer-sentences, but these would not be the answer-propositions that identify the properties that occupy the roles. (Lewis forthcoming, fn31)

The two-dimensionalism of Stalnaker, Jackson and Chalmers, that Lewis appears to here endorse, purport to provide an explanation of Kripke's examples of apparently necessary a posteriori and contingent a priori truths, *without* countenancing any necessary a posteriori or contingent a priori truths. On their analysis, the apparent existence of such truths is an illusion of kinds. This illusion is caused by failing to notice that the sentences in

question (that apparently express these truths) in fact express *two* propositions – one necessary and a priori, one contingent and a posteriori.^{23 24}

The particular reasons for providing a response to such examples that does not require endorsing necessary a posteriori or contingent a priori propositions will not be considered here; what matters at present is how the responses are supposed to work.²⁵ In this section two dimensionalism will be introduced primarily in the context of its explanation of apparent cases of the necessary a posteriori. Following this, the two dimensionalist treatment of apparent cases of the contingent a priori will be considered. It is not essential in detailing the relevant aspects of the two-dimensionalist framework to refer to its treatment of the necessary a posteriori and contingent a priori, but such cases provide clear examples of where the primary and secondary proposition expressed by a sentence are distinct.²⁶ Additionally it will be seen that the form of what the reference fixing response claims are examples of our knowledge about the fundamental properties has a lot in common with examples of the contingent a priori and that Lewis' response to the reference fixing response is essentially the two dimensionalist's account of examples of the contingent a priori.

Having seen that the reference fixing answer is of a kind with apparent cases of the contingent a priori we will be in a better position to understand what exactly Humility is for Lewis – what exactly it is that we cannot

²³ Note that this view (that takes a sentence to express two propositions and the explanation of the necessary a posteriori and contingent a priori to be the explanation of an *illusion* of sorts) is only one variety of two-dimensionalism. However, it is the variety that Lewis appears to endorse and that is at work in his Humility argument. For a taxonomy of possible two dimensionalist positions see (Soames 2005).

²⁴ For Lewis, a proposition is a set of worlds, although a particular view on the nature of propositions is not essential to the two dimensionalist picture. It must be possible however for ones view of propositions to be such that a sentence can express two propositions, and it must be possible for a subject to stand in a different relation to the two propositions expressed.

²⁵ A very brief mention of one possible motivation will be given in section 7.

²⁶ As it will be seen they will be distinct whenever the sentence involves an indexical term – this is going to involve all sentences involving proper names or natural kind terms since they are taken by the two dimensionalist to be equivalent to rigidified descriptions (rigidified using the indexical *actually*)

know. We will be in a better position to understand this since we can understand our relation the fundamental properties as on a par with more familiar cases of the apparent contingent a priori. This will also allow, in section 6.4, to see why the response from scepticism is misplaced.

In the remainder of this section then the two dimensionalist position will be introduced with reference primarily to its treatment of the apparent necessary a posteriori. This will allow the various concepts and the general framework to be introduced. The following section, 6.2, will then apply this framework to the case of the contingent a priori and draw the parallel with the Humility argument.

6.1

Let us first consider an example similar to the one given by Lewis above in order to see how two-dimensionalism is supposed to work. Consider the sentence 'water is H₂O'. This is supposedly an instance of the necessary a posteriori – that is, it supposedly expresses something that is necessary yet only knowable a posteriori. The simplest way to take what is expressed to be necessary is to see it as an identity statement – the two things, water and H₂O, are, in fact, numerically identical. So on the assumption that if $x=y$ then, (if x exists then) necessarily $x=y$: if water *is* H₂O, then it is necessarily true that water is H₂O (if there is any water).²⁷ Yet that water is H₂O was an empirical discovery and not something that could have been deduced a priori. So, 'water is H₂O' expresses something a posteriori.

²⁷ Whether or not 'water is H₂O' is in fact best seen as a simple statement of numerical identity does not matter here, since it is not in question that there is a respect in which the sentence expresses something necessary.

As Lewis explains in the passage above, the two-dimensionalist response is to suggest that the relevant sentences, such as 'water is H₂O', which seemingly expresses something both necessary and a posteriori, express *two* propositions – one necessary and a priori, one contingent and a posteriori. As can be seen in the passage of Lewis' above, different philosophers have different terms for these two types of proposition. I shall refer to them as the primary and secondary proposition.

The secondary intension is the proposition expressed that is true at worlds with reference-fixing as it is at the *actual* world. When we consider the proposition that is the secondary intension of 'water is H₂O', the worlds at which this proposition is true are those worlds for which '...is H₂O' is true of whatever the referent of 'water' is *in the actual world*. So, since water in the actual world is H₂O, the proposition that is the secondary intension of 'water is H₂O' is true at just those worlds at which H₂O is H₂O. So the secondary proposition is necessary and a priori. It is necessary because identities are necessary and it is a priori since if it couldn't have been otherwise, we require no evidence for its being the case.

However, what is required to *understand* a sentence is to grasp the *primary intension*. The primary intension is the proposition that is true at those worlds with respect to reference fixing as it is at those worlds. So in our example this means it is true at those worlds where whatever happens to meet the description associated with water at those worlds is H₂O. So to understand the primary proposition is to grasp that it (the primary proposition) is true just when the watery stuff our acquaintance is H₂O and false when it is not.

Consider a possible world exactly alike the actual world but where all the H₂O has been replaced with Putnam's XYZ, where XYZ has a different chemical structure than H₂O (it has XYZ) but all of the superficial properties of the two substances are the same. So in this possible world people would drink XYZ, it would rain

XYZ, etc. Given the existence of such worlds, the primary proposition of 'water is H₂O' is both contingent and a posteriori. It is contingent because there are worlds in which it is false – when the watery stuff of our acquaintance is not H₂O, but XYZ, for example. It is a posteriori since we require empirical evidence in order to ascertain which stuff the watery stuff of our acquaintance is – is it H₂O? is it XYZ?

The apparent necessary a posteriori status of 'water is H₂O' is then somehow explained by its expressing these two propositions, one necessary (and a priori) and one a-posteriori (and contingent). However the explanation is not yet apparent. That is, we still require an explanation of why, given that 'water is H₂O' expresses something necessary and a priori, we seemingly *cannot* know this a priori.

The explanation comes from two dimensionalism's distinguishing between on the one hand expressing a proposition and on the other knowing what proposition one has expressed, such that it is possible to express a proposition without knowing which proposition one has expressed. Specifically, it is possible to know which primary proposition has been expressed without knowing which secondary proposition has been expressed. When I, say, utter 'water is H₂O' I understand what I have said (in one sense) because I know which primary proposition I have expressed. I fail to realise (prior to my chemistry lesson) that I have also said something that is necessarily true because *I do not know which secondary proposition I have expressed*. The secondary proposition being a priori is no help to my knowing its truth because I don't know which proposition it is.

What then is required in order for a subject to know which secondary proposition they have expressed? One way of understanding the two dimensionalist's answer to this question is in terms of evidence. In order to know which secondary proposition they have expressed, a subject requires evidence that rules out the possibility that they have expressed some other proposition. In the case of knowing which *primary* proposition has been

expressed this, in one important way, is not necessary - since which proposition is expressed depends only the meaning of the sentence and not on how the world is.²⁸ In the case of the secondary proposition however, which proposition is expressed *does* depend on how the world is independently of the speaker whenever the sentence involves a term whose reference is determined indexically; that is, whose reference depends on the context or world of utterance.

In *From Metaphysics to Ethics* Jackson understands this difference – between understanding a sentence (grasping the primary proposition) and knowing what (secondary) proposition it expresses – as two ways of knowing the truth conditions for a sentence. There is a distinction to be made between these two ways of understanding truth conditions only in the case of sentences where what is expressed by the sentence depends on the context (of utterance, of entertaining). What is expressed will depend on the context in this way only if the sentence includes indexical terms.

Jackson gives as an example an utterance of the sentence ‘He has a beard’, where a hearer is unaware of who is being pointed out. In this case the hearer *understands* the sentence and he does so since he understands the truth conditions (in one sense) of the sentence: he knows that is true if and only if the man demonstrated (or under discussion) has a beard²⁹. Yet the hearer is ignorant of the truth conditions in another sense. If it is Jackson that is demonstrated then the proposition expressed is true if and only if Jackson has a beard. Without knowing that it is Jackson that is the referent of ‘he’ the hearer does not know that what has been expressed is

²⁸ Notwithstanding various famous arguments for meaning in this sense being in some ways externally determined. So it may be possible that one was ignorant of the primary proposition expressed because the description, say, associated with the referring term is determined by the community and one did not meet whatever conditions were required in order to use the term. It should become apparent that these cases are very different from the case in question

²⁹ Jackson talks in terms of *sentences* of being true. Since we have been talking in terms of it being propositions that are true or false, we can understand this as knowing that a true proposition is expressed if and only if the man being demonstrated has a beard.

true if and only if *Jackson* has a beard. So when a sentence contains an indexical term like 'he', understanding the sentence (grasping the primary intension – knowing how what is expressed (the secondary proposition) depends on the context) does not ensure that one knows what has been expressed (the secondary proposition).

With this model based on sentences containing familiar indexicals in mind we can consider the example of 'water is H₂O' again. Here 'water' is the indexical expression. It is indexical since for the two dimensionalist the meaning of 'water' is equivalent to a rigidified description. The description, as already suggested, is perhaps something like {the wet stuff that falls from the sky, fills the ponds and seas...}. This is a rigidified description since it includes the indexical expression 'actually'. So the meaning of 'water' is equivalent to {the *actual* wet stuff that falls from the sky...}. The appearance of 'actually' in the description serves to make the (secondary) proposition expressed sentences about the *actual* satisfier of the description. To say that the proposition is *about* the *actual* satisfier is just to say that the proposition expressed is true at just those worlds where the actual satisfier of the description is at those world such to make the proposition true.

If the actual world is the H₂O world then 'water is H₂O' expresses the (secondary proposition) that is true at just those worlds where just is H₂O is H₂O (and so is necessarily true). However, if the actual world is the XYZ world, then 'water is H₂O' expresses the proposition that is true at just those worlds where H₂O is XYZ (and so is necessarily false). A subject's understanding the sentence 'water is H₂O' -- their grasping of the primary proposition --, does not ensure that they know whether the actual world is the H₂O world or if it is the XYZ

world. So we can think of the subject's grasp of the primary proposition consisting in their knowing, for any given world specified in sufficient detail, what secondary proposition would be expressed.^{30 31}

As a result, in the case of 'water is H₂O' a subject does not know whether they have expressed the necessarily true secondary proposition true if and only if H₂O is H₂O, or if they have expressed the necessarily false proposition true if and only if H₂O is XYZ. The a priori status of both of these propositions is no help to the subject, for what the subject needs to know is *which* proposition they have expressed.

This is the two dimensionalist's account of the why 'water is H₂O' appears to be necessary but only knowable by empirical investigation. The role of empirical enquiry is not its allowing the subject to ascertain the truth of the secondary proposition, but in allowing the subject to determine *which* proposition has been expressed.³²

We can see this distinction also in cases that are not examples of the necessary a priori. As Jackson puts it:

The propositions expressed by, in the sense of the truth-conditions of, our 'water' sentences depend on how things are in the actual world – in particular, on whether the watery stuff of our acquaintance is H₂O. This means that those who do not know this fact do not know the proposition expressed by, for example, 'Water covers most of the Earth'...Nevertheless, they understand 'water' sentences. It follows

³⁰ To understand the primary intension as a *proposition* we can see it as the proposition that says, for a sentence S, *that S at world w, expresses a proposition that is true at w.*

³¹ See (Chalmers 2003) for an account on these lines.

³² In cases where the secondary proposition is not necessary (and where the sentences is not an apparent example of the contingent a priori) the role of empirical enquiry would be two-fold. Firstly, in determining which proposition is in question and then in determining the truth of that proposition.

that understanding 'Water covers most of the Earth' does not require knowing the conditions under which it is true, that is, the [secondary] proposition it expresses. Rather it requires knowing how the proposition expressed depends on the context of utterance – in this case, how it depends on which stuff in the world of utterance is the watery stuff of our acquaintance. (Jackson, from (Soames 2003), p.166)

Here Jackson takes the 'proposition expressed' to be the secondary proposition. What is required for understanding of the sentence, as we have seen, is to understand what we have been calling the primary proposition (what Jackson elsewhere calls the A-intension) - what Jackson here refers to as 'how the proposition expressed depends on the context of utterance'.

This is only a very superficial sketch of the kind of two dimensionalism that Lewis endorses in the context of his response to the reference fixing response. However by considering how the two dimensionalist responds to apparent cases of necessary a posteriori the essential components of the view have been detailed. To summarise.

Every sentence is associated with two propositions, the primary intension and the secondary intension. The primary intension is that proposition that, for each possible world, its truth at that world is assessed with respect to the assumption that that world is actual. The secondary intension is that proposition that, for each possible world, its truth at that world is assessed with respect to how things are at the *actual* world.

For a subject to understand a sentence is for them to grasp the primary intension. As Jackson described it this is their grasping the truth conditions of the sentence – in one sense. Grasp of the primary intension consists something like an ability of the subject's to say whether, for any world described in sufficient detail, the

proposition is true or not. This is possible since the assumption is that, for any given world, the given world is the world of utterance/entertainment – therefore any indexical expressions have their referents with respect to the given world. So if the sentence is ‘He has a beard’, a subject’s grasping of the primary intension consists in their knowing for any world described in sufficient detail whether what would have been expressed would be true or not. This is possible on the basis of a (relevant, partial) description of a world and their understanding of the language since they are to consider what would be expressed *in the world described*. So if in a possible world in which Jackson was pointed out (as ‘he’), if Jackson has a beard in that world then what would be expressed would be true.

If we see the account of what it takes to grasp the secondary intension (and so know which proposition is expressed) as mirroring the account of grasp of primary intension then it is possible to see how grasp of the secondary intension is not ensured by understanding the sentence (grasping the primary intension). Let’s say that a subject’s grasp of the secondary proposition expressed by some sentence – equivalently, the subject’s knowing which proposition has been expressed – consists in their ability to say, for any given world described in sufficient detail, whether the proposition is true at that world³³. Considering again the example ‘he has a beard’, grasp of the primary intension is not sufficient for grasp of the secondary intension; no amount of detail about some possible world will allow a subject to know whether the secondary proposition expressed by ‘he has a beard’ is true at that world unless the subject knows who the actual referent of ‘he’ is. Only if the subject knows that it is Jackson that is being demonstrated will they be able to say for some world, in which the bearded status of every individual is detailed, whether the secondary proposition is true at that world. It is in this way it seems that Jackson thinks about a subject’s ability to know which proposition has been expressed. In discussing the example in the above passage, Jackson says:

³³ Such an account of what it is for a subject to know which secondary proposition is expressed by some sentence would need careful working out - minimal requirement is presumably that the descriptions in question could not include any of the indexical terms from the sentence. See Chalmers ‘On Sense and Intension’

They could know all there is to know about some counterfactual world without knowing whether the sentence [the secondary proposition expressed by 'water covers most of the earth'] is true in that world—whether that world is a condition under which the sentence is true—through their ignorance about the actual world. Because they do not know which stuff is the watery stuff of our acquaintance in the actual world, they do not know which stuff in the counterfactual world is the watery stuff of our acquaintance in the actual world, and that they need to know to evaluate the sentence in the counterfactual world. (Jackson 2003, p.72)

On two dimensionalism as it is being considered here we can see that the role evidence plays is twofold. Evidence has the familiar role of allowing subjects to determine (and come to know) that propositions are true, or false. Yet evidence also has the important role of allowing subjects to come to know which proposition has been expressed by a sentence. Only when a subject has evidence that allows them to know which proposition has been expressed are they then in a position to go on to determine whether the proposition is true or false.³⁴ Indeed, in the case of the necessary a posteriori, this latter step is not necessary since what is expressed is necessarily true; once a subject knows which proposition has been expressed they can know that it is true without empirical evidence.

With this framework in place it is now possible to see how it allows the two dimensionalist to explain away apparent cases of the contingent a priori. The case of the contingent a priori is of particular interest to the status of the reference fixing response. As it will be seen, what it is that the reference fixing response takes subjects to

³⁴ Importantly notwithstanding the supposed cases of the contingent a priori to be discussed below. In these cases subjects can know that the secondary proposition they have expressed is true, *without* knowing which proposition they have expressed.

know about the fundamental properties has much in common with apparent cases of the contingent a-priori. Consideration of the two dimensionalist's treatment of the contingent a priori will allow us to now understand properly Lewis' response to the reference fixing response and, finally, to assess it.

6.2

The challenge presented to the two dimensionalist by apparent cases of the necessary a posteriori is in explaining why subjects require empirical evidence in order to know something necessary. The two dimensionalist answer is that the role of empirical evidence is not to allow the subject to determine the truth of the (necessary) secondary proposition but rather to allow subjects to know which proposition they have expressed / are entertaining. The challenge posed by apparent cases of the contingent a priori is to explain how something that could have been false can be known without any empirical evidence.

The two dimensionalist answer is, again, that there is no one proposition that is both contingent and a priori. Again it is possible for the subject to understand the sentence without knowing which secondary proposition is expressed by it, for which secondary proposition is expressed depends on contingent features of the world. What is special about cases of the contingent a priori is that the primary proposition is necessary. As a result it is possible for subjects to know a priori that the secondary proposition expressed by the sentence in question is true despite the fact that the secondary proposition itself is contingent. What the subject's knowledge of the (necessary) primary proposition guarantees is that *whichever* secondary proposition is expressed, it (the secondary proposition) will be true.

One way of generating supposed examples of this category is to use the rigidifier 'actually' in conjunction with a descriptive term. The rigidifier 'actually' serves to fix the referent of the description on whatever *actually* satisfies the description. To use an example taken from Soames (2004): 'If anyone wrote the Declaration of Independence, the person who actually wrote the Declaration of Independence wrote the Declaration of Independence.' This is supposedly an example of a sentence that expresses something that is both contingent but a priori.

It is a priori because it seems that a subject can know that it is true without requiring any empirical knowledge. They needn't know who wrote the Declaration of Independence, what it is, or even that anyone wrote it. For they do know that *if* someone did write it (whoever they might be and whatever it may be) then it was written by the person who actually wrote it – the truth of this doesn't seem to depend at all on how the world is, and so is knowable a priori.

However, this sentence is supposed to also express something that is contingent. It is contingent because there appear to be possible circumstances about which the sentence expresses something that is false. Apparently, Thomas Jefferson was the person who actually wrote the Declaration of Independence. But, plausibly, it is possible that someone else could have written that very same document. And if that had been the case, if it had been written by Benjamin Franklin, say, then the person who *actually* wrote the Declaration of Independence (Thomas Jefferson) would not have written the Declaration of Independence (since it would have been written by Benjamin Franklin).

As in apparent cases of the necessary a posteriori, the two-dimensionalist takes this to be kind of linguistic illusion. Their thesis is that there is no *one* thing that is expressed that is *both* contingent and a priori. As with

cases of the necessary a posteriori, there are two propositions expressed – one is contingent and a posteriori (in this case the secondary intension), the other necessary and a priori (in this case the primary intension).

Recall, the primary intension of a sentence is the proposition expressed that is true at those worlds, w , with reference-fixing as it is at w . So for the current example, we can see why the primary intension is both a priori and necessary. It is a priori since whatever world is considered to be actual, the primary proposition expressed by 'If anyone wrote the Declaration of Independence, the person who actually wrote the Declaration of Independence wrote the Declaration of Independence' is true since the reference of 'the person who actually wrote the Declaration of Independence' is determined by how things are at that world. So for whichever world is under consideration, whoever in that world wrote the Declaration of Independence satisfies the description. Since this primary proposition is then true whichever possible world is actual, it is necessarily true. And since it is true in all worlds a subject needs no empirical evidence in order to learn that it is true.

Yet the secondary intension is contingent and a posteriori. The secondary intension is that proposition that is true at worlds w , with respect to reference fixing as it is at the *actual* world. So the secondary proposition in question is that proposition that is true at just those worlds at which *Thomas Jefferson* wrote the Declaration of Independence. This proposition is contingent, because it is false at worlds where someone else, say, Benjamin Franklin, wrote the Declaration of Independence. It is a posteriori because it is not possible to know without empirical investigation that *this* is the true (secondary) proposition that has been expressed. A subject who hasn't had their American History lesson doesn't know that 'If anyone wrote the Declaration of Independence, the person who actually wrote the Declaration of Independence wrote the Declaration of Independence' expresses the (secondary) proposition that is true just if Thomas Jefferson wrote the Declaration of Independence or whether it expresses the (secondary) proposition that is true just if Benjamin Franklin wrote

the Declaration of Independence. Though, they do know it expresses *some* true proposition (since the primary intension is necessary and a priori).

So we should think about the two-dimensionalist account of the contingent a priori as follows. Apparent examples of the contingent a priori appear to be a priori since they have a primary intension that is necessary. What this means is that a subject knows that whichever world is actual, that is, whatever the actual world is like, the sentence expresses a true (secondary) proposition. However, whilst a subject knows a priori that the sentence expresses *some* true (secondary) proposition, they do *not know*, without empirical evidence, *which* true secondary proposition the sentence expresses. In the example, it could be the proposition that is true only if Thomas Jefferson wrote the Declaration of Independence or the proposition true only if Benjamin Franklin wrote the document. And the true (secondary) proposition expressed is of course then contingent.

So, on the two-dimensionalist account, what is going on in apparent cases of the necessary a posteriori and contingent a priori is very similar. In both cases what the subject needs to grasp in order to understand the sentence involved is the primary intension. And in both cases we can see what is provided by empirical investigation as knowledge of which (secondary) proposition is being expressed.

We see then that on the two-dimensionalist semantic picture, succeeding in expressing a proposition yet failing to know which proposition one has expressed is something that language users can do with relative ease (and, if Jackson is right, presumably do so with some regularity).

We are now in a much better position to understand what Lewis means when he says we can express propositions about which properties play which roles, but not *knowingly*. We are thus in a better position to understand what Lewis takes Humility to be, and to understand how for him this follows from the multiple realizability of T.

One way to see this is to see the reference fixing answer to the question ‘which property plays the 17th role?’ considered by Lewis to be an example of the contingent a priori.

The reference-fixing answer considered by Lewis can be seen to be an example of the contingent a priori in the same way as the ‘If anyone wrote the Declaration of Independence...’ example is such a supposed example. ‘(If any property plays the 17th role of T, then) the property that *actually* plays the 17th role of T plays the 17th role of T’. This is a priori since the primary intension is knowable a priori. The primary intension is knowable a priori since whichever world is the actual world a true (secondary) proposition will be expressed. However the world is, if anything plays the 17th role, then it is the thing that actually plays the 17th role. Yet depending on how the actual world is, a different and contingent (secondary) proposition would be expressed. This secondary proposition is contingent in the same way that it is contingently true that the person who actually wrote the Declaration of Independence (Thomas Jefferson) wrote the Declaration of Independence (since it could have been Benjamin Franklin). Although the 17th role is occupied by whatever actually occupies it (call it *a*), it could have been occupied by some other property (*b*, say). And in these cases, the possibilities in which the 17th role is occupied by some other property (*b*, say), the secondary proposition expressed by the reference-fixing answer would be *false*. That is, this secondary proposition is true at only the worlds in which *a* plays the 17th role.

The reference-fixing answer considered as an example of the contingent a priori takes the form of a conditional, though we needn't think of it like this. If we said merely 'The 17th role is occupied by whatever actually occupies the 17th role', we could consider this to be false in worlds in which T was false (and nothing occupied the 17th role). In this way the primary intension would not be necessary and so would not be a priori. The primary intension would be the set of world in which T was true, with the secondary intension as a sub-set (containing only the worlds where T was true and *a* played the 17th role).

