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# Reformulating Modalism

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REFORMULATING MODALISM

by

Aaron Arinder

A Thesis Submitted

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ABSTRACT

REFORMULATING MODALISM

by

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The University of Wisconsin-Milwaukee, 2016  
Under the Supervision of Professor Joshua Spencer

In accounting for something's essence, the features it must have are good candidates for being essential to it. Call this view *modalism*. Kit Fine (1994) raises some objections to modalism, and I respond by reformulating it in a way that avoids those objections. My reformulation makes use of grounding identities, and it is on better footing than two recent reformulations of modalism by Nathan Wildman (2013) and David Denby (2014). The claim that something grounds a thing's identity is controversial, and so I develop an argument for it showing that the identities of things are grounded in either qualitative features, non-qualitative features, or nothing at all. And it turns out that identities being grounded in either non-qualitative features or nothing at all is implausible. So, identities are grounded in qualitative features, and the qualitative features that ground a thing's identity are the ones essential to it.

To Liz, with love and adoration

With thanks to the redoubtable Dr. Spencer

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## Introduction

What is the essence of Socrates? Some philosophers, such as Alvin Plantinga (1974) and David Lewis (1968), think Socrates' essence is the collection of features he must have. Other philosophers, such as Kit Fine (1994), think Socrates' essence is a definition of him. Call the former view *modal* and the latter view *definitional*. The modal view was the dominant view before Fine's objections to it. The popularity of the modal view was due in part to the development of modal logic in the 20<sup>th</sup> century, which allowed for its easy formulation. However, Fine's objections to the modal view have now made the definitional more popular. Fine's primary objection to the modal view is that it is too coarse-grained to adequately capture what we intuitively think of as an object's essence.

In this paper I offer a reformulation of the modal view that avoids this objection. My reformulation uses the notion of grounding, and makes a controversial claim: identities are grounded, allowing the essential features of an object to be those that ground its identity. Here is how the rest of the paper goes: I introduce Fine's objections to the modal view (§1), and then give my reformulation of it (§2). After that, I give and reject two recent reformulations of the modal view, one from David Denby and another from Nathan Wildman (§3). After showing that my reformulation fares better than the other two, I consider three objections to it.

The first objection is that nothing grounds identities (§4). This objection comes from David Lewis and Nathan Salmon, who hold that nothing makes two things identical since two things never are identical. I respond with an argument that identities are grounded in an object's qualitative features. The second objection comes from Max Black's famous thought experiment of two qualitatively identical spheres alone in some world, presumably showing that the qualitative facts do not ground the non-qualitative ones. (§5). My response to this objection is to provide an argument that non-qualitative facts are grounded in qualitative ones. Finally, the third objection is that grounding non-qualitative facts in qualitative ones is simply implausible (§6). I reply with a thought experiment to the

contrary. I then turn to explaining why and how qualitative facts ground non-qualitative facts (§7).

## 1. Introducing the problem

There are different ways to formulate the modal view, but Fine focuses on just one. He calls it *Existentialism*, which takes as essential those features an object must have if it exists. Fine's objections to Existentialism also apply to the other formulations, but rehearsing those formulations would take us too far afield, and needlessly so. The rest of this section gives the formalization of Existentialism and Fine's objections to it. Here is the formalization:

(*Existentialism*)  $F$  is an essential feature of  $x$  = (by def.) Necessarily,  $x$  is  $F$  if  $x$  exists.

Fine has three objections to Existentialism, all showing it to inadequately capture what we intuitively think of as essential. Fine uses Socrates as an example. For the first objection, consider Socrates and the set whose sole member is Socrates,  $\{Socrates\}$ . On one hand, Socrates must have the feature *being a member of  $\{Socrates\}$*  if he exists. On the other hand,  $\{Socrates\}$  must have the feature *containing Socrates* if  $\{Socrates\}$  exists. So, according to Existentialism, both features count as essential to their respective bearers because both features must be had if their bearers exist. Yet, there is an intuitive distinction between those two features.