Grasping the primary intension of the reference fixing answer (of the sentence 'the property that actually plays the 17th role plays the 17th role), consists in being able to tell, given a description of a world considered as actual (or equivalently, as we have said – with reference fixing as it is at that world), whether the proposition that would be expressed at that world would be true at that world. This is something we can do, and Lewis acknowledges that we can do. *However* the world is, as long as something plays the 17th role, it will be whatever plays the 17th role.

Yet, just as in the case of the sentence 'he has a beard', a subject's understanding of the sentence does not ensure that they know which secondary proposition has been expressed. As we understood it above, knowing which secondary proposition has been expressed by some sentence consists in knowing, for any world described in sufficient detail, whether the proposition is true at that world. The secondary proposition expressed by the reference fixing answer is true at a world just if the property that plays the 17th role *in the actual world* plays the 17th role in that world. Yet we are unable to say for any given counterfactual world in which the Ramsey sentence of T is uniquely realized whether or not the secondary proposition of the reference fixing answer is true at that world.

It is then, it would seem, a general feature of the two-dimensionalism that Lewis endorses that for a subject to talk about a particular thing it is necessary that they have evidence that excludes the possibilities in which their terms have different referents. This is what happens when one learns that water is H₂O, but is what cannot happen to allow one to know which proposition is expressed by the reference-fixing answer. Therefore one cannot know which properties occupy which roles.

6.3

The reference fixing response holds that since we can think of properties as the actual occupiers of particular roles, the fact that these roles have multiple *possible* satisfiers does not prevent us from knowing which properties occupy which roles – for any particular role it is occupied by the property that actually occupies it and we know this.

Having considered the two dimensionalist framework that Lewis' cites in support of his reply to the reference fixing argument we are now in a better position to assess both the response and the Humility argument. Importantly, we are in a position to assess what exactly the supposed ignorance is that is involved in Humility.

Following the discussion of the two dimensional framework, two ways of pursuing something like the reference fixing response to Lewis' argument are available. On the one hand, it could be conceded that Lewis' argument does establish that we can never know which proposition is expressed, or which proposition we are entertaining, in sentences and thoughts about the fundamental properties. Yet, it could be argued, this is no block to our knowing things about the fundamental properties and therefore Lewis' conclusion isn't that worrying at all. On the other hand it could be argued that Lewis is wrong, there is not the kind of ignorance

Lewis argues there is concerning the fundamental properties – argued, that is, that when we think of the actual occupier of a certain role we are not ignorant of which proposition we are entertaining.

Firstly it will be briefly argued that if Lewis' argument is sound then the conclusion is far from trivial and should concern us. Following this, what would be involved in rejecting Lewis' argument on the grounds of the reference fixing response will be considered.

6.3.1

It has been suggested, in considering the two dimensionalist response to apparent cases of the necessary a posteriori and the contingent a priori, that the supposed ignorance in the humility case is of a kind with the ignorance in these cases. In the apparent cases of the necessary a posteriori, ignorance of secondary proposition expressed explains why subject' seemingly cannot know this proposition a priori, even though it is necessary. In the apparent cases of the contingent a posteriori, it is possible for subjects to know that the secondary proposition they have expressed is true, without knowing which proposition it is. This explains how subjects can seemingly know contingent propositions a priori: They cannot, but they can know, a priori, that *some* true proposition has been expressed.

In assessing the import of the Humility argument if it is successful, let us consider it as it compares with Jackson's two dimensionalist analysis of thoughts about water. For Jackson, it is necessary, in order for subjects to know which secondary proposition is expressed by sentences about water, that subjects know that water is H₂O. Until subjects know this, they cannot know whether or not the secondary proposition expressed by some water sentence would be true in the worlds in which a superficially similar but distinct substance was the

referent of 'water'. Yet prior to learning that water is H₂O, subjects can still understand water sentences. And, presumably, they can still be said to 'know things about water', in so far as they know, for instance, that water covers most of the earth. Lewis' claim can then be seen to be that we are with respect to the fundamental properties (irredeemably) in the same position as the chemically ignorant are with respect to water. If this is the case, then we, with Lewis, might be happy to accept that Humility holds, if *that's* all it is.

I think that this would be a mistake. Knowing which secondary proposition is expressed by some sentence is not incidental to knowledge about its subject matter. Consider Jackson's own example used in introducing the distinction between understanding a sentence and understanding the (secondary) proposition expressed by that sentence (Jackson 2003, p.72). A subject hears someone utter 'He has a beard' without knowing who is being talked about. In this case the subject understands the sentence, yet is ignorant of the (secondary) proposition expressed since he is unaware of whom 'he' is. We may wish to say that the subject indeed knows that he (whoever it is) has a beard (since, say, the sentence was uttered sincerely by a reliable person etc.). Yet we would be inclined to say that there is something important lacking in the epistemic relation between the subject and the referent of 'he' and his beard. For instance, we would perhaps be disinclined to say that the subject knew *of the person in question* that they had a beard³⁵.

That there is, in cases where a subject does not know which secondary proposition has been expressed, a genuine and significant epistemological deficit is clear in consideration of the two dimensionalist analysis of the contingent a priori. Consider the example given above. 'If anyone wrote the Declaration of Independence the

³⁵ This is not to make Frege's point that it is possible for a subject to know that 'Jackson has a beard' yet not know that 'Frank has a beard' (where Frank is Jackson). What is in question is whether the subject knows anything about the person at all, under any mode of presentation.

person who actually wrote the Declaration of Independence wrote the Declaration of Independence'. The secondary proposition expressed by this sentence is contingent – the person who actually wrote the Declaration of Independence might not have done. The two dimensionalist explanation of how we can nonetheless know *a priori* that what is expressed is true appeals to the nature of the primary proposition. The primary proposition *is* true at just those worlds *w* with reference fixing with respect to how things are at *w*. So the primary proposition is true at those worlds where the satisfier of the description 'the person who actually wrote the Declaration of Independence'. It was said that we could understand a subject's grasp of a primary proposition as involving their grasp of what secondary proposition would be expressed *if* the world were some way or other. So grasp of the primary proposition in the example involves grasping that if the world were such that Thomas Jefferson wrote the Declaration of Independence, then the secondary proposition is true in just those worlds where Thomas Jefferson wrote the Declaration of Independence.

Yet, prior to their American History lesson, a subject does not know that Thomas Jefferson wrote the Declaration of Independence. What they do know, in virtue of their grasp of the primary proposition, is that however the world actually is, the secondary proposition expressed is true. What they lack (prior to the lesson) is knowledge of *which* secondary proposition is expressed. Prior to their lesson, the subject's epistemic relation to Thomas Jefferson is closely analogous to, on Lewis' view, our epistemic relation to the fundamental properties. And importantly, there seems to be something lacking in our epistemic access to Thomas Jefferson when all we have is an understanding of the sentence above (grasp of the primary proposition). Indeed, it seems quite plausible to say that subject's in such a position know nothing about the man Thomas Jefferson at all.

It can be concluded therefore that the weaker version of the reference fixing response is wanting. A position of Humility toward the fundamental properties is a significant state of affairs since the ignorance in Humility is of

a kind with the ignorance ascribed to subjects by the two-dimensionalist in apparent cases of the contingent a priori.

6.3.2

The stronger version of the reference fixing response holds that subjects are not ignorant of which (secondary) proposition is expressed by sentences about the fundamental properties involving rigidified role description. A full investigation of this response cannot be conducted here. This is because it seemingly involves the rejection of the two dimensional framework outlined above, and the ultimate merits of such a framework are beyond the scope of this thesis. However, a few comments can be made.

Whilst the two dimensional framework introduced above has much support, it also many critics³⁶. As such, that the strong version of the reference fixing response (hereafter just ‘reference fixing response’) involves an apparent rejection of at least some doctrines of the two dimensionalism discussed may not be thought much of a price to pay for such critics. However, it should be noted that much of the criticism of two dimensionalism centres on the two dimensionalist treatment of proper names and natural kind terms as rigidified definite descriptions, finding this implausible. In the case of the fundamental properties the thesis that the referring terms involved *are* rigidified definite descriptions has much more prima facie plausibility. Whilst this will not be discussed in any detail here, it is important to note the following. What the reference fixing response involves is rejection of the two dimensionalist’s treatment of what a subject knows in cases where the referring expression in a sentence *is* (we can assume) a rigidified role description. It is perfectly consistent to hold that,

³⁶ As has been mentioned, see (Chalmers 2003), Jackson (2003) and (Stalnaker 1999) for prominent versions of the view. See Soames (2004) for a detailed rejection of the framework.

say, Jackson is wrong and proper names and natural kind terms are not equivalent to rigidified descriptions, and yet agree with the two dimensionalist's treatment of cases in which the expression *are* agreed to be rigidified descriptions.

6.3.3

The conclusion of this discussion of two dimensionalism and the reference fixing response is that reference fixing responses are required to recognise that the restriction Lewis imposes on identification – on knowing which thing one is thinking about – is part and parcel of a wider philosophical view. This view, often known as two dimensionalism, presents a wide reaching analysis of what is required for a subject to knowingly entertain a proposition. This view is far from universally accepted and so it is certainly possible for the reference fixing response to willingly reject both the Humility argument and two dimensionalism. However, that the reference fixing response stands at odds with two dimensionalism ought to be made explicit. It was also noted that unease with two dimensionalism's descriptive treatment of names and natural kind terms does not entail a rejection of the analysis as it applies entities whose names are more plausible candidates for rigidified definite descriptions, such as the names for fundamental properties.

Additionally, in section 7 it will be briefly argued that a principal argument for quidditism plausibly requires two-dimensionalism. As such, any philosopher attracted to quidditism by this argument must take seriously the consequences of the Humility argument.

6.4

In this section the response from scepticism to the Humility argument will be considered. Lewis' argument will be defended against the response from scepticism and the defence will build on the discussion above of the Humility argument in the context of the two dimensionalist framework.

The response from scepticism claims that the Humility argument is, or is sufficiently like, a standard sceptical argument. This supports an argument against the Humility argument, since if the Humility argument is a standard sceptical argument then responses to standard scepticism may well be applicable. Then, to the extent that we know *anything* about the external world we can know which properties play which roles.

In this section it will be shown that the Humility argument is not a standard sceptical argument and that standard sceptical 'solutions' are therefore not in fact applicable. It will be supposed, very plausibly, I think, that sceptical arguments work by calling into doubt some belief, or set of beliefs. Specifically, they work by attempting to show that, for all the subject can tell, a particular belief might actually be false; if the subject cannot rule out that a particular belief that P might be false then they cannot be said to know P. If this is the case then the response from scepticism faces a serious problem. Specifically, the response from scepticism faces a dilemma. In the case of belief/knowledge about which properties play which roles, either there *is* no relevant belief for the sceptic to doubt, or, else, the belief cannot, for the subject can tell, actually be false. Given this dilemma, there appears to be no belief of the right kind for the sceptic to doubt and so, importantly, nothing for our traditional responses to scepticism to save.

6.4.1

Alyssa Ney puts what I am calling the response to scepticism as follows³⁷:

The putative fact that we could not distinguish whether it was really X rather than Y that is occupying the role on a given occasion does not undermine that fact that we can learn a lot about the intrinsic properties postulated by science via causal roles. This is just to make explicit the fallibilism that most philosophers accept in formulating their anti-sceptical epistemologies. One can have knowledge of a proposition without being able to rule out all sceptical alternatives to that proposition. For example, on a simple reliabilism or evidentialism, I can have knowledge of intrinsics so long as I either form beliefs about them using a reliable belief forming mechanism, or have evidence of their existence from experience. (Ney, p. 52)

Ney is suggesting that our inability to distinguish between worlds in which different properties play different roles (and where T remains true) is no block to our knowing about these properties. It is not necessary, she claims, to rule out all sceptical alternatives.

The same point is argued for by Jonathan Schaffer in 'Quiddistic Knowledge' where he considers a potential sceptical argument against quidditism. This argument runs as follows:

- 1) If there are worlds that differ solely over which property confers which power, then we do not know which properties exist;
- 2) We do know which properties exist;

³⁷ See also (Langton 2004). Langton concentrates on the applicability of Lewis' contextualist response to scepticism (Lewis 1996).

3) Therefore: there aren't worlds that differ solely over which property confers which power.

(Shaffer 2005, p.16)³⁸

It is (1) that is the important premise. (2) and (3) represent a decision to form a modus tolens argument against quidditism, as opposed to accepting the consequent of (1) as Lewis does in Ramseyan Humility. Schaffer construes (1) as a sceptical argument and breaks it down as follows:

- 1) If there are worlds that differ solely over which property confers which power, then there is a world *w* distinct from actuality solely over which property confers which power;
- 2) If there is a world *w* distinct from actuality that differs solely over which property confers which power, then we cannot discriminate between actuality and *w*;
- 3) If we cannot discriminate between actuality and *w*, then we do not know whether actuality or *w* obtains (since actuality and *w* differ over which properties exist) we do not know which properties exist;
- 4) Therefore: If there are worlds that differ solely over which property confers which power, then we do not know which properties exist.

(Schaffer 2005, p.17)

³⁸ Shaffer suggests that Shoemaker is possibly the 'prime source for such sceptical anxieties' and references several other philosophers also. However, none of the other papers referenced, as I understand them, endorse or even discuss a *sceptical* argument. Indeed Shoemaker has since withdrawn support for such an argument (See Shoemaker 'Causal and Metaphysical Necessity' in (Shoemaker 2003)). The references can probably be explained by Schaffer's classification (in the following pages of 'Quiddistic Knowledge') of arguments that appear in these papers as 'spill-over' arguments from the sceptical one he has identified. These include, for example, the 'spill-over methodological argument' he summarises in a quote from Hawthorne: 'We don't need quidditative extras in order to make sense of the world' (Hawthorne 2001). It is not clear why this is in anyway a spill over from a sceptical argument. For instance, it would appear to be independent of whether these 'quidditative extras' present any difficulty whatsoever for knowing which one was which.

Schaffer sees this as a standard sceptical argument.

Quiddistic scepticism is just a species of scepticism about the external world. That is, there is nothing in the epistemic reasoning embedded in [(1.1)-(1.4)] that differs from the epistemic reasoning in standard sceptical arguments against knowledge of the external world...

...Whatever answer one offers to scepticism about the external world will thereby answer quiddistic scepticism. (Shaffer 2005, p.20)

Schaffer then provides his own taxonomy of responses to scepticism and a brief suggestion of how each variety might provide their response in the quidditism case.³⁹

It will now be argued is that it is not right to think of the Humility argument as sceptical argument.

We can ask firstly then whether (1.1)-(1.4) presents a 'sceptical argument' in the sense in which it is of a kind with familiar external-world sceptical argument amenable to standard responses. It certainly presents an epistemological problem. But of course not all epistemological problems are sceptical problems. Yet, (1.1)-(1.4)

³⁹ Though, it should be said, no sufficient reason in each case to suppose that – if it is a skeptical argument that is in question, which it will be argued it is not – any of the responses will actually work in the quidditism case. For example, an instance of *dogmatic* answer to skepticism given is '*direct realism*' (attributed to Brewer (1999) and Williamson (2000)). 'The direct realist has the following answer to quiddistic skepticism: *perceivable!* That is, just as the direct realist claims to directly perceive external world objects, so she should claim to directly perceive quiddities.' (Schaffer p.21-22) I hope it isn't too quick to suggest that this certainly isn't what the 'direct realist' should claim to be able to do; I don't think (even) Williamson and Brewer take themselves to be capable of directly perceiving the intrinsic nature of quarks, say.

does appear, *prima facie*, to be just like a standard sceptical problem. There are multiple scenarios between which one cannot discriminate and the upshot is that one does not know something one would like to know.

Two connected considerations will now be offered by way of doubting that the Humility argument is in fact a species of standard external world scepticism⁴⁰. The first is intended to show only that the possibility of framing the Humility argument as in (1.1) – (1.4) does not show that it is a sceptical argument. That is, not all epistemological problems caused in some way by a lack of evidence are sceptical problems. The second is to point out an important difference that separates the Humility argument from the standard sceptical case.

Consider the following scenario. We come to know (somehow) that, after all, we are in fact brains-in-vats. But this is all we know about this aspect of our predicament, nothing about how we got here or who or what is behind it all. But we have theories about this. Unfortunately it seems to be the case that we reach an impasse in our theorizing. We have several theories about who/what is at the vat-controls, all of which would account perfectly for our predicament but with no way whatsoever to tell between the theories. We can assume also that one of the theories we possess is in fact the correct one. So now, on some plausible assumptions, we have a situation in which it seems we have worlds that differ solely over who/what is behind our experiences, between which we cannot discriminate. So we cannot know which situation obtains and so cannot know who/what is behind our experiences.

⁴⁰ What exactly 'standard external world scepticism' is something I cannot consider here, but hopefully it will become clear what I think the Humility argument is *not*. It is perhaps still open for it to be considered as *some type* of scepticism but my purpose here is to differentiate from one kind of sceptical argument, the 'standard kind'. The important point and the one that is being argued for is that it is not a 'standard' sceptical argument in so far as it is not amenable to standard sceptical responses (to whatever extent standard sceptical arguments are).

So here we have a situation where an inability to distinguish between various scenarios prevents us from knowing which one of these scenarios obtains. Is *this* brain-in-a-vat scenario a 'sceptical' scenario? Not obviously so. Here, whilst it is the case that an inability to tell between various scenarios is seemingly the source of ignorance it does not seem that the situation is 'sceptical' in nature. For instance, would the people in this brain-in-a-vat scenario be better off if they had an epistemologist among their number? It is not obvious that they would. Whilst we have at our disposal the correct theory, and in a sense all that seemingly prevents us from knowing that it is true is the existence of alternative theories we have insufficient evidence to rule out, our epistemological problem is not sceptical and a sceptical solution would be ineffective.

Consider a more mundane example. You know you are somewhere in Warwick University campus. You come to during a talk and are not entirely sure which room you are in. You know there are three and only three rooms with the layout of the room you are in. There are three possibilities for which room you are in, and your evidence fails to discriminate between the three. There is then a sense in which you do not know which room you are and this is because your evidence fails to decide between a range of possibilities. Yet again, this is not a typical sceptical problem. Specifically in the sense that it would seem inappropriate to expect a solution to scepticism to help whatsoever.

These cases have parallels with the case of quidditism and Humility, but important differences. At this point these cases are intended only to show that not all epistemological problems that fit the (1.1)-(1.4) schema are thereby sceptical arguments.

This point can now be made clearer by looking at a second consideration. In a standard sceptical scenario what is of central importance is that there is something that the subject takes themselves to know; we would

traditionally take it that there is something that they *believe*. That is, in a standard sceptical argument what is required is something on the table for the sceptic to *doubt*. I think that I know that there is a bookcase in front of me. The sceptic can now proceed to tell his stories about brains in vats and demons. What is on the table for doubting in the case of the knowingly-envatted people above? They are aware that their evidence does not decide between the various theories. There is nothing (relevant) for the sceptic to doubt, and so it seems a sceptical response is of little help in allowing the knowingly-envatted to know *which one* of their theories is true. Similarly, when you come-to in some room in Warwick University and your evidence fails to distinguish between three possible rooms you could be in, the suggestion is that this could not be taken to be a sceptical problem because there is no one room you believe yourself to be in (aside, that is, from *this* room – this will be discussed shortly).

Similarly in the case of the Humility argument I suggest that there is, *prima facie*, nothing on the table for the sceptic to doubt, and so nothing for the sceptical response to save. If this is right then it seems that the likening of Humility to standard sceptical scenarios is mistaken. Sceptical scenarios work by providing a situation that for all you can tell *might actually* obtain and is such that if it does so obtain then certain target beliefs would be false – therefore such beliefs cannot constitute knowledge or be justified, etc.. In the Humility case however, there seems to be a missing ingredient. We have the indistinguishable scenarios as in the sceptical case – but what it is it we are supposed to be *mistaken* about if it were the case that one of the alternative scenarios *did* obtain?

To respond to the Humility argument using responses to scepticism in general it seems we need a grasp on what it is we purportedly know, what it is that the quiddistic sceptic doubts. This is required for it is this that responses to scepticism save – with scepticism dealt with we can be said to know all those things we ordinarily

take ourselves to know. In the external world case, it might be our knowledge of various propositions about the external world – you can rest assured that you know that there is a bookcase before you.

Yet in Humility case, the very thing that is argued we necessarily lack is an ability to knowingly express propositions about which properties play which roles. This is quite different from knowing these propositions to be true. For the former affects not only our ability to know such propositions but our ability to *believe* them. And if it is not the case that we can believe propositions about which properties play which roles, it is not at all clear how any response to standard external world scepticism can help. The role of such responses is to secure knowledge in spite of the supposed fact that what is believed might actually, for all one can tell, be false. Absent any such belief it is not clear what the role of a response to scepticism might be.

However, in light of the above discussion of the reference fixing response we can consider the following attempt at providing a item of purported knowledge – something for our sceptical responses to secure.

Say one took the following sentence as expressing an example of what it is that we know: ‘the property that actually plays the 17th role plays the 17th role’, where ‘actually’ acts as a rigidifier. We now have something that one can purport to know.

In order to consider this attempt at repairing the response from scepticism we can consider again the similarity between the rigidified role description and apparent cases of the contingent a priori. The reason I can know a priori that ‘if anyone wrote the declaration of independence then the person that actually wrote it, wrote it’ yet it also be only contingently true is that what I can know a priori is that I have said *something* true. What I don’t

know (or don't need to know) is *which* true proposition I have expressed. For instance I don't know that it is the one that is true just if Thomas Jefferson wrote the Declaration of Independence, or just if Benjamin Franklin did. Similarly with the rigidified role description, according to Lewis, I know I have expressed something true I just don't know what it is.

Does a response to standard external world scepticism help in knowing which person wrote the Declaration of Independence; that is, know which proposition has been expressed? It would seem not. We can see here the problem faced by the response from scepticism. A standard sceptical argument, I am taking it, relies on the possibility that target beliefs *might be* false. That is, that the target beliefs *might actually for all one can tell* be false. What might such a belief be in the case of the Declaration of Independence? Certainly not belief in the primary proposition since this is necessary and a priori. Yet although the secondary proposition expressed *is* in fact contingent (Thomas Jefferson might not have written the Declaration of Independence) it is *not the case* that the secondary proposition one expresses *might actually for all one can tell* be false. This is consequence of the necessary a priori nature of the primary proposition; *whichever* world it actual the secondary proposition expressed is true. The sceptic questions our certainty in the truth of certain beliefs. In the case of knowing which person wrote the Declaration of Independence there is no such belief to question since we can be certain that what is believed is true. Talk of scepticism here, without substantial qualification, seems out place.