The feature *containing Socrates* is plausibly essential to  $\{Socrates\}$ , but the feature *being a member of  $\{Socrates\}$*  is not plausibly essential to Socrates. An answer to 'what is it to be Socrates?' that says he is a member of  $\{Socrates\}$  would (and should) be met with incredulity. For the feature *being a member of  $\{Socrates\}$*  has nothing to do with what it is to be Socrates. Yet, Existentialism counts that feature as essential to him.

Fine's second objection to Existentialism is that it counts the feature *exists* as essential to

Socrates. It must be the case that if Socrates exists, he exists. So, the feature *exists* is essential to Socrates. Yet, presumably only God and other similar beings, and not Socrates, exist essentially.

Fine's third objection is that Existentialism mistakes features like *being such that  $2+2=4$*  as essential. Such properties are about necessary truths, which are truths that must be true, and so features pertaining to necessary truths are had by everything that exists. Yet, there is nothing about what it is to be Socrates that pertains to it being the case that  $2+2=4$ .

Generalizing away from Socrates, these objections show that Existentialism does not capture what we intuitively think of as essential. After objecting to the modal view, Fine gives his own definitional view. That view was briefly outlined in the introduction, and giving its full details would take us too far afield. My task in this paper is to reformulate the modal view in order to provide a defensible way of thinking about essence using modality. The next section provides the reformulation and uses it to reject Fine's objections.

## **2. Reformulating the modal view**

Like Existentialism, my reformulation is about existing objects. This requirement blocks non-existent things having essential features. Unlike Existentialism, my reformulation makes use of the grounding relation. The first part of this section clarifies the notion of grounding I use and its application in the formulation. The second part gives the reformulation of the modal view and how it rebuffs Fine's objections. The reformulation is, roughly, that the features grounding an object's identity, if that object exists, are essential to it. The reformulation rebuffs Fine's objections because those features Fine picks out as problematic are not ones that ground Socrates' identity.

Much of the thinking on grounding, being relatively new, is hotly debated. Some philosophers, e.g. Jessica Wilson (2014 & forthcoming), Chris Daly (2012), and Jody Azzouni (2012) are skeptical of it, and I share some of that skepticism. But I also think there are interesting philosophical views that



use grounding. One such view is the reformulation of modalism, and so for the sake of this paper I assume that there is a genuine grounding relation.

Grounding is a relation of determination holding between facts, and it provides an explanation of why the grounded facts obtain. Consider steel bars, which have tiny crystalline lattice structures. These structures are little rods that make up the grain of the bar, and they determine how strong the bar is. By featuring determination, an explanation of the bar's strength is a grounding one. Moreover, an explanation of the bar's strength is not a causal one. Causal explanations require an antecedent event that is related, in the right way, to a later event. What event is antecedent to the bar's strength? None, for the crystalline structure occurs simultaneously with the bar's strength. We thereby need a non-causal, grounding explanation to adequately explain the strength of the bar.

Grounding also plays an explanatory role in aesthetics.<sup>1</sup> Jackson Pollock's paintings are beautiful (though if you find that controversial, substitute Caravaggio's 'Calling of St. Matthew', whose beauty surely no one would deny). An explanation of the beauty of one of Pollock's paintings is not a causal one. Though Pollock's dribbling and splattering of the paint is the cause of the painting, it is not a cause of the painting's beauty. The painting is beautiful in virtue of the arrangement of the paint. One might retort that causation is best understood counterfactually, and that if Pollock had not painted the painting, it would not be beautiful. Yet, answering 'why is the painting beautiful?' with 'Pollock painted it' is to badly misunderstand what makes something beautiful. Some of Pollock's paintings are not beautiful, but were painted by him. The answer 'Pollock painted it' is true for both his beautiful and ugly paintings, but it is unilluminating as an answer to why those paintings are beautiful or ugly.

Now for the more technical stuff. As I understand grounding, it is a relation rather than an operator. Grounding is a relation of determination, and is therefore both irreflexive and asymmetric.

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<sup>1</sup> Grounding also plays an explanatory role in ethics, cf. Cuneo and Shafer-Landau (2014).

I assume that it is transitive, but that assumption is controversial (cf. Schaffer 2012, Javier-Castellanos 2014). Some philosophers think grounding is primitive, which seems plausible to me (cf. Schaffer 2009 and Fine 2001). I assume that the relata of grounding are facts, understood as obtaining states of affairs. (I often leave it implicit that I am concerned with facts grounding facts in order to talk about the content of those facts for readability's sake.) Here is the form of grounding statements: fact A grounds fact B.<sup>2</sup> With the technical details out of the way, here is the modal view reformulated:

*(Reformulated modalism)* x is essentially F =(by def.) For any y, necessarily, y is F and the fact that y is F grounds the fact that x = y, if x exists.

The reformulation is not subject to Fine's objections since it *does* capture all and only those features that are essential. Recall that Fine's first objection to Existentialism is that it counts *being a member of {Socrates}* as essential to Socrates despite it not being essential. The reformulation does not count *being a member of {Socrates}* as essential to Socrates since it does not ground his identity. That is, there is nothing about {Socrates} that determines what Socrates is.

Fine's second objection is that Existentialism mistakes the feature *exists* as essential to Socrates, but presumably only God and other similar beings exists essentially. The reformulation need not take a stand on whether the feature *exists* is essential to Socrates since it is unclear whether the feature *exists* does ground Socrates' identity. Once it becomes clearer whether it does or not, the question of its essentiality can be settled. It would not do, however, to settle that question merely by stipulation via the reformulation of the modal view.

Fine's third objection is that Existentialism counts the feature *being such that  $2+2=4$*  as essential

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<sup>2</sup> For simplicity's sake, I gloss over how many relata there are in grounding. I want to leave it open that a fact can ground a plurality of facts; cf. Trogden 2013 and Schaffer 2009.

to Socrates, but it is not. The reformulation replies: there is nothing about Socrates' identity that is grounded in it being the case that  $2+2=4$ . So, the reformulation rebuffs Fine's three objections to Existentialism. The reformulated modal view thereby rebuffs Fine's objections. The reformulation has shown itself worthwhile, but it requires accepting that identities are grounded. That is a controversial claim, one that I take up in section four. Before arguing that identities are indeed grounded, I turn to two recent reformulations of the modal view and show them to be inferior to the reformulation I offer.

### 3. Other reformulations

David Denby and Nathan Wildman give reformulations of the modal view. Denby's reformulation restricts the features that may count as essential to only *intrinsic* features (2014). Intrinsic features pertain only to how an individual object is and to nothing else. Any feature that is not intrinsic is extrinsic. For example, the feature of *being mass m* pertains only to its bearer and to nothing else, and is thereby intrinsic. Yet, consider Socrates standing near his wife. His feature *being 3ft from Xantippe* involves a distance relation between himself and his wife, and is thereby extrinsic. A good test for the intrinsicity of a feature is whether it could vary between duplicates (Denby 2014: 7). If it can, then the feature is not intrinsic. If it cannot, then it is intrinsic. Here is a reformulation of the modal view in terms of intrinsic features:

*(Intrinsic reformulation)*  $x$  is essentially  $F$  = (by def.) Necessarily,  $x$  is intrinsically  $F$ , if  $x$  exists.

Wildman restricts the features that may count as essential to only *sparse* ones (2013). Sparse features are intrinsic, highly specific, and there are only enough of them to characterize everything completely

and without redundancy (Lewis 1986: 60).<sup>3</sup> Sparse features characterize qualitative similarity, carve out causal powers, and serve as a minimal ontological basis (according to Lewis 1986) or as a basis for linguistic truths (according to Schaffer 2004). Abundant features are those that are not sparse, but it should be noted that sparse features are a special subset of abundant features. And we need abundant features in order to provide the semantics for our predicates, which can be as gruesomely gerrymandered as you please. Here is the reformulation of the modal view in terms of sparse features:

*(Sparse reformulation)*  $x$  is essentially  $F$   $\equiv$  (by def.) Necessarily,  $x$  is sparsely  $F$ , if  $x$  exists.