It can be seen how the strategy of using reference fixing to provide an item of purported knowledge fails in the non-sceptical cases above. In the alternative brain-in-a-vat scenario suppose that we were to think about who or what was behind the controls by thinking about the *actual* controllers of the vats. Now we have something we purport to know (that the actual controllers of the vats are behind our experiences). But this attempt at providing an item of purported knowledge provides too much. For if this is what we supposedly know then we have no need to then bring out our favoured response to scepticism, for *this* item of knowledge is seemingly

'sceptic-proof'. For as we said above, sceptical arguments work by showing that for all the subject can tell, what they think they know, what they believe, *might actually be false*. Yet we, the knowingly en-vatted, know that whatever is actually behind the vat controls *is* behind the vat controls – we can't be wrong about *that*. Whether it is possible for us to know the secondary proposition expressed by the reference-fixing sentence will turn on the success of the reference fixing response, discussed above. If it is successful then there is no remaining sceptical argument to be dealt with.⁴¹

Similarly for the case of knowing which room one is in. Say it is suggested that we do have a belief about which room we are in - it is *this one*. Again, there is no need for the employment of responses to scepticism. For to whatever extent our knowing that we are in *this room* provides knowledge of which room we are in, it is immune from sceptical doubt. And again, the extent to which it provides such knowledge will depend on the success of the reference fixing response.⁴²

I suggest therefore that the response from scepticism faces a dilemma. Either there is no target belief, that is, no purported item of knowledge for the sceptic to call into doubt and so nothing for a response to scepticism to save, or else the target belief, the item of purported knowledge, is immune to any sceptical challenge.

So either we are in the same position as the knowingly-envatted above, where there is seemingly no belief on the table for the sceptic to doubt, or else we make an appeal to the reference fixing answer considered above.

⁴¹ Of the kind with which we are concerned, there may still of course be others

⁴² It can be seen how it does not help to instead take it that what we purportedly know is what proposition we have expressed. It seems our only way of picking out this proposition is as the proposition we have *actually* expressed and once again it is not possible for us to be mistaken about this; we can be certain that we have expressed the proposition we have actually expressed.

And appeal to the reference fixing answer provides a belief that cannot, for us, be false. Take our purported knowledge that 'The property that actually plays the 17th role, plays the 17th role'. Since we know that this (the secondary proposition expressed by this) is true there is nothing for the sceptic to doubt.⁴³ The sceptic may succeed in worrying us by saying: 'For all you know you might not actually have a body since for all you can tell you might actually be a brain in a vat'. However the sceptic cannot sensibly concern us by saying: 'For all you know, the property that actually plays the 17th role might not actually play the 17th role'.

I hope the above is sufficient to show that in their role *as* responses to scepticism such theories will not address the Humility argument. Responses to scepticism are designed to secure knowledge that P where it appears to be an ineliminable possibility that not-P. Such responses are inappropriate in the Humility case since for any proposition that we might be said to believe about which properties play which roles, it is not a possibility *for us* that not-P⁴⁴.

In conclusion, Lewis' Humility argument is not a species of external world scepticism. It has been assumed that sceptical arguments depend on highlighting a belief of the subject's that, for all the subject can tell, is actually false. Nothing that could be considered to be the item of purported knowledge for the sceptic to doubt could, actually, be false. Therefore the Humility argument is not a species of external world scepticism. If the Humility argument works it is not by the mechanism of traditional scepticism. As such, we should not expect responses to external world scepticism to be applicable to Humility argument. Specifically, if standard sceptical responses aim to secure as known some of what is truly believed, in the face of the possibility *for the subject can tell* that

⁴³ Within the relevant range of possibilities, i.e. where T is true.

⁴⁴ Again, within the relevant range of possibilities, i.e. where T is true

the beliefs *are not true*, then we should not expect them to be applicable in the case of the Humility argument since there are no such beliefs.

7. Two dimensionalism and quidditism.

Before concluding it will be briefly argued that one particular argument for quidditism plausibly requires endorsement of a version of two-dimensionalism. As such, a philosopher who argues for quidditism in this way must take seriously the consequences of Lewis' Humility argument and the defence of that argument in this chapter. The argument for quidditism in question is an argument that moves from the apparent conceivability of properties possessing different powers than they actually do to the metaphysical possibility of this, and therefore for quidditism. However, the move from the conceivability of some state of affairs to its metaphysical possibility becomes less than perfectly straightforward in the light of apparent cases of necessary a posteriori truths of the kind presented by Saul Kripke (1981).

The argument from conceivability is offered alongside others by Jonathan Schaffer in 'Quiddistic Knowledge' and is taken to be decisive by Marc Lange in his *An Introduction to the Philosophy of Physics*. Additionally, though speculatively, I take the argument from conceivability to be behind many philosophers suspicion of views that deny QT.

In 'Quiddistic Knowledge' Jonathan Schaffer presents the following argument for quidditism.

- 1) If the relation between properties and their powers is necessary, then it is inconceivable that like charges attract;
- 2) It is conceivable that like charges attract;
- 3) Therefore: the relation between properties and their powers is not necessary.

The interesting premise for current purposes is premise (1). This premise requires that if something is necessary, nothing contradictory be conceivable. So if it necessary that like charges attract (as a denial of QT plausibly entails) then it is not conceivable that like charges do not attract. Yet supposedly it is conceivable, so it cannot be necessary that like charges attract and so, therefore, QT must be true.

However, if there are necessary a posteriori truths then, in general, a state-of-affairs being conceivable cannot be taken as a guarantee of its being possible, since evidence might be later acquired that shows an inconsistent state of affairs to be necessary. For instance, if it is a necessary truth that water is H₂O, then according to premise (1) it should be inconceivable that water is not H₂O. However, since it took empirical evidence to determine that water is H₂O it must be, or at the very least must *have been* prior to the acquisition of this evidence, conceivable that water is not H₂O.

However, two-dimensionalism purports to explain away apparent cases of the necessary a posteriori and so can be used to preserve the premise that takes conceivability to entail (metaphysical) possibility. This is exactly the move made by David Chalmers (1996) in his argument for the (metaphysical) possibility of zombie's as part of a larger argument against physicalism. Chalmers seeks to explain away Kripkean examples of the necessary a posteriori in order to preserve the premise that conceivability entails possibility. The apparent conceivability of zombies therefore entails their possibility, and given their possibility Chalmers argument against physicalism

can proceed. It would seem that an argument for quidditism that seeks to argue from the conceivability of properties conferring different powers to the metaphysical possibility of this (and so quidditism) is required to provide, as Chalmers aims to provide, a defence of the move from conceivability to possibility in the light of apparent cases of the necessary a posteriori.

To return to Shaffer's argument above: it would seem that (1) cannot be true in a generalized form. If it is not in general true that if something is necessary then its denial is inconceivable, then why should we accept (1)? As just suggested this is part of a general challenge that faces any argument that seeks to move from the conceivability of something to its (metaphysical) possibility.

And as it has just been noted, the two dimensionalist framework introduced above provides an analysis of sentences that supposedly express necessary a posteriori truths, such that no such truths need be accepted. With supposed instances of necessary a posteriori truths explained away, the obstacle to the generalized (1) is removed.

If the argument from conceivability for quidditism is also to support the premise that allows the inference of metaphysical possibility from conceivability, then it is plausible that it should invoke the same two dimensional framework. However if it does employ the two dimensionalist treatment of the necessary a posteriori then, as has been argued above, it is forced to the conclusion that we are in a position of humility toward the fundamental properties.

Conclusion.

In this chapter quidditism has been introduced. Quidditism is the view that holds QT. On quidditism, properties confer the causal powers they do only contingently. For any property it could have been the case that it conferred different causal powers than it actually does, and a different property than it could have conferred the powers it actually does. On quidditism then, properties confer the causal powers they do neither necessarily nor sufficiently.

This has the consequence that the world could have been just as it is in all respects except that the property that actually plays the positive charge role conferred all the causal powers actually conferred by the property that actually plays the mass role (and vice versa). That this is a genuine possibility – that is, that these two worlds are genuinely distinct – some philosophers find implausible. However, a principled reason for rejecting quidditism on the basis of this consequence doesn't seem forthcoming.

The main focus of this chapter has been considering in some detail an argument of David Lewis' about the consequences of quidditism. This argument I have referred to as the humility argument and is the argument that, assuming quidditism, we must remain ignorant of the fundamental properties. We pick out the fundamental properties by their causal roles, which are described in physical theory. As such, all of our evidence for our physical theory is only evidence that *some* properties play the roles described, not for which properties play these roles. This is because, assuming quidditism, different properties could have played different roles (conferred different powers). Since it would seem that the only knowledge available about the fundamental properties is knowledge of which role they play - and we can't know this – we can know nothing about the fundamental properties.

Two responses to Lewis' argument were then considered. The first, the reference fixing response, holds that the fact that our evidence cannot decide between different realizations of T does not mean we do not know which properties play which roles. We know that T is true (we can assume) and that it has a unique actual realization and this is all that is required to know which properties play which roles. The property that plays the 17th role is the property that *actually* plays that role. The second response charges the Humility argument with being a version of a skeptical argument. It then suggests that whatever one's chosen reply to general external-world skepticism can apply just as well in the case of knowledge of the fundamental properties.

It is argued that the reference fixing response is far from straightforward. This is because, it is argued, the ignorance ascribed to us by Lewis is exactly the ignorance ascribed to subjects by the two-dimensionalist in their explanation of apparent cases of the necessary a posteriori and contingent a priori. One way of summarizing the point is to say that for the two-dimensionalist, for a subject to know which (secondary) proposition has been expressed by some sentence it is necessary that they are in a position to tell for any world, given a complete description of that world, whether the (secondary) proposition is true or not at that world. This is what subjects cannot do in cases of the necessary a priori and contingent a-posteriori where they are ignorant of which secondary proposition is expressed. This is also what subjects cannot do in the humility case. We are unable, that is, to know whether the secondary proposition expressed by 'the property that *actually* plays the 17th role plays the 17th role' is true in the world in which *a* plays the 17th role or the world in which *b* plays the 17th role.

The reference fixing response must therefore recognize that it stands at odds with the two dimensional framework. Although it is beyond the scope of this thesis to consider in detail the plausibility of the two dimensional framework, it can be noted that its proponents have arguments for their position. The reference fixing response must therefore meet these arguments or qualify its conclusion.

Following the investigation of the reference fixing response and two-dimensionalism it was possible to better assess the response from skepticism. It was argued that the response from skepticism fails. The response from skepticism argued that the humility argument was just a species of external world skepticism; just as the sceptic attempts to deny knowledge by drawing attention to in-eliminable possibilities on which our beliefs would be false, so does the quiddistic sceptic. However it has been argued that the response from skepticism is misguided. Specifically it was argued that the response from skepticism faces a dilemma: Either there is no relevant belief for a response to skepticism to save, or any such belief is immune from skeptical doubt.

The overall conclusion of this chapter is that the humility argument presented by Lewis in Ramseyan Humility is stronger than has been previously supposed. In particular it has been argued that Lewis' conclusion is one that emerges naturally given quidditism and commitment what is known as two dimensional semantics. Therefore, criticism of Lewis' argument must take into account that it stands at odds with this wider philosophical position. It was also suggested that a popular argument for quidditism may well require two dimensionalism as a premise; therefore Lewis' argument is of even greater relevance.

David Lewis was quite aware we can be sure of the apparently counter-intuitive consequences of quidditism, and he found the conclusion of humility to be an acceptable conclusion of a philosophical position. It is therefore not the suggestion of this chapter that even if one's other commitments along with quidditism entail humility, that one must reject quidditism. It has been the purpose of this chapter to merely make more explicit the relation of these commitments to quidditism and humility.

In the following two chapters, two views that deny QT will be considered.

Chapter 2 – The Pure Powers View

Introduction

In this chapter a particular view about the relationship between properties and the powers they confer that rejects QT will be considered. This will be called the pure powers view. What is distinctive about the pure powers view as a view that rejects QT is that the pure powers view takes properties to *consist in* their conferring the powers they do; there is nothing to any particular property other than the causal powers it confers. This I will call the constitution claim. The constitution claim appears therefore to entail a denial of QT.

QT: QT1: For each fundamental property, *P*, there is a world, *W*, distinct from the actual world and such that *P* confers different causal powers in *W* than it does in the actual world. QT2: For each fundamental property *P* there exists a world that contains *P* and a distinct property *Q* such that *P* and *Q* confer the very same causal power(s).

The constitution claim is the claim that properties consist in the conferring of the causal powers they do. This is to be understood such that a particular's possession of some property *just is* its possession of some power (or powers). It can be seen how, *prima facie*, the constitution claim entails a denial of QT1. If properties consist in their conferring certain casual powers then it would appear to be straightforwardly not possible for a property to confer different causal powers in a different possible world. This is seemingly necessity by identity. The constitution claim, *prima facie*, entails a denial of QT2. QT2 implies that properties cannot be individuated by

the causal powers they confer, since according to QT2 for any property another property could have conferred exactly the same causal powers. However, if a property just is the powers it confers then no two properties – actually or possibly – could confer the same powers. So the pure powers view entails the denial of QT2.

Whilst the constitution claim seemingly entails a denial of QT, dialectically we can understand the pure powers view as a view that denies QT and supports this denial with the constitution claim. Or at least, this is how the dialectic will be understood here. That is, it is to be supposed that the initial motivation for the pure powers theorist is the denial of QT. The pure powers view's constitution thesis then provides grounds for this denial. This chapter is concerned with understanding the constitution thesis and assessing whether the pure powers view is a plausible denial of QT.

Overview

In section 2 the pure powers theory will be introduced. It will be seen that the pure powers theory denies QT and that it does so on the grounds of the *constitution thesis*. The constitution thesis is the thesis that *all there is* to the essence of some property is conferring the powers it does. So what it is for a particular to possess some property is for that particular to possess some power(s). It will be seen that the constitution thesis prima facie entails a rejection of QT. It is suggested that this is motivation for holding the pure powers theory, since it provides an answer to the question of *why* QT is false.

In section 3 the constitution thesis is considered in detail. What does it mean to say that all that it is for a particular to possess a property is for that particular to possess some power(s)? This turns on the account given by the pure powers view of powers themselves. It will be seen that the pure powers view wishes to hold a more

robust picture of powers than an account on which the possession of a power is merely the obtaining of some counterfactual conditional. The plausibility of such a version of the pure powers view on which a counterfactual conditional account of powers is accepted is considered briefly in section 4.

The pure powers view is then seen to face a challenge in providing a richer notion of power. The challenge is to distinguish their 'powers' from the 'properties' of other views and thereby make the constitution thesis substantive. This is of particular significance given the claim that the possession of a power is something over and above the obtaining of a counterfactual conditional, for it will be seen that, in fact, it is then less than straightforward whether or not the constitution thesis does in fact entail the falsity of QT.

It is then argued that the most plausible understanding of the constitution thesis takes it to be the thesis that the essence of a property is constituted by that property's relations to other properties. So what it is to be a particular property, P, is to be that property whose instances affect the instantiation of other properties in the way P does. So certain relations hold between properties that determine how their instances will behave. In *this* sense the pure powers view is similar to Armstrong's view touched on in the previous chapter, where the necessitation relations that holds between universals determine the behaviour of their instances.

For Armstrong, the holding of the particular necessitation relations is a contingent matter. For the pure powers theorist the picture is quite different: On the pure powers view a property's standing in the particular relations to the other properties is constitutive of that property. It is in this sense that it will be suggested the constitution thesis should be understood. That is, the claim that properties *are* powers is the claim that

properties are constituted by the relations quasi-causal relations they stand in to one another. I say *quasi* causal only to emphasize that the relations in question hold between properties and not particulars.⁴⁵ On the pure powers view as it will be understood below, it is these relations that determine the behaviour of particulars and underwrite the laws of nature.

It will be seen that on such an understanding of the view, the constitution thesis does appear to provide entail the falsity of QT and so the pure powers view does have a substantial account of the falsity of QT.

However, understood in this way, the pure powers view is open to what Alexander Bird calls the identity regress argument. The identity regress argument claims that since every property relies for its identity on further properties, who themselves rely on further properties for *their* identity, and so on, no property can get its identity fixed. In section 5.1 this argument is distinguished from a connected argument – what I will call the argument from identical essences. In section 5.2 Bird’s response to the identity regress argument is given. In section 5.3 it is shown that Bird’s response is in fact a response to the identical essences argument and not the identity regress argument.

Whilst no independent argument for the principle behind the identity regress argument seems forthcoming it does seem to have some intuitive force. As such, all things being equal and absent an argument as to why the principle is false, a view that is not susceptible to the identity regress argument should be preferred over one

⁴⁵ To say that the relations are *quasi* causal because they hold between properties and not particulars might sound strange on some views of causation and properties: For instance, if one held a theory of events as in (Kim 1976) on which events were property exemplifications and that causal relations held between events. So when I say property here, I mean property types. For, as I understand the view, it is the relations among types that on the pure powers view determine how their instances will behave. These constitutive relations among properties are quasi causal then since they hold between, what I would imagine on most views would be, abstracta.

that is. The grounded view, to be argued for in the next chapter, denies QT but is not open to the identity regress argument and so should be preferred.

2. The pure powers view

Perhaps the first explicit pure powers view in the contemporary literature was offered by Sydney Shoemaker in 'Causality and Properties'. In this paper Shoemaker argued that an object's possessing a particular property consisted in its possession of a cluster of 'conditional powers'. These powers are *conditional* on the possession by the object of further properties. So a knife shaped object has the conditional power to cut wood – conditional on being made of, for instance, steel.

Shoemaker's primary motivation in 'Causality and Properties' was epistemological: If there was anything else to a property other than its conferring certain powers in certain conditions then there would exist certain epistemological and semantic barriers between us and properties.

My reasons for holding this theory of properties are, broadly speaking, epistemological. Only if some causal theory of properties is true, I believe, can it be explained how properties are capable of engaging our knowledge, and our language, in the way they do. (Shoemaker, 'Causality and Properties', in (Shoemaker 2003 p.214))

Perhaps it is correct to say that in more recent pure power theories the motivation for their rejection of QT is still at least in part motivated by the epistemological problems that arise on the acceptance of QT. That QT can

lead to epistemological difficulties is considered in chapter 1. However, I do not take the primary motivation for the *constitution claim* to be the desire to avoid *epistemological* problems. Once QT has been rejected, the motivation for the constitution claim is metaphysical.

The motivation for the pure powers view as is understood here consists in the availability and simplicity of the answer to the metaphysical question of why QT is false. Properties are nothing over and above the powers they confer; there is nothing to being a particular property other than conferring the causal powers it does. This is necessity grounded in identity – the identity of properties and the conferring of particular causal powers – and, as such, is on traditionally safe ground.

The pure powers view therefore purports to answer two questions that arise for any view that rejects QT. Firstly, the pure powers view has an answer to the question of *why* properties, in worlds containing the same properties, necessarily confer the same powers (i.e., why QT1 is false). Secondly, it has an answer to the question of *why* two distinct properties couldn't confer the same causal powers (i.e., why QT2 is false).

More detailed discussion of what is behind the constitution claim is offered in the next chapter in the context of an argument for a denial of QT that does not make the constitution claim. For the purposes of this chapter we can see the motivation for the pure powers view as being the availability and simplicity of the answers to the questions raised by a denial of QT. The details of the constitution thesis will now be considered.

3. The constitution claim

It will now be seen that a challenge that faces the pure powers view is in substantiating the constitution claim. What exactly does it mean to say that a particular's having some property just is its possession of some power(s)? This is, as one might expect, going to turn on the account offered of causal powers. The *challenge*, it will be seen, is in providing an account of powers that sufficiently differentiates them from properties; only then is it clear what is being said when it is claimed that properties *are* powers.⁴⁶

In this section it will be considered how we ought to understand the constitution claim. It will be argued that if the pure powers view wishes the constitution claim to be a substantial claim – and so differentiate the pure powers view from a view that denies QT but does not make the constitution claim – and if it wishes to avoid the possession of a power by a particular being merely the obtaining of some counterfactual conditional, then the pure powers view must understand powers in the following way: a property is constituted by its quasi-causal relations to other properties. These relations are those that determine the behaviour of the instances of those properties. A simple case may be that relation M holds between properties P and Q, where this determines that an instance of P causes to come about, in certain circumstances, an instance of Q.

3.1

As a means to understanding the constitution claim, the pure powers view can be compared to a distinct view that also denies QT. To construct a view that does not hold the constitution thesis but denies QT we can begin with a view that, like quidditism, takes the identity of properties to be intrinsic and primitive. On quidditism the identity of a property is taken to be independent from the causal powers it confers, these being determined

⁴⁶ This isn't always a challenge taken up by pure power theorists, however. For instance, in 'The Ungrounded Argument', Stephen Mumford (2006) argues for what appears to be a pure powers view but he at no point attempts to say what it means to say that properties are ungrounded dispositions.

by the contingent laws of nature. However, if we begin with this model and then suppose instead that the actual laws of nature are *necessary*, we obtain a view that denies QT. On the assumption that in the actual world no two properties confer the same causal powers we can suppose that the necessity of the laws of nature means that no two distinct properties in any two worlds confer the same powers.

On the assumption that the causal powers conferred by a property are specified by appeal to the way that property figures in the laws of nature, this necessitarianism will appear superficially very similar to the pure powers view. Since on this view the laws of nature are taken to be necessary, every property confers the causal powers it does necessarily. Additionally, on the above assumption about the actual laws of nature – that no two actual properties confer the same causal powers – it follows that for any property there is no distinct property, in *any world*, that confers the same causal powers as it. In these two important respects, necessitarianism is the same as the pure powers view. With respect to the causal powers properties confer, there is no modal difference between necessitarianism and the pure powers view.

The views supposedly differ in that necessitarianism does *not* make the constitution claim – it does not take the essences of properties to consist in the causal powers they confer. So a particular's having a particular property does not *consist in* its conferring certain powers. The particular possesses the property and its possession of the relevant powers follows, necessarily, from its possession of the property; yet the possession of the property and the possession of the powers are supposed to be distinct, with the former only *along with the laws of nature*, explaining the latter. It is the task of this section to make sense of the pure powers thesis in a way that will allow an appreciation of this difference.

3.2

The pure powers view's holding the constitution thesis places an onus on the view to say something substantial about powers. If there is nothing to the essence of a property other than its conferring the casual powers it does, and so nothing to a particular's having some property other than its possession of certain powers, then it is important to be clear on the account of *powers* in question. If what it is for a particular to have some property is for it to possess certain powers, then what is it for it to possess these powers? An intuitive first attempt at saying what it is for a particular to have some power will look something like the following. (1) A particular, *a*, has power P, if *a* will M in condition S.

There are, however, notorious difficulties in giving a counterfactual conditional analysis of dispositions.⁴⁷ These are not arguments that will be rehearsed here -- for our purposes, a few observations on the debate will suffice. One way of understanding the project of giving a counterfactual conditional analysis (which as I understand it is roughly Lewis'⁴⁸) is the following: If it is possible to account for dispositional talk in terms of counterfactual conditionals, the semantics for which does not require reference to dispositional properties, then it is not necessary to posit dispositional properties. Criticism of the counterfactual analysis centres on cases where some dispositional predication is intuitively true of an object yet the relevant counterfactual is false, and vice versa. The criticism of the analysis has been seen as a defence of dispositions; since dispositional talk cannot be analysed away, dispositions must be (or at least can be) real properties of things⁴⁹.

However, the defence, if successful, opens up a question for the defender of the reality of dispositions. Whilst the counterfactual analysis purported to explain away dispositional talk, it did so by using the principal way by

⁴⁷ See (Lewis 1997), (Martin 1994) and (Smith 1977)

⁴⁸ See (Lewis 1997)

⁴⁹ See (Martin 1994)

which we understand dispositional predication; that is, somehow counterfactually. If what it is for a particular to possess a disposition cannot be captured counterfactually, how are we then to understand what it is for particulars to possess dispositions/powers?⁵⁰

It has been suggested in the literature (primarily as a means of bolstering the conditional analysis), that the relevant counterfactuals can involve *ceteris paribus* clauses and thereby avoid the counterexamples given to the counterfactual analysis.⁵¹ In the context of the current debate, such a suggestion needn't open the pure powers theorist up to the apparent problems posed by the counterfactual analysis of dispositions. For, plausibly, such a project of counterfactual analysis cannot be undertaken against the proposal that *all* relevant properties are dispositions⁵². The project aimed to reduce all dispositional talk to counterfactuals, with the semantics for these counterfactuals appealing to the counterfactual instantiation of 'categorical' properties. Absent any such properties the project is, presumably, untenable. This is to say then that it is possible for us to entertain an account of powers in terms of *ceteris paribus* counterfactual conditionals.

For even if it is possible to describe a particular's possession of a power in terms of a (*ceteris paribus*) counterfactual this does not thereby determine the relationship between the powers and the associated conditionals for the pure powers view⁵³. As Bird describes it:

⁵⁰ One way in which philosophers who have understood themselves to be 'realists' about powers (or dispositions) might answer this question is in terms of attributing the reality of a power to its being grounded by some 'categorical' property (Smith 1977). Since the thesis in question concerns *fundamental* properties (and additionally that *all* fundamental properties are powers) this answer is straightforwardly not available.

⁵¹ See (Lewis 1997), Bird (2007)

⁵² I will not be considering the possibility that a counterfactual analysis could make appeal to non-fundamental non dispositional properties.

⁵³ As we might think considerations of parsimony would tell against the independent reality of dispositions/powers if the traditional conditional analysis were successful (and, as has been noted, if the thesis was not that all properties are powers).

Even if it were true that dispositional statements are equivalent to counterfactual or subjunctive conditionals (which, strictly, they are not), we need not infer that dispositional properties inherit their reality or acceptability from those conditionals. (Bird 2007, p.102)

There appears to be two broad views the pure powers view can take on the relationship between powers and their associated conditionals. On the one hand, against what appears to be Bird's advice, the pure powers theorist could hold that the possession of a power by a particular just is the obtaining of some conditional. To say that the possession of a power by a particular is just the obtaining of some conditional, is, it will be supposed here, to say that there is nothing about the particular that makes the conditional true. The plausibility of taking this option will be discussed in section 4.

On the other hand the pure powers theorist could take the possession of a power by a particular to be distinct from the obtaining of the relevant conditional, though it may entail it.⁵⁴ If the pure powers theory were to take this latter option and deny that the possession of a power by a particular is nothing but the obtaining of a conditional they may, instead of (1) above, describe what it is for a particular to have some power as follows.

(2) A particular, *a*, has power, *P*, if *a* is *such that a* will *M* in condition *S*.

⁵⁴ Equally, if the pure powers view takes the possession of a property (power) to be distinct from the associated counterfactual then it is possible that the relation between the possession of a power and the relevant counterfactual can be taken to be weaker than entailment. So, rather than entailing a *ceteris paribus* counterfactual, the pure powers view could instead say that if a particular possesses some power then, *ceteris paribus*, the relevant counterfactual conditional will hold.

The task then facing the pure powers theorist is in satisfactorily accounting for a difference between (1) and (2). One problem facing the pure powers theorist in this regard is in maintaining its distinctness from a view that denies QT but also denies the constitution claim.

This difficulty can be seen if we compare the pure powers view with necessitarianism, introduced above. The question is whether we have, so far, the resources to distinguish between that view and the pure powers view under consideration (one that takes (2) to be the better description of a particular's possession of a power). The difficulty is that it would seem that necessitarianism could equally endorse (2) as an account of what it is for a particular to possess a *property*. So: A particular, *a*, has *property*, *P*, if *a* is such that *a* will *M* in condition *S*. Is there more than a nominal difference then between the pure powers view and a necessitarian quidditism that denies the constitution thesis? Both seemingly hold that for a particular to possess a property is for that particular to be such that it will (*ceteris paribus*) *M* in condition *S*. And both take this claim to be necessary.

It will now be argued that a possible understanding of powers and the constitution claim that might emerge given the above problem raised by necessitarianism will not suffice.

On the pure powers view, the explanation of why a particular property (power) supports a particular conditional is supposed to be provided purely by reference to the property. There is no need to invoke the laws of nature in the explanation of this fact. Indeed, on the pure powers view, properties are placed to *explain* the laws of nature.⁵⁵ For necessitarianism however, the laws of nature play an essential role. A full metaphysical

⁵⁵ It is then open exactly what view the pure powers theorist wishes to take on the Laws. For instance Mumford (2004) argues that laws of nature are then redundant, Bird (2007) disagrees.

explanation of why a property confers the power(s) on that view must (*ex hypothesi*) make reference to both the property *and* the laws of nature.

We might therefore consider an understanding of 'power' such that anything is a power if and only if the metaphysical explanation of why its instantiation entails the conditionals it does does not require reference to the laws of nature. However, such a definition is unsatisfactory for at least two reasons.

Firstly, it fails to distinguish the pure powers view from the grounded view, to be argued for in the next chapter. The grounded view takes the nature of properties to explain why the properties support the relevant conditionals but it is intended to present a distinct view from the pure powers view. On the present suggestion the grounded view would be a pure powers view and we would need a further way to distinguish the view I will go on to suggest should be taken to be the pure powers view from the grounded view.

Secondly and more importantly (since the first problem is strictly a dialectical problem of mine), on the understanding of the constitution claim under consideration the pure powers view *fails to account for the falsity of QT*. The pure powers view's ability to account for the falsity of QT was suggested to provide the principal reason for holding the view and so an understanding of the view on which this is undermined should be rejected. Let us concentrate just on QT1.

Prima facie, the pure powers view entails the falsity of QT1 since if properties are identical with powers, this identity seemingly provides solid ground for the claim that properties confer powers necessarily. Yet if we take definition of powers in question to provide this account why QT1 is false I think there is a danger of

equivocating on the use of 'power'. For if 'power' in QT1 is understood on the model of (1) above⁵⁶ then no substantive explanation of the falsity of QT1 is provided. To explain:

If QT1 is the thesis that the instantiation of the very same properties in some non actual world entails different counterfactual conditionals, then, on the current definition of powers, the pure powers theory entails the falsity of QT1. However, on the current definition of 'power' the constitution thesis fails to provide an account of why this is so. The constitution thesis tells us that properties are powers, and powers have been defined such that their instantiation confers particular conditionals necessarily. However, there is nothing in the constitution thesis to account for this necessity; that powers necessarily entail conditionals is merely definitional. Comparing again the view to necessitarianism, with 'power' understood in the above way the pure powers view has no more substantial account of the falsity of QT than does necessitarianism.

To summarise. It seemed that the constitution thesis (and so the pure powers view) provides an account of why properties confer powers necessarily since it holds that properties *are* powers. However, say that we understand QT1 as claiming that properties do not confer the powers they do of necessity where this is taken to mean that properties do not entail the conditionals they do of necessity, when instantiated. Now, if the pure powers view wishes to reject the understanding of powers on which a particular's possession of a property/power is nothing but the obtaining of a conditional (as extant pure powers theories do) then the pure powers views account of why QT1 is false is less straightforward. On the account of powers just argued to be insufficient, a power was taken to be a property whose instantiation entails the conditionals it does of necessity. On such an account the constitution thesis entails the falsity of QT1. However, the seemingly obvious explanation of why, given the

⁵⁶ (1) A particular, *a*, has power P, if *a* will M in condition S.

constitution thesis, QT1 is false, is lost. Properties are powers, where powers are properties whose instantiation entails the conditionals they do necessarily (without the invocation of the laws of nature). Yet nothing in this account of powers tells us *why* properties are this way.

We require then a way of distinguishing between distinct views that deny QT that goes beyond the involvement of the laws of nature. Particularly, we require an understanding of powers and the constitution thesis such that an account is available for why QT is false.

3.3

In order to provide such an understanding of powers and the constitution thesis, we can look again at (2).

(2) A particular, *a*, has power, P, if *a* is *such that a* will M in condition S.

Now, to say that *a*'s possession of P *just is a*'s being such that it will M in conditions S, plausibly makes *a*'s being this way (*a*'s having P) dependent on M and S. Since M and S will make essential reference to further properties (powers) *a*'s possession of P will be dependent somehow on further properties (powers). So, if we suppose that P is fragility, *a*'s being fragile is *a*'s being such that it will break if dropped (say).

Again this must be read in a way that distinguishes it from necessitarianism, for on that view also it is true that *a*'s being fragile is *a*'s being such that it will break is dropped. Let us say that on the pure powers view, *all there*

is to *a*'s being fragile is being such that it will break if dropped. This is not true of necessitarianism. Whilst *a*'s being fragile entails that it will break if dropped, *a*'s being fragile is supposedly independent of this.

So on the pure powers view, to say that *a*'s being fragile is *a*'s being such that it will break if dropped is to (partly) specify the *essence* of the state of affairs of *a*'s being fragile. The essence of the state of affairs of *a*'s being fragile depends on further powers. For *what it is* (all it is) for *a* to be fragile is for *a* to be such that it will break if dropped. So we can say that *a*'s possession of fragility somehow depends for its essence on breaking and dropping.

I suggest that this is the only way to make sense of the pure power view's constitution claim in a way that distinguishes it both from any position that denies QT (yet does not make the constitution claim, e.g. necessitarianism) and from a view on which the possession of a property (power) by a particular is merely the obtaining of some counterfactual conditional.⁵⁷

Thus, what it means to say that a particular's possession of a property *just is* its possession of some power(s) is that the essence or identity of the state-of-affairs that is *a*'s possession of P is partly constituted by its relation to M and S.⁵⁸ What are M and S? In the definitions given, M and S appear most naturally as event types – in the

⁵⁷ I talk here and below in terms of states of affairs. This is intended to be neutral between views that accept and views that deny the existence of particularized properties – 'tropes' or 'modes'. It is being assumed that views that do accept such entities can also make sense of the state of affairs which is a particular's possession of a trope. In the following discussion, where the nature of states of affairs is in question one could replace such talk with the nature of tropes. So the constitution thesis would be that tropes are constituted by their relation to the relevant stimulus and manifestation event types.

⁵⁸ Strictly, the argument considered only requires *a*'s possession of P to be constituted by its relation to one of M or S since this would suffice to distinguish the view. This detail is not relevant to the issues to be discussed.

example, dropping and breaking. So the state-of-affairs that is *a*'s possession of M is partly constituted by its relation to M-type and S-type, rather than to any particular possible M and S event.

That it is event *types* (rather than particular events; a particular dropping and a particular breaking) is the more plausible way to construe the view since this avoids (at least in the first instance) *a*'s possession of P being constituted by its relation to some merely possible event. The objection that states of affairs on a pure powers view involve relations to something non-actual given by Armstrong and discussed by Alexander Bird.

...[H]ow can a state of affairs of a particular's having a property enfold within itself a relation (of any sort) to a further first-order state of affairs, the manifestation, which very often does not exist? We have here a Meinongian metaphysics, in which actual things are in some way related to non-existent things (Armstrong, 1997, p.79)

Bird argues that if the relation is taken to hold between types (universals, say) then there is nothing non-actual involved. For Bird, the universal P is related to the universals involved in the event types M and S. Bird puts this the following way:

The essence of a potency [power] does involve a relation to something else...[T]he relation in question is among universals. Thus as regards the nature of the potency itself, there is no need to invoke a relation to anything objectionable. Now let us to our attention to the instantiation of a property by a particular. The nature of this fact is fully explained by explaining the nature of the potency (which I

have just done), explaining the nature of the particular..., and that the latter instantiates the former.

(Bird 2007, p.107)

As I understand Bird's suggestion, it is this. The essence of some particular power consists in its relations to other powers (so the universal fragility consists in its relations to the universals involved in breaking and dropping). The essence of *a*'s possession of P – so what it is for *a* to have P – consists in *a*'s instantiating a universal whose essence is so determined. It is Bird's claim that this avoids the potentially problematic possibility of *a*'s possession of P consisting in its relation to some non-existent (since the stimulus conditions may never obtain) manifestation event.⁵⁹

The way we ought to understand the pure powers theory is then as follows. A particular's possession of some power P *consists in part* in the relation(s) that that state-of-affairs (of the particular's possession of P) holds to the relevant stimulus and manifestation event-types⁶⁰. It will be assumed that the identity of these event types depends on the identity of property types. Therefore the identity of property will consist in its relation to other properties – in the first instance those involved in the relevant stimulus and manifestation event types.

⁵⁹ Bird suggests that the explanation of the nature of properties (powers) as universals is prior to the explanation of the nature of the states-of-affairs of particulars' instantiating properties (powers), in so far as it is suggested that the nature of the latter is explained in terms of the nature of the former. This, I take it, is a standard feature of views of properties invoking universals. Whether the relational essences of the properties (powers) posited by the pure powers view under consideration cause difficulties for this ordering of explanation will not be considered here. Though it can be very briefly noted that such a difficulty might arise if the constitutive *relation* between the universals itself depended on the natures of the states-of-affairs that the universals are supposed themselves to be (in part) explanatory of.

⁶⁰ If Bird means for this *not* to be the case, and for the relevant states-affairs to have wholly intrinsic natures, I fail to see how this is to be understood. If the natures' of the states-of-affairs are to be explained by the *relational* natures of the universals I fail to see how the states-of-affairs themselves are not relational in nature.

This suggestion of how the constitution claim should be understood also fits George Molnar's account of powers given in his *Powers: A Study in Metaphysics*.⁶¹ Molnar claims that there are a range of features possessed by powers, one of which he terms 'Directedness'⁶²

Directedness is an essential feature of power properties... Having a direction to a particular manifestation is constitutive of the power property. A power's type-identity is given by its definitive manifestation. So the identity of dispositional tropes [or the states of affairs considered above] is as determinate, but no more so, than the identity of the manifestation events towards which the dispositions are directed. (Molnar 2003, p.60)

Here Molnar, in terms of 'directedness', is exactly in line with the suggestion that a pure powers view should understand powers as constituted by their relation to manifestation types. It is to be assumed that these manifestation event types are going to depend for their own identity on the identity of properties which the pure powers theorist is going to equally understand as powers.

It is the suggestion of this section that this is the best way to make sense of the constitution thesis; the best way to make sense of a view that claims that all fundamental properties 'just are' dispositions or powers. It is required that the thesis is understood in this way to differentiate it from a thesis that also denies QT but takes properties and powers to be distinct.

⁶¹ Strictly, Molnar's view is not a pure powers view since all the views under consideration here are what was called in the introduction unitary views. Molnar claims that some fundamental properties are powers, but some are 'categorical'. It is not perfectly clear what Molnar means by categorical, though it includes mainly 'spatial' properties.

⁶² Although the point won't be argued here, the other features identified (listed in note 7, above) I take to be common 'non power' properties also.

We have arrived then at the following picture of the pure powers view.

Properties stand in certain relations to one another. These are the relations that determine that their instances entail certain conditionals. For a familiar -- non-powers -- model we can take Armstrong's view.⁶³ For Armstrong a necessitation relation obtains between certain universals such that, to put it somewhat crudely, if pNq (where p and q are properties and N the necessitation relation) an instance of p causes/necessitates an instance of q . As we saw in chapter 1, Armstrong takes these relations between universals to hold only contingently. Now, we can think of the pure powers view as beginning with this model but taking the holding of these relations between the properties as being *constitutive* of the identity/essence of the properties. As such, on the pure powers theory p is the very property it is *because* it stands in N to q . The *constitution thesis* is then the thesis that properties are *constituted* by the relations they hold to one another.

On this understanding of what it is to be a power, the constitution thesis *does* provide an account of the falsity of QT. Given the constitution thesis, what it is to be a particular property P is to stand in those relations to the other properties that determine that the instances of P entail the counterfactuals they do. QT1 is false since for P to entail different counterfactuals it would have to be differently related to the other properties. This is not possible since any property that is differently related would not be P , since it is constitutive of P that it stands in the relations it does. QT2 is false since for another property to confer the same causal powers as P , it would have to be related as P is to the other properties -- since all there is to being P is being related as it is to the other properties, any property that is so related *is* P .

⁶³ For instance, see (Armstrong 1983)

3.4

In this section a particular understanding of powers and the constitution thesis has been argued for. It was initially observed that since the constitution thesis is the thesis that properties just *are* powers, the pure powers view is required to give a clear account of what a power is. This was seen to be a less than perfectly straightforward task. In particular, if the pure powers view wished for powers to be distinguished from counterfactual conditionals⁶⁴ than it is necessary to give an account sufficient to distinguish them from the properties of other supposedly distinct views.

It was argued that the account could not be provided on entirely modal grounds. To demonstrate this, the pure powers view was compared to a view which was called necessitarianism. This view was generated by beginning with a view about the nature of properties that would be found in a view such as quidditism – where the nature/identity of properties is distinct from the causal powers they confer— and then supposing that the laws of nature were in fact necessary. So this necessitarianism and quidditism supposedly agree entirely on the nature of properties but necessitarianism holds (where quidditism does not) that the laws of nature are necessary. Necessitarianism has a consequence the falsity of QT. However, it does not take properties to be powers. Therefore if the pure powers view wished to distinguish itself from such a view as necessitarianism it must give an account of powers more substantial than the claim that powers entail certain counterfactual conditionals necessarily.

⁶⁴ Or perhaps rather truths/facts/propositions about powers to be distinct from counterfactual conditionals.

It was then considered that since the pure powers view and necessitarianism differ over the explanation they give of *why* the possession of a power/property entails the conditionals it does – the latter invoking the necessary laws of nature – this could form the basis of an account of powers: For instance, a power could be defined as a property that entails the counterfactual conditionals it does necessarily and where the metaphysical explanation of this fact does not make necessary appeal to the laws of nature. However, two problems were identified with this definition.

Firstly, it fails to differentiate the pure powers view from the view to be argued for in the next chapter, the grounded view. Secondly, and more importantly, it fails to allow for the pure powers view to provide an account of *why* QT is false. This is significant since the promise of an account of why QT is false was taken to provide the principal reason for holding the view. The definition of powers in questions failed in this respect for the following reason. Although properties confer powers necessarily (since they are by definition ‘powers’) the possession of a power is supposedly a distinct state of affairs from the obtaining of a counterfactual, the former entailing the latter. The problem is that although powers are defined as being those properties whose instantiation entails the counterfactual conditionals they do necessarily (without need to invoke the laws), no account is given as to why they do so. As such, on this definition, the pure powers view is without an account of why QT is false.

The suggested understanding of powers was then given. This was an understanding of powers on which a power is a property that is constituted by the relations it holds to other properties – in the first instance those properties that appear in the conditional(s) it entails. Simplified, this constitutive relation is the relation such that when it holds between two properties, instances of one cause to come about instances of the other. This was shown to be in accord with extant pure powers views.

Importantly, this understanding of powers provides the pure powers view with an account of why QT is false. Properties/powers are constituted by the relevant causal relations they bear to the properties/powers that feature in the conditionals their instantiation entails. So to the question of why a property could not have conferred different powers (or entailed different counterfactual conditionals) than it in fact does, the pure powers theory has the following answer. A property is constituted by the quasi causal relations it bears to the relevant properties (who are similarly constituted), so it is of the essence of P to be that property that causes M in condition S. Causing M in condition S is all there is to being P. This is why P could not have conferred different powers (so this is why QT1 is false). This is also why no other property could have conferred the very same powers – for to cause M in condition S is just to be P (so this is why QT2 is false).

The pure powers view as it is understood here has an explanation of why QT is false. It is suggested this is the principal reason for holding the view. The ultimate adequacy of the explanation will not be considered here. What will be considered is whether the account of powers that provides the view with this explanation opens the view up to a problem. On the pure powers view the identity of each property is constituted by the relations it bears to other properties; properties whose identities are similarly constituted. The potential problem that will be discussed in detail in section 5 is that this situation is not in fact possible. It is potentially problematic since each property looks to another for its identity, and that to another, and so on, in a way that some philosophers have argued prevents any property from having determinate identity.

Before considering this argument and a response offered by Alexander Bird, the following section will briefly consider an argument concerning the prospects of a view that, unlike the suggested version of the pure powers view given above, takes the possession of a property by a particular to be nothing but the obtaining of some

counterfactual conditional. This is to see powers on the model of (1) and to take a particular's possession of a property to be nothing but the obtaining of some conditional. A possible problem with this view voiced by Simon Blackburn and response from Richard Holton will be considered in the following section. The response will be argued to be wanting, yet the position is not found to be incoherent.⁶⁵

4. Bare Counterfactuals

Before continuing to consider the principal objection to the pure powers theory – the identity regress argument – a version of the pure powers theory mentioned above will be briefly discussed. This is the view that holds that a particular's possession of a property consists in nothing more than the obtaining of some counterfactual. We can call this view the mere-counterfactuals version of the pure powers view. Simon Blackburn (1990) argues that such a view is unacceptable. Richard Holton (1999) argues that things are not as bad for the view as Blackburn suggest - that the view, whatever its merits, is not incoherent.

Here it will not be argued that the view is incoherent. However, it will be merely argued that Holton's defence is unsatisfactory and that the view is therefore less plausible than he supposes. In short, Holton argues that the pure counterfactuals view can adopt a 'neighbouring world semantics' for its counterfactuals. It will be shown that the view cannot adopt such a semantics as the ordering of worlds itself depends on the truth of the counterfactuals in question.

⁶⁵ Jennifer McKittrick (2003) discusses the possibility of a 'bare counterfactuals' under the section 'biting the bullet' and finds its an open possibility. However, whilst she sees this as only one option for the pure powers theorist (or in her terms 'bare dispositionalist') the discussion of Blackburn/Holton in section 4 perhaps undermines somewhat her reasons for finding the position plausible. This will not be argued for here.

In 'Filling in Space' Simon Blackburn considers whether all properties could be dispositions and finds the following problem:

The problem is very clear if we use a possible worlds analysis of counterfactuals. To conceive of all the truths about a world as dispositional, is to suppose that a world is entirely described by what is true at neighbouring worlds. And since our argument was a priori, these truths in turn vanish into truths about yet other neighbouring worlds, and the result is there is no truth anywhere. (Blackburn 1990)

Blackburn is concerned that if all the truths about the world depend on truth about neighbouring worlds, as they plausibly will if they are counterfactuals, then since the same will be true of neighbouring worlds we have some kind of problem. He describes this problem as the vanishing of truth resulting in there being 'no truth anywhere'. It is not clear exactly what Blackburn means by this, but perhaps the general worry is conveyed.

One way of thinking about this worry is to consider the details of what it is that is supposed to make these counterfactuals true. Blackburn points out that it is truths about neighbouring worlds. The truth about these worlds then becomes truths about further worlds and so on. What Blackburn appears to be envisaging – what he describes in terms of 'vanishing' - is a kind of regress. However, a seeming difficulty seems to arise well before we have followed truth out very far from the actual world. Truth at the actual world, Blackburn points out, will depend on truth at neighbouring worlds. It is by asking at this point, '*which are the neighbouring worlds?*' that we come to see that Blackburn's regress is a potentially problematic one.

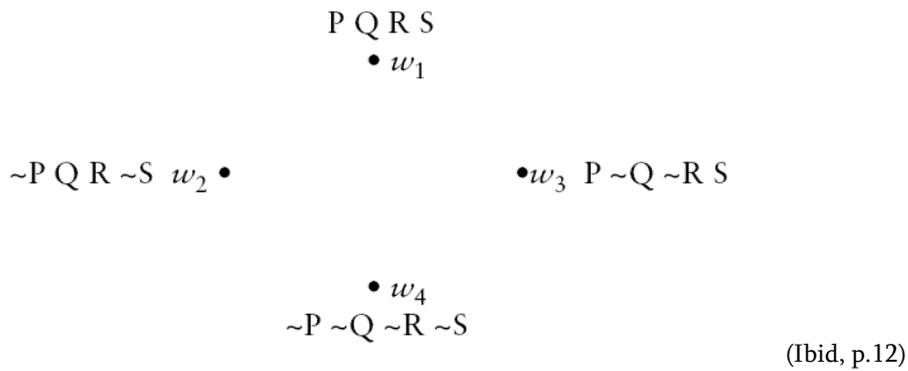
How is the closeness of worlds to be determined? Presumably by similarity between worlds. This, I shall assume, will importantly involve similarity in the instantiation of fundamental properties. However, if all the truths about the instantiation of fundamental properties are *counterfactual* then the similarity of worlds will *depend* on their closeness relations – and this is what similarity was supposed to *determine*.