Recall that sparse features are intrinsic. That means that since Wildman's reformulation involves intrinsic features, it fails if Denby's does. And Denby's reformulation fails for three reasons. It forces us to reject a plausible view of sets for a controversial one; it may not prove adequate in response to Fine's first objection, and it also forces us to reject that originated objects have their origins essentially.

The first problem with Denby's view arises from his solution to Fine's first objection. Recall that the first objection is that Existentialism counts both features, *being a member of {Socrates}* and *having Socrates as member*, as essential to their bearers. However, the feature *being a member of {Socrates}* is not essential to Socrates. Denby's response denies that the feature *being a member of {Socrates}* is essential to Socrates. Socrates and {Socrates} are different objects, and the former's relation to the latter is an extrinsic one. The problem is that Denby's answer to Fine's first objection is far-reaching. {Socrates}'s feature *containing Socrates* is extrinsic and thereby not a candidate for being essential (. Yet, the feature *containing Socrates* does seem essential to {Socrates}. Denby's response is that we have no compelling

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<sup>3</sup> Though I quote Lewis, it shouldn't be thought that Wildman adheres to sparse features being those that are of fundamental physics; rather, he thinks something like Schaffer's view is the right way to go. Schaffer's view is that sparse features are those used in our scientific understanding and explanations, allowing for different levels of reality to all be genuinely real (2004).

reason from set theory, semantics, epistemology, or metaphysics to accept that sets are what they are in virtue of the members they have (2014: 14). Denby thinks we should therefore reject that the feature *containing Socrates* is essential to  $\{Socrates\}$ . However, sets having their members essentially seems plausible, and any philosophy compelled to accept that view of sets will not find Denby's view palatable. My reformulation does not require we take any specific stand on the nature of sets, and is thereby preferable.

The second problem with Denby's view involves the intrinsicity of the relation holding between the member of a set and the set itself. Perhaps there is a similarity between parthood, the relation holding between parts of an object and the whole object, and membership, the relation from the member of a set to the set itself. Parthood is intrinsic, so perhaps membership is too. The membership relation is mysterious, and it would not be surprising if it turned out to be intrinsic. If there is a similarity between parthood and membership, then Denby's view cannot avoid Fine's first objection. The feature *being a member of  $\{Socrates\}$*  would be intrinsic and thereby a candidate for being essential to Socrates. Denby's response would thereby fail.

The third problem Denby's view suffers from pertains to the essentiality of origins. The problem is that he forces us to reject that objects have their origins essentially, which is a plausible (though controversial) view. That is, plausibly, it is essential to Socrates that he come from a particular zygote and no other. Likewise, it is essential that a particular table be made out of its originating material (or material sufficiently overlapping that original material) and no other material.<sup>4</sup> Yet, the features *originating from zygote  $z$*  and *originating from matter  $m$*  are extrinsic since they are relations holding between their exemplifiers and something else, their origins. So, Denby's reformulation cannot allow for originated objects to have their origins essentially. He thereby settles the truth of origin essentialism with his reformulation of the modal view. My reformulation of the modal view leaves the possibility

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<sup>4</sup> See Kripke 1980: 112-4.

that origins are essential open, and is thereby preferable to Denby's.

Denby's reformulation uses intrinsic features, and Wildman's reformulation uses sparse features; sparse features are intrinsic, and so both reformulations fail if Denby's does. And Denby's view fails for three reasons. First, his view requires we jettison a plausible view of sets, which holds that sets have their members essentially. Also, his response to Fine's first objection may not work, for membership may be intrinsic. And lastly, his view forces us to reject that objects have their origins essentially. My reformulation does not require having any specific view on the nature of sets, nor does it require membership to be extrinsic, nor does it require we take a stand on origin essentialism. For those reasons, my view is preferable to the views of either Denby or Wildman.