In ‘Dispositions all the Way Round’ Richard Holton takes Blackburn to be arguing that a conception of a world consisting of only conditional truths is incoherent for something very much like the above reasons, and aims to provide a proof that such a conception is not incoherent. Perhaps Holton’s argument works to this extent – in showing that there is such a conception is not strictly incoherent - though it will be argued that it doesn’t show enough to prevent the conception from being quite unappealing.

Holton asks us to imagine that how things stand contingently can be captured by just four dispositional sentences and their negations:

$$\begin{aligned} P &=_{\text{df}} (R \Box \rightarrow S) \\ Q &=_{\text{df}} (S \Box \rightarrow R) \\ R &=_{\text{df}} (P \Box \rightarrow Q) \\ S &=_{\text{df}} (Q \Box \rightarrow P) \end{aligned} \quad (\text{Holton 1999, p.9})$$

‘Let us assume that similarity [between worlds] is given by the agreement over the four sentences; the greater the agreement, the greater the similarity.’ (Ibid, p.10) We are then given the following arrangement of worlds, where closeness on the page represents closeness of worlds - w_1 , for instance, is equally close to w_2 and w_3 and less close to w_4 .



‘It should be clear’, Holton states, ‘that this model is consistent on a standard possible worlds account of counterfactuals.’ (Ibid, p.12)

Thus ~P will be true at w_2 , since the nearest R world (i.e. w_2 itself) is not an S-world; Q will be true at w_2 , since the nearest S-world (i.e. w_1), is an R-world; and so on... So we have what we were looking for: a class of worlds in which the only contingently true sentences are *dispositional sentences* (or compounds of them). But that does not lead to an incoherence, nor does it mean that there is no truth anywhere; only that the total class of truths supervenes on the facts about the total class of worlds. (Ibid, p.12)

Holton's model is, then, *prima facie* plausible, though it will now then be considered what is in fact shown by this model.

This can be done by assessing it against the initial worry of Blackburn's, a worry that we might now express a little differently as follows: If all the contingent truths about a world are conditional, then what is true at world any world w_k depends on what is true at neighbouring worlds. Yet which worlds *are* neighbouring worlds depends on their similarity in respect of 'agreement over sentences' – and agreement over sentences requires us to know which sentences are true at w_k . This sounds problematically circular: we need to know which worlds are close to a world to determine what is true at that world but to determine closeness we need to know what is true at that world.

But consider what should be expected to be Holton's response:

If we don't begin by begging the question against mere-counterfactuals view, we must suppose initially that these conditional sentences express propositions that can be true or false. We can then assume that, since they are contingent, it is possible for each of the propositions to be true or false⁶⁶. This is then to suppose that there is a possible world for each combination of truth and falsity of the propositions. And then, if we take it that similarity between worlds is determined by the propositions true at them, we will have an arrangement of worlds just like in Holton's model. That is, we will have an arrangement of worlds with varying propositions true at them, such that it would appear there is no inconsistency. And, furthermore, a traditional neighbouring-world semantics for counterfactuals works as expected.

⁶⁶ This is assuming also for the sake of argument that the truth and falsity of any of the propositions is compatible with the truth and falsity of any of the others. I don't think anything turns on this assumption.

Yet one should not rest happy with this reply. Particularly telling is the place in the order of explanation offered by the account taken by the neighbouring-world semantics for counterfactuals. On such a semantics, a conditional proposition $P \Box \rightarrow Q$ is true, if it is true, *because of* what obtains at the closest P world. Yet on Holton's model as it has been presented, what entitles one to such a claim? On a neighbouring-world semantics for counterfactuals, what obtains at neighbouring worlds is supposed to be *why* counterfactual truths at a world obtain. It is therefore seemingly implausible to hold that *their obtaining* can then *determine* which worlds are the neighbouring worlds.

If this objection is sound it is important to note what it does and what it does not show. For the mere-counterfactuals pure-powers theorist wishing to uphold a neighbouring-world semantics for counterfactuals might insist that they have all they require: There are counterfactual propositions that are true at worlds, and for these true propositions in neighbouring worlds in which the antecedent obtains so does the consequent. So $P \Box \rightarrow Q$ is true when, in the closest P world, Q obtains.

Yet this is not enough to *explain*, in the sense of metaphysical explanation, *why* these counterfactual propositions are true. This was because in order to determine which worlds were neighbours it was necessary to have determinate truth values for the propositions. So in the order of explanation, the fixing of truth values for counterfactual sentences was prior to the ordering of worlds – exactly the opposite order of explanation to be expected on a neighbouring-world semantics for counterfactuals. We can see also that if we try and reverse the order of explanation we get no-where. That is, if we try and produce an ordering of worlds, (explanatorily) prior to the fixing of counterfactual truths at a world this provides no means for then assigning truth or falsity to our counterfactual sentences.

Say we ask for any particular world, what propositions are true at that world. Given that all of the propositions in question are counterfactual, to determine their truth we need to know the location of this world – which worlds are close and which worlds are distant. Yet which worlds are close is determined in part, we are supposing, by what propositions are true at our world in question, and of course this has not yet been fixed since it is what the closeness relations were supposed to determine!

If this argument is sound what it does *not* show is that it is not possible for there to be only counterfactual truths. What I think it does show is that a pure powers theory that took the possession of a power to be nothing but the obtaining of a counterfactual cannot straightforwardly draw on a neighbouring-world semantics for these counterfactuals as Holton suggests.

Reasons have been give in section 3 for thinking that a pure powers view that wishes for the possession of a power to be something over and above the obtaining of a conditional should understand powers in the way given above, on which to say that properties are powers is to say that they are constituted by the quasi-causal relations that hold between them. In this section a brief response has been offered to an argument of Richard Holton's that aimed to support the plausibility of a mere-counterfactuals version of the pure powers view. In offering this response and arguing that the mere-counterfactuals view faces a challenge in providing a semantics for their counterfactual conditionals it is hoped that strength is added to that claim the pure powers view on which the possession of a power is something over and above the obtaining of a conditional is the far more plausible version.

Given this, section 5 now turns to consideration of an argument against the pure powers view as it was understood at the end of section 3. That is, consideration of an argument against the view that properties are constituted by the quasi-casual relations that holds between them.

5. The Identity Regress Argument

The argument against the pure powers view that is to now be considered takes the relational constitution of properties on the pure powers view to be unacceptable. In short the argument is that the pure powers view is incompatible with a central truth about the individuation of entities, namely: for the identity of one entity to depend on the identity of another, that other entity must have determinate identity. On the pure powers view, for any property the answer to the question of which property it is makes a necessary appeal to the identity of another property. Yet which property *this* property is depends on a further property and so on. Since there is no obvious end to this process the criticism is that on the pure powers view no property has determinate identity and as such the view is unacceptable.

In section 5.1 what will be called the identity regress argument (just sketched above) will be introduced. As just described the outline of the argument is this: if the identity of one property is determined by another property (that it is related to in such a way as to confer certain causal powers on its instances) and *that* property's identity is determined by a further property and *that* property's identity is ... and so on, then we are given an infinite regress or vicious circle.⁶⁷ Arguments of this form have been given by a number of philosophers but

⁶⁷ Depending on whether the number of fundamental properties is infinite or not.

they often don't amount to much more than a few lines of something like the above. The challenge for the opponent of a pure powers view is to fill out this.

I will present Bird's account of the argument and what he takes to be an adequate response. I argue that there appear to be *two* distinct problems potentially caused by properties having, in Bird's terms, relational essences. One is the argument raised by Bird and attributed to E.J. Lowe and this with Bird I call the identity regress argument. The second problem of identity that is potentially raised by relational essences is what I shall call the problem of the identity essences. Through considering some simple cases it is argued that these are distinct difficulties. It is then argued that Bird's supposed response to the identity regress argument is in fact instead a response to the identical essences argument and that the identity regress argument is unaffected.

5.1

Bird interprets the identity worry as follows.

...[W]e should expect the essence of a property, its dispositional character, since it is an essentially dispositional property, to determine the identity of the property. According to the dispositional essentialist therefore, the essence of such a property is determined by its relations to other properties...and if one is a dispositional monist then those other properties also have dispositional essences. Consequently the identity of any property is determined by its relations to other properties.

...This, I think, is the real problem of circularity that critics such as Lowe have in mind when they accuse dispositional monism of some kind of regress or circularity. Dispositional essences are relational – the essence of a property is a relation to other properties. If essences fix identity, as Aristotle says, then the identity of a property is determinate only if the properties to which its essence relates themselves have determinate identity. And this is just what is ruled out by circularity. (Bird 2007, p.137)

The circularity worry is then a worry since the identity of properties is determined (if with Aristotle and Bird we take essence to fix identity) by their relations with other properties whose identity is also determined by relations with other properties. Since this is true for all properties, *no* property can have its identity determined because the other properties which are to play this determining role are also in the same predicament.

In Lowe's words, quoted by Bird:

The problem...is that no property can get its identity fixed, because each property owes its identity to another – and so on and on, in a way that, very plausibly, generates either a vicious regress or a vicious circle. (Lowe 2006, p.138)

I think the best way to make clear the nature of the apparent problem is to consider a simple case - a case in which it would seem that both the pure powers theorist and their opponent agree there is a problem of individuation. If the simple case is indeed a paradigmatic case of the regress of identity, then in understanding this case it we will be better placed to assess the pure powers view's claim that their theory is not problematic in this same way.

The aim is now to show, through a series of simple cases that there are two closely related but distinct problems of identity that arise when entities are supposed to have their identities fixed relationally. One is what has been called and what will continue to be called the identity regress argument. This is the argument voiced by Lowe, above. It claims that there is a fundamental problem with two or more entities being taken to individuate each other, since none of them has determinate identity, none of them is in a position to fix the identity of other entities. The *distinct* problem of identity that will be seen to arise is the problem of identical essences. The argument from identical essences holds that, for any two entities, if the relational facts that are supposed (*ex hypothesi*) to individuate them are the same, then they are identical.

Once it has been shown through the simple cases that these are distinct problems, the pure power theorist's response, offered by Bird, to the identity regress argument will be outlined. It will then be argued that this response is in fact a response to the identical essences argument, and not to the identity regress argument.

5.2

Perhaps the simplest instance of the regress of identity exists in the case in which there are two entities, *a* and *b*, where aRb and bRa , so that that *a* stands in R to *b* is all there is to the identity of *a* and that *b* stands in R to *a* is all there is to the identity of *b*. That is, it is supposed to be the case that what *individuates a* – what makes *a* the very thing it is – is that it stands in R to *b*. And the same is supposed to be the case with *b* – what makes *b* the thing it is merely that it stands in R to *a*. But of course *a* is *also* the thing that *b* stands in R to, and *b* is also the thing that *a* stands in R to. For relative ease of expression I will miss these additional facts out in this and

the following cases – they do not affect the points to be made and can be added to each definition if desired.

Call this case, where aRb and bRa , Case 1.

The identity regress problem is supposed to be – in Lowe’s words – that neither thing can get its identity fixed.

All there is to being a is being that thing that is R to b . So a looks to b for its identity – yet all there is to being b is being that thing which is R to a . We are presented here with an apparent case of the regress of identity.

Lowe argues that cases such as these are unacceptable; ‘two entities cannot both individuate, or help to individuate, each other’ (Lowe 2003, p.23).

This is because individuation, in the metaphysical sense [as opposed to cognitive, i.e. ‘to individuate ‘in thought’], is a determination relation: an individual object’s individuator is the entity, or set of entities, which determine – make it the case – that that individual object is the very object it is. As such, individuation is an explanatory relation: an individual object’s individuator explains why that object is the very object it is. But it would seem that explanatory relations, quite generally, cannot be symmetrical in character...That is to say, two distinct entities or states of affairs cannot each explain the other, in the very same sense of ‘explain’. (Lowe, p.24)

Lowe here appeals to individuation as an explanatory relation and the supposed fact that explanatory relations are not symmetrical. The identity of b is supposed to *explain* the identity of a ; that is, a is the very thing it is *because* b is the very thing *it* is. Lowe’s suggestion is that this rules out a explaining, in this same way, the identity of b .

However, the identity regress argument just voiced by Lowe is not the only way to see a problem of individuation in Case 1. There is, it will now be argued, a distinct problem of individuation that is the subject of what shall be called the argument from identical essences.

To make this point another case, Case 2, will be considered. It will be seen that the problem that is apparent in this case is also present in Case 1. Case 2 is introduced merely by way of making this problem clear.

This example is a straightforward extension of Case 1. Suppose we have four entities, a , b , c and d . As in the previous case each of the entities is supposed to depend for its identity on some other entity; the one it stands in R to. The relational structure in this case is as follows: aRb and cRd . So a is the entity it is because it stands in R to b , and c is the entity it is because it stands in R to d . We might initially be led by our labelling of the entities into not seeing the problem in this case. Yet the labels ' a ', ' b ', ' c ' and ' d ' are arbitrary and since what is in question is individuation, it is questionable whether in this case it is really possible that there are four distinct things available to label.

What is it that makes it the case, say, that a and c are distinct? Ex hypothesi, a depends for its identity on something other than itself, namely b . So we should say that a *just is* that entity which stands in R to b . Yet the very same point applies to b : It *just is* that entity which stands in R to a . Using the variable x in order to avoid being misled by the labels, in describing which entity a is we ought to say then that it *just is* that entity, x , which stands in R to that entity that stands in R to x .

However, we ought to follow exactly the same procedure in describing *c* and *d* and in doing so arrive at the following account of which thing *c* is: *c just is* that entity, *x*, which stands in *R* to that entity that stands in *R* to *x*. But now the accounts of which thing *a* is and which thing *c* is are identical and the same will apply to *b* and *d*. Perhaps this is grounds for concluding that Case 2 is not in fact possible: it is not possible to have four entities each individuated by the entity in which they stand in the (single) relation *R*, where *aRb* and *cRd*. The thought that this is the right conclusion I will call the argument from identical essences. The argument from identical essences is, roughly, that, for any two entities, if there is no relational fact to distinguish them – and this is what their identity ex-hypothesi depends on –, they are the same entity.

It seems that the problem for *a* and *c* that has just been described also presents a problem for *a* and *b* in the original simpler case, Case 1. So in Case 1 using the account of the essence of *a* and *b* given above we can say that *a just is* that entity, *x*, which stands in *R* to that entity that stands in *R* to *x*. The problem now faced is that it is also seemingly the case that *b just is* that entity, *x*, which stands in *R* to that entity that stands in *R* to *x*.

If, as it seems, the specifications of the essences of *a* and *b* are identical, then according to the argument from identical essences, *they* are identical. So there could not be two distinct things *a* and *b* such that, for each, their identities were determined by an entity other than themselves, where *aRb*.

I do not attempt here to give any detail or support to this argument (the argument from identical essences), though we can, I think, acknowledge its initial plausibility. Historically, symmetrical scenarios (in some ways) like Case 1 have been offered as a challenge to the principle of the identity of indiscernibles – such as that offered by Max Black (1952). But in such cases, I think it is right to say, the claim is that the identity and distinctness of individuals must rest on more than qualitative identity (perhaps on an individual's 'haecceity' for

instance). Yet in Case 1, it is being assumed that the entities are to get their identity not from any none qualitative fact, for instance, but from some relational fact/state-of-affairs. And *this* fact/state-of-affairs appears to the *very same* one for each entity. So the very thing the 'proponent' of Case 1 is appealing to to ground the identity of *a* appears to the very same thing they are appealing to to ground the identity of *b*.

The argument of this section does not require a defence of the argument from identical essences, however. What it *does* require is that the argument and the problem it appeals to are distinguished from the identity regress argument.

Consider now a third case, call it Case 3. In this case we have two purported entities *a* and *b*, such that *a* and *b* depend for their identity on the entity they are related to. For simplicity let the relations *M* and *S* be irreflexive and asymmetrical, and aMb and bSa . Following a similar procedure as above we can say that *a* is just that entity, *x*, that stands in *M* to that entity, *y*, that stands in *S* to *x*. And we can say that *b* is just that entity, *x*, that stands in *S* to that entity, *y*, that stands in *M* to *x*.

Now in this case it would seem that we no longer have the same problem of individuation as we did in the simple case with a single irreflexive relation. In the present case both *a* and *b* stand in different relations, so we have facts available to use in saying what it is that makes, for instance, *a* the entity it is. For instance *a* just is that entity, *x*, that that stands in *M* to some entity, *y*. This is not true of *b* – it does not stand in *M* to anything. As such, it seems that we have resources for responding to the argument from identical essences.

The question we can now ask is: Does Case 3 avoid the identity regress argument also? *I suggest not.* The identity regress argument holds that two entities cannot individuate each other. According to Lowe, Individuation is an explanatory relation – the identity of one entity explains the identity of another. And explanation, Lowe argued, is an asymmetrical relation. If one entity is to explain/determine the identity of another then this entity requires determinate identity – that is, it must be determinate which entity *this* entity is. But if this supposedly explanatory entity is supposed to have *its* identity determined by that entity whose identity *it* was supposed to *explain*, then it does not yet have determinate identity.

It is not obvious that this worry is in any way affected by the difference between Case 1 and Case 3; that is, by the move to having two apparently distinct irreflexive relations. The existence of two distinct relations seemingly avoids the argument from identical essences which relies on there being nothing to appeal to ground the identity of *a* that did not equally apply to *b*. Yet this change in the cases seems to provide no help in answering the original identity regress worry. The original regress worry took issue with an entity depending for its identity on an entity that in turn depended on the original entity for *its* identity. This appears to be unaffected by the fact that there appears to be, in Case 3, a unique way to specify the essence/identity of both *a* and *b*. For it remains the case that specifications of the essence/identity of both *a* and *b* appeal to the identity of the other. And it is this feature that the identity regress argument finds problematic.

The difficulty raised by the identity regress argument was that two distinct entities could not individuate each other, since for one entity to individuate another it is necessary that it be determinate which entity it is. Yet it cannot be determinate which entity it is if it itself relies for its identity on an entity in the same situation. This problem, if it is a problem, is present just as much in the case where *a* just is that entity that is larger than *b* and *b* just is that entity that is north of *a*, as it is in the case where *a* just is the entity that is next to *b* and *b* just is that entity that is next to *a*. That in the former case we have, seemingly, a way of specifying what it is to be *a*

that doesn't apply to *b* doesn't change at all the fact that *a* and *b* depend for their identity on each other in the way found problematic by the identity regress argument.

The conclusion that has been reached is that there are at least two distinct problems that can be thought to arise in simple cases where all of the entities involved are supposed to have their identities determined not by anything intrinsic but by the relations they stand in to other entities.

With these simple cases in mind, the response Bird offers to the identity regress argument will be considered. It has been seen that the problem that he raises appears to be the identity regress argument as given by Lowe. This is the argument that has hopefully just been differentiated from the argument from identical essences. It will be argued however that Bird's response is a response to the problem from identical essences and not the identity regress he identifies and, as such, whatever force this problem has remains to be faced by a pure powers theory.

5.3

For his response to the identity regress argument Bird draws on an argument given by Randall Dipert in 'The Mathematical Structure of the World: The World as a Graph'. Bird takes the disputed thesis to be this:

(S) The identity and distinctness of the elements of a set *E* of entities supervene on the instantiation of some relation *R* (or set of relations $\{R_i\}$) on the elements of *E*. (Bird 2007, p.139)

The question as Bird sees it is whether this thesis can be true: 'Could a set of R -relations on E suffice to determine the identities of each element of E ?' (Ibid). Bird's claim is that this thesis is shown to be true in the area of mathematical study called graph theory.

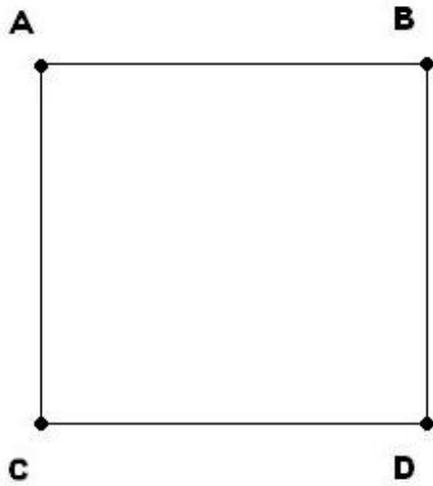
A graph of the kind in question is comprised of 'vertices' and a single two-place relation between these vertices.

The intermediary thesis then becomes:

(S*) The identity and distinctness of the vertices of a graph can supervene on the structure of the graph.(Ibid)

Bird claims that S* is true. Graphs can be divided up into two categories – the symmetrical and the asymmetrical. In an asymmetrical graph, there are no 'non-trivial auto-morphisms'. A *trivial* auto-morphism is a rotation of the graph 360 degrees with each vertices being mapped back onto itself. A non-trivial auto-morphism is a rotation of the graph whereby the same graph is obtained, other than by rotating each vertices on to itself (e.g. rotations of Graph 1, below, by 90 or 180 degrees are non-trivial auto-morphisms). Bird's claim is that asymmetrical graphs prove (S*); that is the structure of the graph provides for the identity and distinctness of the vertices.

Take the following example of a graph that has *non*-trivial auto-morphisms: The graph with four vertices, with each vertices being joined to two others.

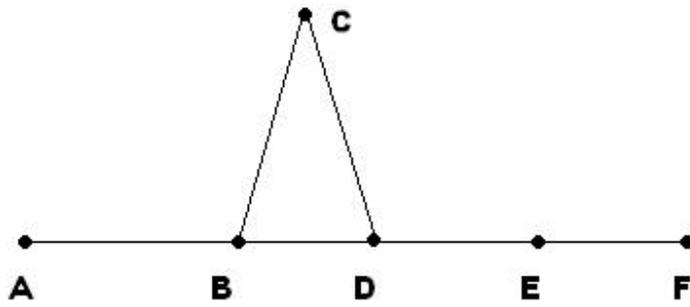


Graph 1

Bird takes it that this structure *does not* suffice to provide for the identity and distinctness of the vertices. Say we were to arbitrarily name the vertices, A, B, C and D (clockwise starting top left). Take A. A is that vertex that stands in R to B and D. But what of C? C is also that vertex that stands in R to B and D. Since all there is to the identity of the vertices is the relation to other vertices, and the names were arbitrary, it seems A and C cannot be distinguished.⁶⁸

There are however there plenty of graphs where no such symmetry is present. Graph 2 is one such graph.

⁶⁸ Only simple graphs are being considered. These do not include 'loops' (a vertices cannot be related to itself) and the 'edges'/relation are/is directionless.



Graph 2

On graphs like this one (Graph 2) each vertex can be distinguished from all others simply by reference to its relations and the relations of the vertices it is related to; there are no non-trivial auto-morphisms. One way of showing this is to describe a vertices by an (unordered) list of numbers with one number-place for each node it is related to and the value (number) for each place is how many nodes that node is related to.⁶⁹ So for Graph 2 we can give the following description of each node:

A: (3), B: (1, 2, 3), C: (3, 3), D: (3, 2, 2), E: (3, 1), F: (2)

So A is related to only one node, hence only one number in its list, and the node it is related to is related to three nodes, hence (3). We can see that each of these lists is unique so we have therefore a way of uniquely describing each node in the structure.