#### **4. The first objection: nothing grounds an identity**

This section argues that the identity of an object is grounded in its qualitative features.<sup>5</sup> My reformulation counts the features that ground an object's identity as essential, but this may strike some as implausible. Consider David Lewis, writing in *On the Plurality of Worlds* (1980: 192-3, my emphasis):

Identity is utterly simple and unproblematic. Everything is identical to itself; nothing is ever identical to anything else except itself. There is never any problem about what *makes* something identical to itself; nothing can ever fail to be. And there is never any problem about what *makes* two things identical; two things never can be identical.

To make an identity is to ground it, and if Lewis is right, identities do not have grounds. Similarly, Nathan Salmon thinks there is nothing in the qualitative features of an object that grounds its identity.

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<sup>5</sup> Recall from pg. 5 that grounding is a relation between facts, but for readability's sake I often leave it implicit that I am talking about facts.

The distinction between qualitative and non-qualitative features is hard to capture, and may be primitive (see Cowling 2014 for an extended discussion on this), but a rough understanding of the distinction via examples suffices for the purposes of this paper. Consider features like *being mass  $m$* , *being red*, *being made of iron*, which are qualitative features, and non-qualitative features like *being Socrates*, and *being 3 feet from Xantippe*. The former features do not require that a certain object exist, for they can be shared by many objects. Lots of objects can have mass  $m$ , be red, or be made of iron. The latter features, however, require certain objects to exist: Socrates is the only object with the feature *being Socrates*, and the feature *being 3 feet from Xantippe* requires Xantippe to exist. According to Salmon, qualitative features do not ground an object's identity, but his argument leaves it open whether non-qualitative features do. Here is a formalization of his argument.<sup>6</sup>

- 1) There is nothing in the qualitative features of  $x$  grounding  $x = x$ .
- 2) So, by Leibniz's Law, if  $x = y$ , then there is nothing in the qualitative features of  $x$  grounding  $x = y$ .

At first glance, Salmon's argument looks quite strong. It perfectly captures what Lewis was getting at in the quote above: nothing makes something identical to itself, nor does anything make two things identical (for they never are). Salmon's argument turns out to be no good, though, because the first premise is false. Assume it for a reductio:

- 1) There is nothing in the qualitative features of  $x$  grounding  $x = x$ .

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<sup>6</sup> He makes this argument three times, with slight modifications. For absolute identity, 'The fact that  $x = y$ '. For personal identity and transworld identity, 'Personal Identity: What's the Problem?'. If my argument is sound, then all three of his arguments fail.

There are only two plausible candidates remaining for grounding the fact that  $x = x$ . First, nothing at all, qualitative or not, grounds  $x = x$ . Second, a fact about  $x$ 's non-qualitative features grounds  $x = x$ . Extrinsic features are implausible grounds for a thing's identity. For example, one such ground might be God setting the qualitative and non-qualitative facts of the world to be a certain way. Such facts include the non-qualitative facts, and so everything's identity is grounded (somehow) in God's setting of the facts. That seems implausible, as do other candidate extrinsic features.<sup>7</sup> Disjoining the two plausible candidates for grounding  $x = x$  gives (2):

- 2) Either nothing grounds the fact that  $x = x$  or facts about  $x$ 's non-qualitative features do.

Nothing grounding  $x = x$  means that  $x = x$  is at the lowest level of reality (Trogden 2013: 113). That is,  $x = x$  is at the bedrock of reality since whatever is groundless is fundamental to reality, and since the fact that  $x = x$  contains  $x$  as a constituent, then nothing grounding  $x = x$  means that  $x$  is fundamental to reality. Yet,  $x$  is probably not fundamental. Let  $x$  be Socrates. Presumably, Socrates is not part of fundamental reality. What kind of world would that be, in which Socrates is fundamental to reality? Not one that we could make much sense of. So, since  $x$  is not at the lowest level of reality, something does ground  $x = x$ , which gives (3):

- 3) It is not the case that nothing grounds  $x = x$ .

From (2) and (3), and disjunctive syllogism, we get (4):

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<sup>7</sup> The exception for extrinsic features grounding a thing's identity is that thing's origin. It might be that Socrates has the feature *originating from zygote*  $z$  essentially, with that feature thereby grounding his identity. Origins essentialism is compatible with my reformulation, but not with the argument of this section. That is alright, for the target of this section's argument is the philosopher who holds that nothing (including origins) grounds identities.