⁶⁹ This method of representing nodes/vertices in graphs is taken from Ladyman (2007).

Bird takes the existence of non-symmetrical graphs such as Graph 2 to provide proof of S^* and S^* to secure the truth of S . If S is true, then Bird believes this provides an answer to the identity regress objection as he's formulated it⁷⁰.

Can the identity of potencies [properties] supervene on the pattern of their manifestation relations?

The answer is that it can. If we represent the manifestation relation by edges of a graph and the potencies by its vertices, then that question is represented by the graph-theoretic question: Can a graph be asymmetric?(Bird 2007, p.146)

And we have seen that graphs can be asymmetric.

5.4

It will now be argued that Bird's response to the identity regress argument is not fully satisfactory. It is not fully satisfactory because it appears to be a response to the argument from identical essences and not to the identity regress argument given by Bird. Just as it was suggested above that the move from Case 1 to Case 3 does not affect the applicability of the identity regress argument, neither does the move from symmetrical to asymmetrical graphs.

⁷⁰ A one vertex graph is asymmetrical. It so happens that the next asymmetrical graph has six vertices. Bird notes that this perhaps commits the dispositional monist to the claim that there are either one or more than five fundamental properties. This might be thought to be a peculiar result, but Bird doesn't seem to think it would be unacceptable. In fact, by making what he considers to be permitted complications to the graphs the range of asymmetrical graphs can be increased. I agree that the result that there is a restriction on the number of possible fundamental properties should not undermine dispositional monism and won't consider Bird's more sophisticated graphs.

The argument from identical essences says that it is not permissible to have four entities whose identities are determined solely by the structure of relations in which they stand, as represented by Graph 1. In Graph 1 each vertex is identical in terms of the relations it bears to the other vertices. Yet there is seemingly no problem from the argument from identical essences for Graph 2 -- we saw that for this graph there was a way of uniquely representing each vertex.

However, if we consider what it is that *the identity regress argument* takes issue with in Graph 1, we will see that the problematic feature in fact *remains* in Graph 2. The identity regress argument takes issue with an entity depending for its identity on another entity that depends for *its* identity on the original entity.

So in Graph 1, which vertex A is depends on its relations to B, C and D. However, which vertices B, C and D are depend on which vertex A is. A depends on B, C and D for its identity yet since B, C and D depend for their identity on A, A must depend for its identity, in part at least, on itself. Yet *ex hypothesi* A *does not* depend on itself for its identity. It is this apparent contradiction that makes the identity regress seem a vicious one.

Indeed, Bird highlights exactly this problem in setting up the problem that graph theory is supposed to help solve. Considering the possibility (that Bird finds highly plausible) that the number of fundamental properties is finite, the identity regress problem can be stated thus:

...[T]he identity of a property is determined by its relationships with other properties whose identities are determined by their relationships with yet other properties, in a set of relationships which at some

point returns to involve the very property we started with. The identity of that property is what this set of relationships was supposed to settle. Yet the nature of that set of relationships is dependent on identities of its relata, which *ex hypothesi* have not yet been settled.

...Saying the identity of A is determined (in part) by B, can satisfy one that the identity of A is determinate only to the extent that one is satisfied B's identity is determinate. Likewise, the move from B to C will help only if C's identity is determinate. But if C's identity depends on A we cannot be satisfied that C's identity is determined, nor B's nor A's. (Bird 2007, p.137)

In Graph 2, there are no non-trivial auto-morphisms. This means that the relational structure of the graph suffices to distinguish every vertex from every other – in a way it did not in Graph 1. So each vertex is individuated – is the vertex it is and not another – because of the place it occupies in the graph structure. The place it occupies is determined, of course, by the vertices it is related to and in turn by the vertices they are related to. So A is that vertex that is related to just one vertex – the one that is related to three others such that they are related to... and so on. In an asymmetrical graph it is possible to give a completed description of the kind just sketched for each vertex such that each description is true of only one vertex. This was not possible for Graph 1. Yet has the problem for Graph 1 found by the identity regress argument removed by Graph 2 being asymmetrical?

Seemingly not. The problem found by the identity regress argument was that the vertices in Graph 1 all relied on each other for their identity and so, in effect, each vertex relied at least in part on itself for its own identity, which *ex hypothesi* it should not. This remains the case in Graph 2. Vertex A is the vertex it is because it is related to vertex B, which is the vertex it is in virtue of the vertices it (B) is related to. So essential for the

identity of B is the identity of A. Yet it is the identity of A we were seeking to explain. It is this feature – two or more entities depending on each other for their identity – that the identity regress argument finds problematic. This is not solved, it would, seem by the graphs being asymmetrical.

Graph 1 and Graph 3 mirror Case 1 and Case 3, above. In moving from Case 1 to Case 3 the argument from identical essences ceased to be applicable, yet the identity regress argument remained a problem. The same is true from the move from Graph 1 to Graph 2. The problem that asymmetrical graphs appear to solve is that posed by a form of the argument from identical essences. The identity regress argument seems to be just as applicable in the asymmetrical case as it is in the symmetrical case.

5.5

The identity regress argument claims that it is not possible for two entities to individuate each other since neither can get their identity fixed and this is required for either to play the identity determining role with respect to the other. The response as it is being understood simply bypasses this claim. All that is required, so the response goes, is that each distinct entity is related in a unique fashion to the rest.

How successful is this response? It has been argued that the identity regress argument places a necessary requirement on the individuation of entities that the pure powers view does not meet. Furthermore, it has been argued that the response from graph theory does not address this argument. Whether there are any convincing arguments for the identity regress arguments will not be considered here. However, I suggest that the intuition behind the identity regress argument - that is explored in the above discussion of the simple cases and the graph theory response – has a certain plausibility. Therefore, a view that is at odds with the intuition should be

avoided if possible. The grounded view, to be presented in the following chapter is not susceptible to the identity regress argument and so, all other things being equal, should be preferred. As it happens it will be argued that all things are not equal; the grounded view is preferable for other reasons also.

6. Conclusion

In section 1 the pure powers theory was expounded. This primarily involved an attempt to understand the constitution thesis. The constitution thesis is the thesis that properties are nothing but the powers they confer. This places the onus of explanation on the pure powers view's understanding of what a power is. If a particular's possession of a property just is its possession of some power(s), then what is it for a particular to possess a power?

It was seen that the pure powers theory does not wish to understand powers such that a particular's possession of a power consists merely in the obtaining of a counterfactual conditional. The pure powers view's desire for a richer account of powers however threatened to collapse the view necessitarianism. And yet whilst consideration of the role of the laws of nature in a property conferring a power on its bearer may suffice to distinguish the pure powers view from a necessitarianism it failed to firstly to distinguish it from the grounded view to be discussed in the next chapter and secondly it failed to provide the pure powers view with a substantial account of why QT was false. It was argued the only way to understand the pure powers view's constitution thesis was as the thesis that the essence of a property consists in the causal relations it bears to the other properties. So a particular's possession of a property consists partly in that state of affair's relations to the relevant manifestation and stimulus event types.

This understanding was shown to be consistent with extant pure powers theories. Both Bird (2007) and Molnar (2003) were shown to accept this formulation of the view. With the constitution thesis thus understood, the pure powers view is open to the identity regress argument. On the pure powers view each property is the property it is in virtue of the relations it bears to other properties. Yet the same holds for each of the other properties. The identity regress argument claims that this leads to a regress, or circularity, of identity. This is because for a property P1 to be that property that stands in R to P2, it is necessary – so the argument goes – that it is determinate which property P2 is. Yet since the same holds for P2, and for the property that is supposed to determine the identity of P2, and so on, no property can get its identity fixed.

In section 5 this apparent problem was investigated through a series of simple cases. The purpose here was to distinguish the identity regress argument from a related problem that can arise for the individuation of entities – this was called the argument from identical essences. The argument from identical essences claimed that (since *ex hypothesi* the entities in question are to be individuated relationally) for two entities, if there was no relational fact that held of one and not the other, then they were identical. It was shown that this is a distinct problem from that highlighted by the identity regress argument. In asymmetrical cases the argument from identical essences is not applicable yet the identity regress argument is unaffected. For instance, the case was considered in which we purportedly have two entities *a* and *b*, where aMb and bSa (where M and S are non-symmetrical), and where the identities of *a* and *b* are to be fully determined by the relations they hold to one another. In this case the argument from identical essences is not applicable – different relational facts holds of each entity. However, it was suggested that in this case, as much as the case in which there is a single symmetrical relation, the identity regress argument is applicable. The entity *a* is supposed to be the entity it is in virtue of the relation it holds to *b*. This, according to the identity regress argument requires the identity of *b*

to be determinate, which it cannot be since it relies for its identity on the determinate identity of *a*. This situation, if it is genuinely problematic, is not affected by symmetry.

In section 5.2, the response from graph theory given by Alexander Bird to the identity regress argument was considered. Bird argues that, just as in asymmetric graphs the identity of the vertices can supervene on the relational structure of the whole graph, so can the identity of properties supervene on their relational structure. It was then argued that this was in fact a response to the argument from identical essences and that it did not directly address the identity regress argument – its purported target.

However, given that, I suggest, the argument does have intuitive value, a position that, all things being equal, does not fall foul of it should be preferred to one that does. The grounded view, to be argued for in the following chapter does not face identity regress worries since on the grounded view properties do not depend on on another for their identity.

Chapter 3 – The grounded view

Introduction

Introduction to The Grounded View

In this chapter a view about the relationship between properties and powers that rejects QT will be proposed. Unlike the pure powers theory this view, the grounded view, rejects the constitution thesis. Properties are not just the powers they confer; a property is not constituted by the quasi-causal relations it holds to other properties. Rather, the nature of a property explains why it confers the causal powers it does.

The grounded view is supposed to be a relatively straightforward view. The view is that the fundamental properties have their own intrinsic natures and that it is these natures that explain why these properties confer the causal powers they do. So the way instances of properties will interact is explained, metaphysically explained, by the intrinsic natures of those properties. That the natures of properties metaphysically explain why they confer the causal powers they do distinguishes the grounded view from quidditism. For on quidditism it is not the natures of properties but the laws of nature that explains why properties confer the powers they do. That properties have *intrinsic* natures distinguishes the grounded view from the pure powers view; a properties nature determines and is not determined by the quasi-causal relations it holds to other properties.

Although it is claimed that the grounded view represents an intuitive and plausible view, it will be seen in section 2 that there appears to be an assumption made in the literature that a view that denies QT *must* accept the constitution thesis – on such an assumption the grounded view cannot be entertained. This assumption will be called the *constitution assumption*. In section 2 this assumption will be considered as will the reasons for holding it. It will be suggested the assumption is motivated by a need to provide an *explanation* for the falsity of QT1 and QT2; the assumption being that only the constitution thesis can provide such an adequate explanation. We can briefly summarise the constitution assumption as follows: Only if a property is (at least partly) constituted by the causal relations it holds to other properties can it confer causal powers of necessity and only if there is nothing more to a property than these relations can it be the case that no two properties confer the same causal powers.

With these motivations for the constitution assumption identified, the grounded view is seen to be required to provide an alternative explanation for the falsity of QT. The thesis is this. The nature of a property explains, metaphysically explains, why it confers the causal powers it does. The natures of properties are intrinsic (they are not constituted by relations to other properties) and unique. Since properties have their natures necessarily and only the natures of properties are involved in the metaphysical explanation of why properties confer the powers they do, this provides support for the denial of QT1. The natures of properties and nature of the explanatory relation between properties and powers helps support the claimed falsity of QT2. Specifically it provides support for the intuition that for two properties to have genuinely distinct natures there must be an at least possible difference in the way their instances behave.

Since the metaphysically explanatory relation that holds between properties and powers is essential to the grounded view, it is necessary to attempt to say something substantial about it. An attempt will be made in section 3 to do just this. In section 3.4 it is argued that we already possess an understanding of the relation in

question: it is the one that we take to hold between many of the properties and powers of the medium sized objects that we encounter in perception. The spherical shape of the ball explains – in this very specific sense – why the ball has the power to roll. This is argued to be our ordinary understanding of the situation with regard to many properties (of both the traditional primary and secondary kinds) of medium sized objects.

In some cases this relation is perspicuous, as in the case of sphericity and rolling; it seems somehow directly perspicuous or intelligible *why* round things have the power to roll. In other cases there is no such direct perspicuity or intelligibility. *However*, we still take the relation to hold. For instance it does not seem, as it does in the case of shape, directly perspicuous or intelligible why hot things behave as they do. Yet it still seems to be the case that ordinary understanding takes hot things to have the powers they do *because of* some way they are, namely hot, where the object's being hot explains, and is not constituted by, the various ways it will behave in virtue of being hot.

It is claimed that this very same relation, that it is argued that we encounter in perceptual experience of medium sized objects, holds between the fundamental properties and the powers they confer. In this case the particular relations are for us necessarily non-perspicuous and unintelligible. Our only access to the nature of the fundamental properties is via theorizing and our only way of referring to them is as those entities that confer such and such powers. It is suggested however that this is no reason whatsoever to think that at the fundamental level the way things will behave is not explained, metaphysically explained, by the way they are.

2. The Constitution Assumption

The grounded view denies QT. Yet unlike the pure powers view it holds that the constitution thesis is false: properties are not constituted by the causal relations they hold to one another. On the contrary, the intrinsic natures of properties determine the relations they stand in. However, the grounded view is often not considered as a viable option in the debate as it exists in the literature.⁷¹ So why is the grounded view overlooked? It will be suggested that it is because there is often an assumption in play that I will call the constitution assumption and as it will be seen the constitution assumption rules out the grounded view.

So the aim of this section is to argue that a certain assumption, what I will call the constitution assumption, is made by at least some philosophers in their presentation of the available views on the relationship between properties and powers. Put briefly, the assumption is this: If a property confers causal powers necessarily and sufficiently then there can be nothing to the essence of that property besides conferring those powers. It will be suggested that there are two motivating thoughts behind the holding of the constitution assumption. Firstly, if it is not partly of the essence of property to confer certain causal powers then it would not do so necessarily. Secondly, if there were anything else to the essence of a property other than the conferring of certain powers then the conferring of those powers would not be sufficient for the identity of that property - that is, another

⁷¹ A view that might appear prima facie similar to the grounded view is that offered by John Heil in *From an Ontological Point of View*. Here Heil forwards what he calls the 'identity theory', a view in part based on C.B Martin's 'limit view'. The view might be thought, prima facie, to be similar to the grounded view since it apparently denies both quidditism and the pure powers view. What importantly distinguishes the view is that Heil specifically does not take properties to explain why they confer the powers they do, in the grounded view's sense - of the nature of the mass of an electron and the powers it confers he says 'Neither is 'reducible to' nor grounds the other' (Heil, p.115). Additionally, I find Heil's theory hard to interpret and although no argument against the view will be given here, one observation in this direction can be made. Heil claims that three things are identical: The property, its qualitativity and its dispositionality. As such Heil claims that he needn't disagree with the pure powers view that properties *are* powers - it's just that they are also qualities. There seems to be a problem with this coupled with the identity claim. That is, Heil *can't* in fact agree with the pure powers that properties are powers, at least not if we take powers to be the powers of chapter 2 (or on the merely-conditionals account). For what can it mean to say that the pure powers view is right that properties are powers but wrong that they are merely powers if whatever else they are is *identical* to their dispositionality? For this to be a clear view, it would need to be made clear what it is, for Heil, for a property to be a power and what it is for a property to be a quality. Since no such clear definition is given, it isn't clear exactly what the view is.

property might, or might have, conferred the same powers. Since the grounded view claims that properties confer the powers they do necessarily and sufficiently (it denies QT1 and QT2) yet are not constituted by their conferring of causal powers, answering to these two motivations for the constitution assumption will serve to elucidate and defend the grounded view.

2.1

The constitution thesis was introduced in the preceding chapter. The constitution thesis – the claim that for each property it is constituted by its relation to other properties – is the distinctive claim made by the pure powers view. It was noted that the constitution thesis provides the pure powers view with an account of why QT is false.

The constitution thesis holds that properties are constituted by the relations they hold to other properties. Equivalently, what makes the state of affairs of *a*'s possession of *P*, a state of affairs of a possession of *P* (as opposed to some other property) is the relation the state of affairs bears to the stimulus and manifestation event types relevant to *P*. The constitution thesis therefore entails a denial of QT. For any state of affairs that stands in these same relations is a state of affairs that is a possession of *P*. It is not possible therefore for there to have been another property that stood in the appropriate relations to these stimulus and manifestation events and as such it is not possible for there to have been another property that conferred the same causal powers as *P*. This entails a denial of QT2. Equally, if what it is to be a particular property is for instances of the property to stand in these very relations to other properties, a property could not have been differently related than it in fact is. This entails a denial of QT1.

On the pure powers view then, any property it confers the causal power it does of necessity, and, necessarily, only that property confers that causal power. We can refer to the former feature as the necessity of powers (the denial of QT1) and this latter feature as the sufficiency of causal powers (the denial of QT2) (since conferring a certain causal power is sufficient for the identity of a property).⁷²

As was stated in the previous chapter, that the pure powers view can provide an account of *why* properties confer the powers they do necessarily and sufficiently (that is, why QT is false) can be taken as a motivation for holding the view. However, it seems that there is an assumption in the literature that the *only way* to understand properties conferring the causal powers they do necessarily and sufficiently is to make the constitution thesis. This I will call the constitution assumption. More specifically the assumption seems to be that, firstly (1), if conferring some causal power wasn't of the essence of a property then it would not do so of necessity - for what could be the source of this necessity? Secondly (2), if there was anything else to the essence of property other than its conferring of some particular causal power then two or more properties could confer the same causal power - for if there was more to the essence of a property than its relations to other properties then what would prevent two properties from bearing the same relations to the other properties? So the constitution assumption will be seen to have two motivations, what we can think of as the worry about necessity and the worry about sufficiency.

In section 2.2 examples of the necessity worry as voiced by David Armstrong and Alexander Bird will be given.

Both Armstrong and Bird make it clear that they believe the necessity of causal powers (the falsity of QT1)

⁷² John Hawthorne (2001) divides what he sees as the possible views in this way – as combinations of necessity and sufficiency of powers.

requires explanation. In section 2.3 examples of the sufficiency worry will be given. It will be concluded that no positive argument is given for the constitution thesis. The implicit argument appears to be that a view that denies QT is required to give an explanation of the falsity of QT if this is not to be provided by the constitution thesis. The remainder of this chapter seeks to provide such an alternative explanation.

2.2

If we consider the following passage of Armstrong's in which he considers a view of C.B Martin's it is evident that Armstrong is concerned about the necessity of powers to properties if properties themselves are taken to be more than these powers.

'[On Martin's view] every property has two sides: a qualitative and a power side...In the two-sided view act is provided for as well as potency...The problem for this theory is to spell out the link between the two sides that properties are credited with by this theory...Let Q be the categorical or qualitative element of a certain property P, and let D (for disposition) be the power element... Perhaps, then, the Q-D complex involves some necessary connection between Q and D? The difficulty is that this necessary connection is so opaque, so untransparent, a form of necessity. Why is it not possible for the qualitative-categorical side or aspect of the property to exist without power D? I don't think it is at all easy to explain. The necessity that links a power in the cause to the bringing about of effect is nice transparent necessity that one can at once understand. This necessity here alleged to hold between quality and power is the very reverse of this. Not all necessities may be justified a priori – there do

seem to be a posteriori necessities – but some justification for postulating them should be given.

Nothing but the needs of the theory seem to be involved here. (Armstrong 2005, p. 314-315)

Armstrong's concern is that if the qualitative 'side' of the property is in fact distinct from the power 'side' then what is the source of their necessary connection?

Alexander Bird, in his consideration of categorialism (roughly, quidditism), makes a similar point in discussing in the view Evan Fales argues for in his *Causation and Universals*.

On Bird's pure powers view, dispositional monism, the mere existence of the properties there are can account for their dispositional character. A property's dispositional character is its conferring the causal powers that it does. Since on dispositional monism properties have the dispositional characters they do necessarily (they have essentially dispositional natures) their existence guarantees their possession of their dispositional characters. However, since for Bird 'categorical' properties do not have essentially dispositional natures – since they could have had a different dispositional character – their existence alone cannot account for the laws of nature. Something else other than the mere existence of the properties is required to account for the properties having the dispositional characters they have. According to Bird, one categorialist position takes it that it is the properties *plus the laws of nature* that are required to account for the properties having the dispositional characters they do (Bird, 2007, p.68).⁷³

So thus, Bird says, the categorialist holds:

⁷³ This was the case with both the varieties of quidditism briefly discussed at the beginning of chapter 1.

(CL) The laws are metaphysically contingent relations among categorical properties. (Bird, 2007, p.68)

However, (CL) comes with the following footnote.

One could hold that the laws of nature are metaphysically necessary, which would give categorical properties a necessary dispositional character. But this need not be equivalent to (DM) [dispositional monism] since something may have some feature necessarily without that feature being essential. However, that would leave unanswered the question of the source of the metaphysical necessity. Although Evan Fales (1990) seems to come close to a view of this kind, I shall take it that categorialism involves commitment to (CL) [that the laws are contingent relation among properties]. (Bird, 2007, p.68)

We can see that this presents an example of the concern in (1). The view Bird is considering here is one in which the laws are such that properties have their dispositional characters necessarily. Bird worries, as Armstrong does above, that such a view would leave the source of the necessity opaque. Again, the sentiment appears to be: If properties do not (at least partly) consist in their dispositional characters then why would they have them necessarily?

2.3

If we consider the way in which Alexander Bird sets up the available positions for dispositional essentialism it appears that Bird sees the constitution thesis as the only plausible answer to the sufficiency worry, above. Dispositional essentialism holds that properties confer the causal powers they do necessarily.

Dispositional essentialism, when applied to a particular property, says that that property has a dispositional essence. A contrasting claim is that the property is categorical. Understanding this distinction is important. Essentially dispositional properties are ones that have the same dispositional character in all possible worlds... Categorical properties, on the other hand, do not have their dispositional characters modally fixed, but may change their dispositional characters (and their causal and nomic behaviour more generally) across different worlds. (Bird 2007, p.44)

So for Bird a categorical property is a property that can have different dispositional characters in different worlds. And it would be, I think, a plausible interpretation of this passage to take Bird to mean that if a property has the same dispositional character in all possible worlds then it is 'essentially dispositional', by which he means it has dispositional essence. For a property to have 'dispositional essence' is for Bird for the property's essence to be constituted by its relations to other properties.

But this isn't quite right. In fact for Bird, for a property to have the same dispositional character (confer the same causal powers) in all possible worlds is *not* enough for it to have a dispositional essence. Strictly, Bird says, dispositional essentialism is consistent with the thesis that two properties in two different worlds could confer the same powers (Bird 2007, p.72). That is, it is consistent with QT2.

Bird distinguishes two forms of dispositional monism – weak and strong. The strong thesis holds that properties have *dispositional essences*, the weak only that properties have their dispositional character's *essentially*. Weak dispositional monism is consistent with QT2, strong dispositional monism is not. Both reject QT1.

What is relevant here is that the only option Bird considers for view that denies both QT1 and QT2 is strong dispositional monism, that is, a pure powers view. A view that denies both QT1 and QT2 yet does not make the constitution claim is not considered. It seems then at this point in Bird's argument that he does not see any way of denying QT2 that is not to have properties consisting in conferring the powers they do.