- 4) So, facts about  $x$ 's non-qualitative features ground  $x = x$ .

Salmon's argument above is against qualitative features grounding identities, so he (or anyone else against qualitative features grounding identities) could accept (4). However, a problem arises. Recall the steel bar example above. The crystalline structure of the bar is more fundamental than the bar's strength, for it determines the bar's strength. The way grounding provides explanations is by relating facts that are more fundamental to facts that are less fundamental, and so the explanans must be more fundamental than the explanandum. However, facts about the non-qualitative features of  $x$  are on the same level of fundamentality as  $x = x$ . For example, the feature being Socrates concerns what it is to be Socrates—Socrates' identity. So, grounding Socrates' identity in a non-qualitative feature such as being Socrates does not work. The explanans and explanandum are on the same level of fundamentality. There are other non-qualitative features such as being 3ft from Xantippe, but they are not plausible candidates for what it is to be Socrates since they are not about Socrates, and I disregard them here. Generalizing, a fact about  $x$  such as being  $x$  is no more fundamental than the fact that  $x = x$  and so it cannot serve as a grounding explanans for why  $x = x$ . The foregoing gives (5).

- 5) Yet, it is not the case that facts about  $x$ 's non-qualitative features grounds the fact that  $x = x$ .

Conjoining (4) and (5) produces a contradiction, proving the following:

- 6) So, something in  $x$ 's qualitative features ground the fact that  $x = x$ .

This argument shows that identities do have grounds, and that they are qualitative. We should reject both Salmon and Lewis's objections, for there is something that makes identities hold: qualitative features. Thus completes my defense of the reformulation permissibly using the grounding of identities. It must be the case that if an object exists, then the features grounding its identity are the features essential to it, and those features turn out to be qualitative.

## **5. The second objection: back to Black**

In this section I consider an objection to qualitative features grounding identities. Max Black (1952) has us conceive of a world in which there exists only two distinct yet qualitatively identical spheres. Such a world seems possible, and so it seems that the non-qualitative facts are not grounded in the qualitative ones.<sup>8</sup> This means that two distinct objects could be qualitatively identical, yet themselves be distinct. However, if the argument of the last section is sound, then qualitative features ground identities, and any things sharing all and only the same qualitative features will be identical. So, Black has apparently furnished a counterexample to my view. Black's world has distinct yet qualitatively identical objects, directly contradicting the view that identities are grounded in the qualitative features of objects. How should we understand this disagreement? It rests on the plausibility of Black's world, which I argue against below.

My response to this objection is that such a world as Black's, though conceivable, is impossible.<sup>9</sup> The possibility of such a world requires that facts about non-qualitative features be grounded in other non-qualitative features. So, Black must deny that facts about the non-qualitative

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<sup>8</sup> Black was originally concerned with supervenience (metaphysical correlation, broadly speaking) rather than grounding, and so the counterexample in this section should be understood as a modification of Black's original one. The switch from supervenience to grounding is interesting insofar as identities are grounded, which, given the argument of the previous section, seems to be the case.

<sup>9</sup> Since this paper is not about modal epistemology, I say more than the following: I think the failure of our conception in this case to be a guide to possibility has something to do with our stipulating that the two spheres are qualitatively indiscernible. Cf. Kung 2010.

features of the two spheres are grounded in facts about their qualitative features. That denial is hard to come by. Consider the argument below, showing that there is no possible world in which Black's spheres reside. Assume for reductio that there could be a world like the one Black describes, one in which the non-qualitative features are not grounded in qualitative ones:

- 1) Possibly, qualitative features do not ground non-qualitative ones.

There are only three ways that non-qualitative features may be grounded: in other non-qualitative features, in qualitative ones, or in nothing at all. Disjoining these three gives (2):

- 2) Necessarily, non-qualitative features are grounded in either other non-qualitative features, qualitative features, or nothing.