John Hawthorne can be seen making a similar assumption in his discussion of alternatives to a pure powers view in 'Causal Structuralism'. Hawthorne makes a direct transition from the conferring of powers failing to exhaust the essence of a property to it being therefore possible that two properties could confer the same causal powers.

On a second view, some or all of the causal powers of a property are essential to it. It does not go as far, though, as to insist that the causal powers of a thing exhaust its nature. Two possible properties may be distinct and yet the same causal powers be essential to each. (Hawthorne 2006, p.361)

Here Hawthorne moves from the conferring of causal powers failing to exhaust the nature of a property to it therefore being possible that two properties could confer the same causal powers. The assumption appears to be that to say that a property's nature is *not* being exhausted by its dispositional character *just is to say that* another property could share the same dispositional character.

For our purposes we can take the implicit point to be this: if there is more to the nature of a property than its dispositional character, why can't two properties have the same dispositional character? *How could* one property's having its dispositional character essentially (yet *not* have a dispositional essence) prevent a distinct property from having the same dispositional character essentially?

2.4

The constitution assumption is then the assumption that a denial of both QT1 and QT2 requires making the constitution thesis. This assumption is summarised well by Anne Whittle (2006) in her suggested pure powers alternative to quidditism.

[T]he idea is that properties (or their instances) are sui generis entities that are actual, persisting states of particulars. These instantiations of properties cannot be reduced to facts about what the particular would have done in such-and-such circumstances. But, nevertheless, the functional role that a property bestows upon its bearer is constitutive of that property, since it individuates that property in all possible worlds. (Whittle 2006, p.485)

Here Whittle adopts a pure powers view, like the version considered in detail in chapter 2, that does not take the possession of property by a particular to be merely the obtaining of a counterfactual conditional. And it can be seen that Whittle assumes that since on the view she is considering a property confers the powers it does necessarily and sufficiently, a property's conferring these powers is constitutive of it. Yet why must we infer

from the fact that ‘the functional role that a property bestows on its bearer’ is enough to individuate a property in every world, that bestowing this functional role is *constitutive* of that property?

It will be argued that it is perfectly coherent to reject the constitution assumption and that a view that denies both QT and the constitution assumption, the grounded view, presents an attractive and intuitive option.⁷⁴

3. The grounded view

The two components to the constitution assumption identified above provide a guide for developing the grounded view. The grounded view claims both that properties confer the causal powers they do necessarily and that for any property P, necessarily, any property that confers the same causal powers as P is P. Yet the grounded view does not hold the constitution thesis – the grounded view does not take properties to be constituted by the relations they hold to other properties. The grounded view can be developed therefore, by providing an account that can attempt to answer the two motivations behind the constitution assumption. Firstly, if a property is distinct from the powers it confers, why does it confer them necessarily – what, as Armstrong asks, is the source of this necessity? Secondly, what is to prevent two properties conferring the same causal powers if there is more to their essence than the relations they hold to other properties?

⁷⁴ For a connected general discussion see (Fine 1994) where the relation between necessity and essence is influentially discussed. In that paper Fine is concerned with arguing that an account of essence cannot rely on modal facts alone.

On the grounded view the nature of a property does not consist in its relations to other properties. Equivalently, the nature of the state of affairs that is a particular's possession of some property is not partly constituted by its relations to the relevant manifestation and stimulus event types. Instead, it is the nature of a property that is taken to be explanatory of the causal powers it confers and therefore explain, metaphysically explain, why it stands in the relations it does.

3.1

For the grounded view, the essence of a property does not, contra the pure-powers view, consist in conferring the powers that it does. Rather, the essence of a property is being that way of being (that way for particulars to be) which explains why it confers the causal powers it does. It is the relations (relations that somehow support causal behaviour) that properties stand in to one another that determine the nature and identity of properties on the pure powers view. *On the grounded view the order of explanation is reversed.* It is the nature of the particular properties that explains why they support the causal relational structure they do.

Development of the grounded view is then going to turn greatly upon its account of 'explanation'. What does it mean to say that the essence of a property *explains* its conferring the causal powers it does? And how does the essences of properties being explanatory in this sense allow the grounded view to answer the questions raised by the constitution assumption?

3.2

Discussion of the appropriate notion of explanation is the task of sections 3.3 and 3.4. Prior to that, however, an important clarification is in order as to the explanatory *role* of the nature of any particular property. It has been said that on the grounded view, for any property, the nature of the property itself is explanatory – metaphysically explanatory – of its conferring the causal powers it does. This requires qualification.

On the grounded view we can think of causal powers on the model of (1) from chapter 2. (1) A particular, *a*, has power *P*, if *a* will *M* in condition *S*. For reasons mentioned in chapter 2 it is likely to be necessary that the conditional includes *ceteris paribus* clauses.⁷⁵ The grounded view holds that, for each particular property, it is the nature of the property that explains why it will behave in certain ways in certain conditions.

An initial worry about this claim of the grounded view's – that the natures of properties are explanatory in this way – might be that too much is being required of the nature of any particular property. If instances of *P*₁ interact with instances of *P*₂ and *P*₃ in a certain way and the nature of *P*₁ is supposed to be explanatory of this fact, then does the nature of *P*₁ somehow 'include' information or some-such about *P*₂ and *P*₃? That is, is it being claimed that simply from the nature of *P*₁ *alone* one could in principle somehow derive the fact that it interacts with two other properties, *P*₂ and *P*₃ in the way it does? This is not the claim. The nature of *P*₁ explains the manner of interaction of instances of *P*₁ with instances of *P*₂ and *P*₃, *given* the nature of *P*₂ and *P*₃.

So the nature of a particular property explains the causal powers it confers – and so how its instances interact with instances of other properties – *given* the natures of the other properties. So given all of the properties and

⁷⁵ The details of such a clause are not of particular importance since it is an assumption of the thesis that, somehow in virtue of possessing particular properties, particulars will behave in certain ways in certain conditions.

their natures, this explains – metaphysically explains – how their instances will interact, what causal powers they will confer.

3.3

With hopefully a clearer sense of what it is that the essence of a property is supposed to be explanatory of, we can now turn to the task of elucidating a notion of ‘explanation’.

Some introductory remarks can be made about this notion of explanation. One important feature of this explanatory relation is that it is not symmetrical. The essence of a property explains its conferring the causal powers it does; a properties conferring the causal powers it does not explain the essence of the property. Importantly, we cannot account for this lack of symmetry in terms of modal facts. For instance we cannot say that the essence of a property (A) explains its conferring the causal powers it does (B) and not vice versa because it is true that ‘if A then B’ but false that ‘if B then A’. Since a property confers the causal powers it does necessarily this non symmetrical relation must be given a non modal characterization.

It will perhaps help in elucidating the grounded view’s notion of explanation to compare it with that of a different notion, that of *ontological dependence*⁷⁶. The notion of ontological dependence as it is employed by Kit Fine and E.J Lowe shares some features with the notion of explanation used by the grounded view: It is used to specify what can be a non symmetrical relation between entities that do not ‘come apart’ modally. I will briefly describe what I take to be common to both Lowe and Fine’s discussion of ontological dependence. I will

⁷⁶ See (Lowe 1998, Chapter 6) (Fine 1995)

not be attempting to argue for the use to which they put it or that their examples compel us to think about it this way.

We might wish to say that one thing 'depends' on another in a metaphysical sense.

Clearly, a crucial notion in metaphysics is that of one object depending for its existence upon another object – not merely in a causal sense, but in a deeper ontological sense... Thus a substance is often conceived to be an object which does not depend for its existence upon anything else. Again, properties are often said to depend for their existence upon the objects which possess them. (Lowe 1998, p.137)

Lowe goes on to ask how this relation of ontological dependency should be defined. A first attempt might be to say that one thing depends on another if it only exists when that other thing exists. Yet any such modal definition is subject to certain problematic cases.

An example of the way one entity can depend on another is if an entity depends for its *identity* on another entity or entities. In the case of the identity of sets, it seems that a set depends for its identity on its members; a set is the set it is and not another because it has the members that it has. This dependency here is asymmetrical, the identity of the members of the set do not, it would seem, depend on the set for their identity.

An example discussed by Fine is of the singleton set {Socrates} and Socrates. The set {Socrates} depends for its identity on Socrates – it is the set it is and not another in virtue of having the single member Socrates. However, we do not intuitively think that Socrates depends for his identity on the set {Socrates}; the set

{Socrates} is not involved in whatever determines that Socrates is the man he is and not another. The problem such cases pose for a modal definition of dependence is that, modally speaking, we might say, Socrates and {Socrates} 'go around together'. That is, if Socrates exists {Socrates} exists and if {Socrates} exists then Socrates exists.

Another example given by both Lowe and Fine, also involving Socrates, takes Socrates and the event which is Socrates' life. On some assumptions about how we should individuate lives⁷⁷, then again, modally speaking, Socrates and his life 'go around together'. Yet the intuition is supposed to be that, in this ontological sense, Socrates' life depends on Socrates for its identity, but Socrates doesn't depend on the event which is his life, for his. The suggestion of both Lowe and Fine is that we need a notion of ontological dependence that is finer grained than a modal definition of such a notion seemingly allows for.

One of the reasons for discussing the notion of ontological dependence is that it seems as far as we understand it, we thereby understand a notion of metaphysical explanation that displays some of the features desired of such a notion by the grounded view. We have such a grasp since we can think of an explanatory relation holding in the opposite direction to that of dependence. If the identity of a set depends on the identity of its members then we can say that the identity of these members *explains* the identity of the set. The identity of the set {Socrates} depends on the identity of Socrates, so the identity of Socrates explains the identity of {Socrates}; the set is the set it is *because* the man is the man he is. The 'because' here points to a metaphysically explanatory relation between the identity of Socrates and the identity of {Socrates}; the former explaining the latter.

⁷⁷ For instance, I could not have had Socrates' life – I could have had, perhaps, a qualitatively identical life, but this would not have been numerically the same life as Socrates'.

Whilst being asymmetrical, this notion of explanation can – because ontological dependence can – hold between entities that are necessarily co-existent (if either exists then so does the other). This is a feature desired by the grounded view for its notion of metaphysical explanation.

Lowe and Fine's notion of ontological dependence allows us to consider an intelligible *metaphysical explanatory* relation that is a non symmetrical relation that is not analysable in modal terms.

3.4

The previous section showed that it is possible to have an intelligible notion of a metaphysically explanatory relation with some of features that the grounded view requires of *its* notion. But it still remains to make intelligible the grounded view's notion of explanation. To this end I wish to consider a group of non-fundamental properties: those possessed by medium sized objects and that are apparent to us in perception.

In this section I will claim that in our ordinary, pre-theoretical understanding of the relation between some of the properties of medium sized objects and the ways things behave in virtue of having these properties, we take the relation to be a metaphysically explanatory one. That is, the way something is is distinct from yet explains the way something will behave in virtue of being that way.

I say we take the relation to be *metaphysically* explanatory relation. I mean this to contrast with other ways we might in general take properties to explain powers. The most obvious is explanation from universal generalization. If it is true that all round things roll, then we can could say that something's being round explains why it will role. This kind of explanation is not the one in question. By way of comparison it can be said that the kind of metaphysical explanation in question might serve to *explain why* any such universal generalization holds. And importantly, in the kind of explanation in question what it is that does the explaining is the *nature of the property*. It is something about the *nature* of this very property that explains why it confers the powers it does; something about *roundness itself* that explains why it confers the powers it does. These are only supposed to be suggestive remarks; it is hoped that the notion of explanation in question will become clear.

What is very important to make clear at this point is the purpose to which these observations of our ordinary understanding of the medium sized world are being put. It will be argue that we do, as a matter of fact, have an understanding of an explanatory relation between properties and the powers that they confer that has the features sought by the grounded view. The claim is that we can use this notion from our ordinary understanding of the medium sized world to help understand what is being proposed by the grounded view to hold between fundamental properties and the powers they confer.

3.4.1

So, the grounded view proposes that the relation between a property and the powers it confers is one of explanation; the nature of a property explains why it (the property) confers the causal powers it does. But how are we to understand the claim that the nature of a property is explanatory in this way? It is the claim of this section that we do already possess this very notion of 'explanation' – it is the one we ordinarily take to hold

between (some of) the properties of medium sized objects and the ways they behave in virtue of having these properties. It is the claim of the grounded view that we should understand fundamental properties explaining their conferring of the causal powers they do in this very same way.

What is being argued for then is that we have an understanding of an explanatory relation with certain features. This relation we take to hold in our encounters with the medium sized world. If one has reasons for thinking that our ordinary understanding is mistaken in taking the medium sized world to be as it does, or if one has reasons for thinking that in fact our ordinary understanding is *not* as it is described below, this is in no straightforward way telling against the argument of this section. For all that is minimally required is that the notion of understanding that is being *claimed* to be our ordinary understanding, be intelligible. It is then this intelligible relation that the grounded view takes to hold at the fundamental level. What would be problematic would be if it were claimed that the notion sketched below as our ordinary understanding is not in fact *intelligible*. The following discussion attempts to show that it is in fact intelligible. Whether anything of relevance follows *if* this is in fact our ordinary understanding or *if* what our ordinary understanding takes to be true *is true* (i.e. whether such facts could be use to provide further argument for the grounded view), is a further matter that will not be discussed here.

Let us then consider a particular cricket ball. Through perception I can determine that it has certain properties – it is red, round and weighs 5 ½ ounces, for instance. Being red, round and weighing 5 ½ ounces are all ways that medium sized objects can be. Take the particular shape of the ball – its roundness. We can think of roundness as conferring certain powers: Round things behave certain ways in certain circumstances. We can also consider a physical theory of medium sized objects. This theory would describe the way in which things would behave depending on the properties they possessed.

The characterization of roundness provided by this theory – the way it says that roundness makes a difference when it's around – will take account of the difference in effect the possession of roundness will have in a cricket ball and an orange, say, since the theory is a theory of how things with the various properties behave in the presence of instances of other properties. And these will include the other properties had by the cricket ball and the orange. A theory of the behaviour of medium sized objects that makes reference to the shapes of things will take very much into account, for instance, what the shaped things are made of.

So the round cricket ball will behave in certain ways in certain circumstances because it is round. I take this to be uncontroversial – at least as a statement of what we ordinarily take to be the case. All that we need to recognise for the moment is that we do, plausibly, tend to think this way. This same minimal requirement holds also for the following further claim. We ordinarily take the 'because' in the statement 'the round cricket ball will behave in certain ways in certain circumstances because it is round' to suggest a relation between the roundness of the ball and the ways it will behave that is *explanatory*; we take the roundness of the ball to *explain why* it will behave in certain ways in certain circumstances.

We can perhaps make clearer this understanding of 'because' by considering some possible interpretations.

Consider a view that holds that roundness has a purely dispositional nature – this would be the equivalent of the pure powers view. On this view for something to be round is just for it to be disposed to behave as round things behave, look round, roll etc.. We might explain what this means by saying that this dispositional view would understand what is going on not really as being such that 'the cricket ball would roll because it is round'

but rather 'the cricket ball is round because it will roll'. Here, roundness is nothing over and above its relations to other properties, such as that of rolling and whatever mental properties we might want to posit to account for the way round things look to human perceivers.

I suggest that this is not our ordinary understanding of roundness. The dispositional understanding seems to miss entirely the force of the 'because' in the original sentence. There is more to being round, we might say, than being disposed to roll, or to looking a certain way to certain perceivers; round things roll and look how they do *because of something about roundness*.

On an alternative understanding – that we can tentatively call 'Humean' and is the equivalent of quidditism – roundness would *not* be constituted by the way round things behave. Of course on this view, roundness is still such that round things do roll. Yet it is true to say that round things roll on such a view because roundness is governed by some law that connects it to rolling. It might be that the law is taken to be a regularity or it may be that the laws have a more direct effect, somehow compelling round things to roll.

Yet on this view it is not anything about roundness itself that connects it to rolling and it is only a contingent matter that round things behave the way they in fact do. This again does not seem to be how we ordinarily understand the relationship between a things shape and the ways it will behave in virtue of having this shape. On such an understanding roundness is all *too* unconnected to the ways round things behave. We ordinarily think, I suggest, that there is something about *this* very way of being – round – that means that round things behave as they do.

What I will *not* here claim to be part of our ordinary understanding is that the relation between the properties of medium sized objects in question and the powers they confer is *necessitating*. I think that such a claim could be plausibly made, but it would require much more support than can be provided here. It is not then the claim of this chapter that the metaphysically explanatory relation that is argued to hold between the fundamental properties and the power they confer – that *is*, it will be suggested, necessitating – is so *because* our ordinary understanding of this relation at the medium level takes it to be necessitating.

So, when it is claimed that the Humean understanding is not our ordinary understanding it is not (in any direct way) because it violates certain modal intuitions we have. Rather it is that in a more direct way it misdescribes the relation we take to hold between properties and powers. The Humean understanding suggests that it is not in virtue of the *nature* of properties that they confer the powers they do. It is this that is suggested that is not in accord with our ordinary understanding. Our ordinary understanding takes it there is something about the nature of properties in virtue of which they confer the powers they do, whereas on the Humean understanding the nature of a property is not what determines the powers it confers.

So the suggestion is that there is an ordinary understanding of the relationship between roundness and the way round things behave that is not captured by identifying roundness with the way round things behave and neither is it captured by thinking of roundness as the way things that behave like round things happen to be. Things are not round *because* they roll, nor is being round merely arbitrarily connected with rolling and looking round.

This is, I am very sure, open to substantial dispute. However, as suggested all that is required for the principal point is that there is sketched, under this guise of our ‘ordinary understanding’, an intelligible view. If,

agreement aside, the view being sketched is intelligible it will serve its primary purpose; to provide an intelligible way in general of understanding an explanatory relation between a property and the powers it confers. If it is right to say that what is being claimed as our 'ordinary understanding' *is* in fact how we think of the medium sized world, then, as already said, whether this can be used in an argumentative rather than illuminatory role is a further question.

So the claim thus far is that there is an intelligible way to construe our ordinary understanding of the relation between the properties of medium sized objects and the way these objects will behave in virtue of having these properties that is not captured by the dispositional or Humean view.

On what I have suggested is our ordinary understanding of the medium sized world, the shape of something explains why things so shaped behave as they do, in virtue of being so shaped. The idea is that the way something will behave in virtue of being a particular shape is something that is not identical to the shape, or the object's being so shaped; the shape itself is not just the ways it will behave (in virtue of being so shaped), but neither is it wholly independent – rather the object will behave in such ways (the ways it will behave in virtue of being so shaped) *because* it is so shaped, because of how things so shaped *are*.

Being round is a way of being shaped, and intuitively if we are looking for what is about roundness (a particular way that things can be) that explains why round things behave as they do, we would look, perhaps, to a geometrical definition of roundness. Perhaps this would be something like – round things have all points on their surface a (roughly) equal distance from their centre. If this is what it is to be round, then, perhaps, it seems understandable how on our ordinary understanding we take a thing's being round to be something that is distinct from the ways something will behave in virtue of *being* round.

We might say, then, that the relationship between roundness and the powers it confers is somehow perspicuous or intelligible to us. That is, the nature of roundness explains why it confers the powers it does, and its doing so is somehow intelligible. We can now ask: Is it in virtue *this* feature of roundness that the explanatory relation is somehow intelligible and in virtue of this feature that ordinary understanding takes it *be* explanatory in this way? And if so does this prevent our ordinary understanding of this relation from illuminating the relation the grounded view proposes holds at the fundamental level, since there is seemingly no hope of the relation being intelligible or perspicuous in this way? I suggest not.

It will be suggested that for our purposes the significance is minimal and we should be careful not to draw the wrong conclusions from these differences. In order to show this some other medium sized non-shape properties will now be considered. It will turn out that in many cases the relation between the properties of medium sized things and the powers they confer is *not* perspicuous or intelligible, yet our ordinary understanding still takes the relation to be explanatory in the required sense.

Take first the case of colour. I suggest that the following is a plausible account of the relationship between determinate colour properties and the powers they confer – again the suggestion is that this is good reflection of our ordinary understanding. Things appear to us to be coloured in a certain way because they are a certain colour; things look red to us because they are red. A similar relation holds between the colour of an object and its apparent colour in cases when the apparent colour and the actual colour are not the same. If I wear pink glasses this will – among other things – result in things looking different colour-wise. The explanation for why things look like they do when I'm wearing the glasses is something like 'this is what blue things look like when looked at through pink glasses'. Our ordinary understanding of these cases is of the actual colour of something

explaining how something so coloured will behave in various circumstances. Our ordinary understanding does not take these various behaviours as being constitutive of blueness. The way something is when it is blue is not explained by the ways blue things behave, but rather the way something is when it is blue explains the way blue things behave.

Take the temperature of something as another example. Hotness also seems to exhibit this explanatory relation to the powers it confers. On our ordinary understanding we take it that there is a way things are when they are hot (that is, they are hot) and hot things behave in a certain way in virtue of being this way. Hot things will burn you if you touch them and melt certain kind of things if they are put near them. Yet again, I suggest that on our ordinary understanding the way things are when they are hot does not consist in simply being disposed to behave in these ways; it is because of the particular way something that is hot is, that it burns and melts things; this way hot things are explains rather than consists in the dispositions it conveys.

For a final example we can take solidity. Let us very crudely suppose that solidity is determinable and determinate solidities range from very delicate to very robust. Take a very delicate china cup. In virtue of its delicate solidity this cup will behave in certain ways in certain circumstances – let us say in many of these circumstances the behaviour will be ‘breaking’. Once again I suggest that our ordinary understanding of the situation is that there is a certain way the cup is which is its delicate solidity and its being this way *explains* why it will easily break. We do not ordinarily take it that the cup’s being this way is constituted by the various ways it will behave in virtue of being this way.

Now in these cases when we ask what it is that is the essence of these properties – blueness, hotness, delicateness – what answers do we get? I think in all of these cases there is an important difference with the

essence of roundness – if we construe this geometrically. In all of these cases I think our understating of the essence of these properties is tied up with the powers they confer such that our ordinary understanding does not have a have an independent way of specifying the essence of blueness, hotness and delicateness in the way we might think we do with shape. It is for reasons such as this, perhaps, that philosophers might be inclined to decide that in fact these properties are ‘merely powers’. Yet nonetheless I think that ordinary understanding takes the natures of these properties to *explain* whatever powers are associated with them.

It would be wrong then to conclude from the fact that in the case of shape properties there is perhaps a way of specifying the essence of the property that is independent from the powers it confers or that it is perhaps perspicuous *how* the essence of roundness explains its dispositional character, that this feature (the perspicuity) must be present if we are take the nature of the property to explain its conferring certain causal powers. It seems we have an ordinary understanding of the natures of properties such that they explain the causal powers they confer where we have no other way of *specifying* the essence other than as that which explains these causal powers.

The claim of this section is then that our understanding of the relation that holds – or we ordinarily take to hold – between the properties of medium sized object (such as blueness) and the way they will behave in virtue of having these properties (such as looking blue) can provide a way of thinking of the relation between the essence of fundamental properties and the powers they confer. The crucial point here is that this idea of an explanatory relation is not some peculiar or ad hoc relation picked out of a hat to answer some technical problems. It is exactly that the natures of properties are related to the causal powers they confer that we ordinarily take to obtain among the medium sized properties we encounter in perception.

4. The metaphysical explanatory relation at the fundamental level

It has been argued that we have an understanding of a relationship that we take to hold between properties and causal powers they confer whereby it is the nature of properties that explains why they confer the powers they do. We take this relationship to hold between familiar properties of medium sized objects and the causal powers they confer. It was then suggested that this same relation holds between fundamental properties and the causal powers they confer.

It will now be argued that the holding of this relation between the fundamental properties and the causal powers they confer can support the grounded view's rejection of both QT1 and QT2. This will serve to answer the question raised when the constitution assumption was considered.

4.1

Firstly, QT1.

QT1: For each fundamental property, P , there is a world, W , distinct from the actual world and such that P confers different causal powers in W than it does in the actual world.

The falsity of QT1 follows from the fact that properties have the natures they do necessarily and from the nature of the explanatory relation that holds between the natures of properties and the causal powers they confer.

The grounded view claims that QT1 is false – properties confer the powers they do necessarily. It was suggested that one concern that lies behind the constitution assumption is that the necessary connection between properties and powers involved in a denial of QT1 requires explanation. The pure powers view attempts to answer this concern by making it constitutive of a property that confers the powers it does. The grounded view attempts to answer this concern by pointing to the metaphysically explanatory relation that holds between properties and the powers they confer.

It is the natures of the fundamental properties that explain, metaphysically explain, why they confer the powers they do. And this relation is such that if it holds it holds of necessity. So it is not possible for the nature of a property to explain its conferring one set of powers in one world and also explain its conferring a different set of powers in another world. No direct argument is to be given here as to why the explanatory relation between properties and the powers they confer is necessitating in this way. However, it is hoped that it will appear plausible that the relation should work in this way.

I will assume that it is non-contentious that properties have the natures they do of necessity, or at the least that this is a highly plausible view. Since it is the natures of properties and the natures of properties alone that are taken to explain why properties confer the causal powers they do, the necessity of a property's nature provides the reason that the holding of the explanatory relation between properties and the powers they confer is necessitating. If another factor (beside the natures of properties) was involved in the metaphysical explanation

of why a property conferred the powers it did, and this factor was variable across worlds, then the QT1 might not be false. If, for instance, the view was that somehow the natures of properties and the active involvement of the laws of nature were *jointly* responsible for properties conferring the powers they do, and the laws could vary across worlds (where natures cannot), then QT1 might be true. Yet this is not the view – it is the natures of properties alone that explain why they confer the powers they do.

All that is required then, aside from the necessity of natures, is that the metaphysical explanatory relation itself remain constant in nature across worlds. The grounded view's position is that it does.

The preceding section aimed to show that this explanatory relation that holds between the natures of fundamental properties and the powers they confer is a familiar relation – it is the relation we take to hold between many of the properties we encounter in perception and the powers they confer. This was designed to show that the explanatory relation that the grounded view takes to hold between the fundamental properties and the powers was not obscure or ad hoc. Rather the relation that holds between the fundamental properties and the powers they confer is a very familiar relation.

An important difference was noted above – in the case of the fundamental properties, the particular relations between particular properties and the powers they confer are for us necessarily neither intelligible nor perspicuous. We *can* only know about the fundamental properties as role-occupants via our theorizing. However, the principal suggestion of the grounded view is that this presents no bar whatsoever to our taking their natures to explain why they confer the powers they do, just in the very same way that we understand the natures of colours and shapes to explain why they confer the powers they do.

It remains to discuss the grounded view and its denial of QT2.

4.2

QT2: There exists a world that contains all possible properties and is such that at that world there exist two distinct properties P and Q and P and Q confer the very same causal power(s).

Following the discussion of the constitution assumption above it was suggested that the grounded view faced the question of *why* QT2 was false. That is, why could there not be a world that contained all possible properties and where two distinct properties conferred the very same causal powers?

It is being assumed that for two properties to be distinct they must have distinct natures (this is at the very least the position of the grounded view). Recall also that the grounded view holds that the nature of a property explains why it confers the causal powers it does. So the natures of P and Q explain why they confer the causal power(s) they do. The question for the grounded view now becomes: Why can the (distinct) natures of P and Q not each explain the conferring of a single set of causal powers?

The grounded view holds that such a state of affairs is not possible since for there to be a difference in nature between two properties there must be a possible difference in the powers they confer. But of course this just re-

invites the question. What grounds has the grounded view for the claim that distinct natures must yield different powers?

The challenge faced by the grounded view is to provide an account of the connection between the nature of properties and the causal powers properties confer that accounts for the falsity of QT2. The claim is that the explanatory relation that the grounded view takes to hold between the natures of properties and the causal powers conferred by properties that has been sketched above goes part way to providing such an account.

The principle that the nature of two properties are not genuinely distinct (so there are not genuinely two distinct properties) unless there is a possible difference in the causal powers they confer requires an account of the relation between the natures of properties and the causal powers properties confer. The constitution assumption is the assumption that the only such account is on that properties to be constituted by the causal relations they hold to other properties. The grounded view on the other hand takes the relation between the natures of properties and the causal powers properties confer to be one of metaphysical explanation. This provides alternate support to the above principle without holding that properties are constituted by the causal relations they hold to other properties; rather their natures *explain* the holding of these relations.

This being said, the above sketch of the relevant metaphysical explanation relation does not appear to rule out a view, similar to the grounded view, that accepts QT2 – a view on which the distinct natures of two distinct properties both explain the conferring of the same causal powers. No argument has been given against such a position. The grounded view's account of the falsity of QT2 is then as follows.

The claimed falsity of QT2 rests on the intuition that for the nature of two properties to be genuinely distinct it must be possible for this difference to be apparent in the causal powers they confer. The grounded view supports the intimate connection this intuition requires between the natures of properties and the causal powers properties confer by holding that a relation of metaphysical explanation holds between the nature of a property and the causal powers it confers. It denies that the only way to support this connection is via the constitution thesis.

However, it is accepted that this is not a complete account. It is not a complete account since there is nothing in the sketch so far of the relevant metaphysical explanatory relation that entails the falsity of QT2. For the grounded view to provide such an argument it would require an account of the explanatory relation such that it could not hold in this many-to-one fashion an endorsement of QT2 would require.

With this qualification in place it can be emphasised that the grounded view's denial of QT2 rests on the very plausible intuition that for there to be a genuine distinctness in the natures of properties, this difference must, at least in principle, show itself in the powers they confer. This connection between the natures of properties and the causal powers that they confer is made more plausible since the grounded view holds there is a metaphysically explanatory relation that holds between properties and the causal powers they confer. To hold that the only way for QT2 to be denied is to hold to the constitution thesis is to hold the constitution assumption for which, as was noted above, no sufficient argument has been provided.

Conclusion.

In this chapter a view that denies QT1 and QT2 yet does hold the constitution thesis has been sketched. This view, the grounded view, holds that it is the intrinsic natures of the fundamental properties that metaphysically explain why they confer the powers they do.

It was observed that there appears to be an assumption in the literature that a view that denies QT1 and QT2 must hold the constitution thesis. This was called the constitution assumption. Two motivations for the assumption were identity. The first, the worry about necessity, is the worry that if it is not part of the nature of a property to confer the causal powers it does, then what could account for the necessity involved in denying QT1. The second, the worry about sufficiency, is the worry that if there is anything else to the nature of a property other than conferring the powers it does, then what could prevent two properties from conferring the very same powers.

What was taken from the discussion of the constitution assumption was that the grounded view, as a view that denies QT1 and QT2 yet doesn't hold the constitution assumption, was required to provide some account of the falsity of QT1 and QT2.

It has been argued that the grounded view can provide such an account, or at the very least the basis for such an account. The central claim of the grounded view, and the claim on which this account is based, is the claim that there exists a metaphysically explanatory relation between the fundamental properties and the causal powers they confer: It is the natures of fundamental properties that explain, metaphysically explain, why they confer the powers they do. So where the pure powers view takes the relations between properties that determine the behaviour of their instances to be *constitutive* of properties, the grounded view takes it to be the natures of the properties themselves that metaphysically explain why these relations obtain. On the grounded view a property

is not the property it is because of the relations it stands in to other properties, instead a property stands in the relations it does *because* it is the property it is.

It was then attempted to provide an account of this explanatory relation. The first step was to compare this relation to the notion of ontological dependence discussed by Lowe and Fine. This was a relation that could not be explicated in modal terms and which was anti-symmetrical. It was then suggested that as far as we understood this notion we could understand a relation of metaphysical explanation running in the opposite direction. So where the identity of a set *depends* on the identity of its members, the identity of its members *explains* the identity of the set.

The second step was to argue that we are in fact already familiar with the metaphysically explanatory relation that the grounded view takes to hold between the natures of fundamental properties and the causal powers they confer; it is the very relation that we ordinarily take to hold between many of the properties of medium sized objects that we encounter in perception.

That is, in our ordinary understanding we take the *nature* of many of the properties of medium sized objects to explain why they confer the causal powers they do. Roundness as an example of a shape property was considered as a property where we ordinarily understand the nature of the property to explain why it confers the powers it does. In this case it was suggested that perhaps it is somehow intelligible or perspicuous *how* the nature of the property explains the causal powers it confers. However, it was argued that this feature of perspicuity/intelligibility was not present in other medium sized cases where we take the nature of the property to be explanatory in the very same way. And in the case of the fundamental properties, it may well be for us necessarily unintelligible how the nature of particular properties explains why they confer the causal powers

they do. However, it was argued that this should provide no bar to us taking this relation to hold. The non-perspicuous nature of the relation at the fundamental level is an epistemological and not a metaphysical problem.

Finally it was suggested that the obtaining of this relation of metaphysical explanation between properties and the powers they confer can help provide the grounded view with an account of the falsity of QT1 and QT2.

It was suggested that since properties have their natures necessarily and that nothing else but the natures of properties is involved in the explanation of why a properties confer the power they do, QT1 is false. This requires that the relation of metaphysical explanation works the same in all worlds and it was claimed that it does, and that this is a plausible claim.

The grounded view's account of the falsity of QT2 is a little more tentative, though it was argued that it was plausible. The challenge faced in providing an account of the falsity of QT2 is to provide an account that makes plausible why two properties cannot have conferred the same powers. The grounded view's account rests on the intuition that two properties cannot genuinely be distinct unless there is possible way in which their instances can behave differently. The challenge then becomes in providing an account that can support this intuition. It was suggested that the fact the nature of properties explains why they confer the causal powers they do can provide the intimate relation between the natures of properties and the causal powers they confer that this intuition requires. It was admitted, however, that no argument has been give against a view just like the grounded view but which accepts QT2.

The grounded view has been offered as an alternative anti-quiddistic view to the pure powers view. The grounded view does not find it necessary, in order to deny QT1 and QT2, to make the constitution claim. And as was seen in chapter 2, the constitution claim opens up the pure powers view to the identity regress argument. In addition to this it is suggested that the grounded view offers a very plausible view about the relation between properties and powers. The principal motivation for the grounded view's claim that the natures of properties explain why they confer the powers they do is *not* to provide an anti-quiddistic view that avoids the identity regress argument. Rather that it is the *nature* of properties that explains how their instance behave is motivated by more basic fundamental intuitions. It is of course realised that such intuitions are just those rejected by modern 'Humean' philosophers.⁷⁸ As such the grounded view is principally offered as an alternative to other supposedly anti-Humean views. The necessity involved in the grounded is just the kind of necessity that I take Humean views to reject. It is however not a necessity that I think those with anti-Humean intuitions should find peculiar. The way the world *is* metaphysically explains how it will *behave*; the world is not, contra Lewis, 'just one little things and then another'.

⁷⁸ The inverted commas are to avoid any commitment to aspects of Hume scholarship. They will now be omitted with the preceding implicit caveat.

Conclusion.

The aim of this short conclusion is to provide an overview of the dialectic of this thesis.

The topic of this thesis has been the relationship between properties and the powers they confer. The views considered have all been initially introduced by their position of the quiddistic thesis (QT):

QT: QT1: For each fundamental property, *P*, there is a world, *W*, distinct from the actual world and such that *P* confers different causal powers in *W* than it does in the actual world. QT2: For each fundamental property *P* there exists a world that contains *P* and a distinct property *Q* such that *P* and *Q* confer the very same causal power(s).

The view that holds QT (the conjunction of QT1 and QT2) has been called quidditism and was discussed in chapter 1. Chapters 2 and 3 presented the pure powers view and the grounded view respectively. Both of these views are anti-quiddistic views in so far as they deny both QT1 and QT2. The pure powers view supports this denial with the constitution thesis. The grounded view supports this denial by pointing to a metaphysically explanatory relation that holds between the natures of properties and the causal powers properties confer.

It certainly has not been supposed that views considered are representative of all available options. For instance, it was said that that only 'unified' views were to be considered – no views have been considered that hold that something like QT is true for some fundamental properties and false for others. Additionally no view that holds only one other of QT1 and QT2 has been considered. However, notwithstanding the reduced scope that these

exclusions provide it is hoped that the arguments considered in the discussion of quidditism and the pure powers view are arguments of interest to a substantial portion of the debate and, additionally, that the grounded view presents an at least interesting sketch of a serious alternative view to those currently on offer.

It is the contention of this thesis then that the grounded view presents the most attractive view under discussion. This is, of course, a qualified contention. No argument has been given against quidditism that I would expect to alter the views of any of its proponents. The contention that the grounded view is the most attractive view is predicated somewhat on a general suspicion of the consequences of quidditism (as well as perhaps its motivations). And, as said, no argument has been give here against these. However, in the final assessment of *anti-quiddistic* views I believe genuine reason is present for preferring the grounded view to the pure powers view and an attempt at something like such an assessment is made below. Prior to this, a brief summary of the argument of chapter 1 will now be given.

Chapter 1 presented *quidditism* – the view that holds QT. The principal claim of this chapter was that an argument given by David Lewis about the epistemological consequences of quidditism was stronger than has been supposed in the literature.

Lewis' argument in 'Ramseyan Humility' begins from the premise that the fundamental properties are implicitly named by our physical theory, T. By this Lewis means that names are given by T to whatever plays some role described in the theory. As such, Lewis argues, all of our evidence for our theory is merely evidence for the Ramsey-sentence of T. And since on quidditism the Ramsey-sentence of T could have been satisfied in a different way that actually is – that is, the roles could have been played by different properties than actually

play them – Lewis argues that we cannot know which properties play which roles. This is the conclusion of ‘humility’.

Where considered, Lewis’ argument has been found to be unsuccessful, principally for one of two reasons. Either it is argued that since T is actually uniquely satisfied we do know what properties play which roles – the reference fixing response –, or it is argued that Lewis’ argument is merely a standard sceptical argument and can be met with standard sceptical solutions – the response from scepticism.

It was then argued that Lewis’ argument works by the same mechanism that is employed by two dimensional semantics in their analysis of cases of the supposed necessary a posteriori and contingent a priori. Indeed, this is exactly what Lewis suggests in his consideration of the reference fixing response in ‘Ramseyan Humility’. Given this, it was suggested that it was less than straightforward to invoke the reference fixing response, since such a response must appreciate that is opposed to the wider philosophical view of which Lewis’ argument is a part. Additionally, discussion of the relation between the humility argument and two dimensionalism allowed greater clarity as to what exactly the ignorance was supposed to be in the properties case. Specifically, it was seen that the ignorance Lewis claims we have toward the fundamental properties is of a kind with the ignorance ascribed to subjects by the two dimensionalist in their analysis of the apparent contingent a priori.

In light of the discussion of the reference fixing response, the response from scepticism was considered. By comparison again with two dimensionalism’s analysis of the contingent a priori it was argued that the response from scepticism fails. Specifically, it was argued that the response faced a dilemma. Either there was no apparent belief for the quiddistic sceptic to doubt (so nothing for a response to scepticism to save) or any such belief could not in fact, for all the subject could tell, actually be false. Given this dilemma it was argued that the response from scepticism fails. The humility argument is not a standard sceptical argument.

Chapters 2 and 3 then considered the anti-quiddistic views *the pure powers view* and *the grounded view*. The main argument of each of these chapters will be very briefly summarised before a more general brief comparison of the views is attempted.

Chapter 2 presented and considered an argument against the pure powers view. The pure powers view is the view that holds the constitution thesis. The constitution thesis is the thesis that properties are constituted by conferring the powers they do; all there is to the possession of a property by a particular is the possession of a power. The first part of this chapter considered the details of this claim; if properties are powers, what's a power? It was seen that the pure powers view wished for the possession of a power by a particular to be a more substantive state of affairs than the mere obtaining of a counterfactual conditional. The following understanding of the pure powers view was arrived at, the formulation of which is based on Bird's view present in his *Nature's Metaphysics*.

To say that a property is constituted by conferring the causal powers it does is to say that properties are constituted by the relations they hold to one another, where it is the holding of these relations that determines how their instances will behave. So certain relations are taken to hold between properties, relations whose obtaining determines how their instances will behave. What is distinctive of the pure powers view is that it takes the obtaining of these relations to be *constitutive* of the identity/essence of the properties.

This view was then seen to be open to an argument that was called the identity regress argument. The identity regress argument holds that for one entity to play a determining role with respect to the identity of another

entity, this first entity must itself have determinate identity. The identity regress argument finds that the pure powers view violates this principle. Since for any property it is the property it is in virtue of how it is related to other properties it relies for its identity on these other properties. But since this is true for all properties, no property has the determinate identity required to play the determining role for another property. And so no property can get its identity fixed.

Bird was then seen to present an argument drawing on graph theory designed to prove that the members of a set of entities can in fact be individuated purely relationally. However, it was then suggested that Bird's response is in fact a response to a different problem that can be thought to arise in cases where the identity of some entities is to be determined purely relationally. This alternative problem – called the identical essences argument – was shown to be distinct through a series of simple cases. It was then argued that Bird's response provides a response to this problem and not to the one raised by the identity regress argument.

Note that no argument was given in support of the principle behind the identify regress argument, though it can perhaps be thought to have some intuitive support. The argument of chapter 2 attempts only to show that the response offered to the argument is in fact a response to a different argument and so the identity regress argument remains to be answered by the pure powers view.

In chapter 3 an alternative anti-quiddistic view was offered. The grounded view also denies QT1 and QT2, yet it does not hold the constitution thesis. It was then noted that this set of claims does not receive much prominent attention in the literature. It was then suggested that this can be in part explained by the apparent existence of the 'constitution assumption'. This is the assumption that if a property confers the powers it does necessarily and sufficiently then conferring these power must be constitutive of it. In looking at the

constitution assumption two motivations for it emerged corresponding to the denial of QT1 and QT2. First there is the worry about necessity: if it is not of the essence of a property to confer the powers it does, then what could explain its doing so of necessity? Secondly, the worry about sufficiency: if there is anything else to the essence of a property other than conferring the powers it does, what could prevent two properties from conferring the same powers? These motivating worries were then seen to provide a challenge to the grounded view to provide some account of the falsity of QT1 and QT2.

The thesis of the grounded view is then this: It is the intrinsic nature of a property that metaphysically explains why that property confers the causal powers it does. The onus is then on the grounded view to provide some account of the metaphysically explanatory relation and to say how it supports the denial of QT1 and QT2.

It was then argued that we are in fact perfectly familiar with the relation that the grounded view takes to hold between the natures of the fundamental properties and the causal powers they confer: It is the relation that in our ordinary, pre-theoretic, understanding we take to hold between the natures of the properties of medium sized objects and the powers *they* confer. For instance, we take it that being round is a way medium sized things can be and that there is something about this way of being that metaphysically explains why round things behave as they do. It is the nature of roundness that explains, metaphysically explains, why round things behave as they do.

Now, it was noted that in the case of roundness that this relation between the nature of roundness and the causal powers it confers might be thought to be somehow perspicuous to us; not only do we take the nature of the property to explain why it confers the powers it does but we also have, perhaps, some kind of access to this relation – we can see *how*, we might say, the nature of roundness explains the powers it confers. This kind of

perspicuity is not available to us at the fundamental level. It argued however that this presents no bar to understanding *that* the relation holds between fundamental properties and the power they confer. In this sense then, our only knowledge of the nature of the fundamental properties is as whatever explains the powers they confer. This, perhaps necessary, epistemological bar provides no valid reason whatsoever, I claim, to our holding that this relation does obtain at the fundamental level. It is the nature of each fundamental property that explains, given the natures of the other fundamental properties, why it confers the powers it does.

It is the obtaining of this relation that the grounded view offers in support of its denial of QT1 and QT2. It should be emphasized that this relation is offered in *support* of the denial of QT1 and QT2. So dialectically, the obtaining of this relation is not supposed to entail the falsity QT1 and QT2. That is, no argument has been given that the obtaining of such a relation entails the falsity of QT1 and QT2. The obtaining of the explanatory relation is offered as part of an account to make plausible the denial of QT1 and QT2 that does not hold the constitution thesis.

That said, an attempt was made to show how it is plausible to hold that QT1 and QT2 are false if this explanatory relation holds. In the case of QT1 it was argued that since properties have the natures they do necessarily, and that there is nothing else but the nature of a property (or at least nothing else that is contingent) involved in the metaphysical explanation of why a property confers the powers it does, properties therefore confer the powers they do of necessity. This relies on the assumption that the relation of metaphysical explanation works in the same way in every world and so is such that a single nature cannot explain the conferring of one power in one world and another in another. I think it is highly plausible that the explanatory relation sketched is one that does work in the necessitating way.

The falsity of QT2 relies on the intuition that there could not be two genuinely distinct properties that could not possibly differently affect the behaviour of their bearers. It was conceded that this intuition required support. It was suggested that the obtaining of the explanatory relation went some way to providing some support. That is, it goes some way to supporting the intimate connection between the natures of properties and the causal powers they confer that the intuition requires. It was conceded, however, that no argument has been given against a view, similar to the grounded view that does not hold QT2.

As suggested in the conclusion to chapter 3, the grounded view is offered primarily in competition to other anti-quiddistic views, principally the pure powers view. It is the perhaps hyperbolic and definitely ad-hominem claim of this conclusion that the grounded view presents the genuine anti-quiddistic, anti-Humean view. To explain: Both the pure powers view and the grounded view present a world-view, if you will, in which certain necessities obtain that are *prima facie* contrary to the combinatorial principles of the Humean views discussed in chapter 1. However, I do not take the pure powers view to in fact present anything *fundamentally* anti-Humean. Whilst the picture of the world arrived at is one that differs vastly from the contemporary Humean view (for instance, the laws of nature come out necessary and not contingent), picture is built up from foundations that are not, as I understand them, necessarily anti-Humean. The necessity of the relation between properties and the causal powers they confer, and thereby the necessity of the laws of nature, on the pure powers view stem from what I would understand as a perfectly legitimate kind of source on a Humean picture. Properties are *constituted* by the relations that obtain between them. This is not (by Humean eyes) a mysterious source of necessity and one that is presumably acceptable on the Humean picture.

If we once again compare the pure powers view to Armstrong's view of properties and powers: The difference in the views is that the relations that obtain between the properties (that determine the behaviour of their instances) on Armstrong's view are contingent whilst on the pure powers views are constitutive of the identity

of the properties. As far as I understand matters this difference in view does not straightforwardly divide on traditional Humean/anti-Humean intuitions. Put in very basic terms, as I understand it, the dividing intuition is that on the Humean understanding there can be no genuine necessary relations between distinct entities. On the pure powers view, properties, and therefore states-of-affairs consisting of particular and properties, are *not* in fact distinct entities and so the necessary connections between them needn't be particularly anti-Humean in spirit, even if it is in consequence.

On the other hand, the relation offered by the grounded view is, as I understand matters, of the truly objectionable sort. Probably insufficient work has been done here to satisfactorily support the necessary connections the grounded view claims. However, it is hoped the view is representative of its motivating intuitions and that some work has been done toward making the view viable.

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