The first option, that they are grounded in other non-qualitative features, does not work. Allowing non-qualitative features to be grounded in other non-qualitative features means either that the non-qualitative features doing the grounding are fundamental to reality or are grounded in further non-qualitative features. If the latter, then those further non-qualitative features are fundamental or themselves have grounds in non-qualitative features. Whenever this chain terminates, if it terminates in non-qualitative features, then those features are fundamental to reality. Non-qualitative features are features like *being Socrates*, which, if fundamental, means that Socrates is also fundamental. The non-qualitative features that are most plausibly fundamental are features pertaining to identities, making those identities fundamental. That seems wrong, for surely Socrates is not fundamental to reality. Socrates' non-fundamentality seems to be a metaphysical truth, and thereby must be true if true at all. So, this gives (3):

- 3) Necessarily, it is not the case that non-qualitative features are grounded in non-qualitative ones.

If non-qualitative features are not grounded in other non-qualitative ones, perhaps they are grounded in nothing. This suggestion fails for the same reason as it did in the argument of the previous section. To be groundless is to be fundamental to reality, and so non-qualitative facts would be fundamental. That does not seem right, for non-qualitative facts pertain to a particular thing, requiring that it also be fundamental. For example, if *being Socrates* is fundamental, then so is Socrates, but there is nothing about Socrates that requires him to be fundamental. This gives (4):

- 4) Necessarily, it is not the case that non-qualitative features are grounded in nothing at all.

Premises (3) and (4), along with premise (2) and disjunctive syllogism, give us line (5), and conjoining premise (4) and line (5) produces a contradiction, allowing us to complete the reductio and prove that non-qualitative features must be grounded in qualitative ones. Here is how the rest of the argument goes:

- 5) So, necessarily, non-qualitative features are grounded in qualitative ones.  
6) However, premise one and premise five are together contradictory.  
7) So, necessarily, qualitative features ground non-qualitative ones.

This argument shows that in all worlds, the non-qualitative features are grounded in the qualitative ones. Black's world is impossible, for the two spheres in his world cannot share all and only the

same qualitative features and yet be distinct. Their non-qualitative features are grounded in their qualitative ones. Generalizing away from Black's spheres, there are no qualitatively identical objects that are not themselves the same. Even though we can conceive of worlds in which there are distinct yet qualitatively identical objects, those worlds are impossible, and so those worlds provide no counterexample to my argument that identities are grounded in facts about qualitative features.

## **6. The third objection: implausibility**

It may be objected that my view is simply implausible, for there is no reason to think that the non-qualitative facts are grounded in the qualitative ones. To the contrary, I provide a thought experiment that shows the plausibility of qualitative facts grounding the non-qualitative ones. Imagine that Socrates and Xantippe go through a teleportation device and accidentally become fused together in one object. Before the teleporter, the qualitative facts about Socrates and Xantippe are different. After the teleporter, the qualitative facts about them are the same, for they now share all and only the same qualitative features, including the same qualitative modal features, and also all the same qualitative features pertaining to spatial and temporal regions. The image before our mind's eye is plausibly of just one object rather than two, for presumably either Socrates, Xantippe, or both go out of existence after going through the teleportation device. And the best reason why we have one object rather than two is that the qualitative facts determine the non-qualitative facts.

## **7. Conclusion**

In this paper I have given a reformulation of the modal view: the essential features of an object are those that the object must ground its identity if it exists. This reformulation rebuffs Fine's objections, and is stronger than either Denby or Wildman's for staying neutral both about the nature of sets and the essentiality of origins.

Three objections followed. The first claims that identities do not have grounds, for nothing makes two things identical—two things never are identical. My response is that the objection, if right, makes Socrates fundamental. Since Socrates is not fundamental, the objection fails. The second objection was a Black-inspired counterexample to the argument that qualitative features ground identities. I respond in a way similar to the first objection: if the second objection is right, then Socrates is fundamental to reality. He is not, so the objection fails. In fact, the failure of this objection establishes that qualitative facts must ground non-qualitative ones. The third objection was that my position is implausible. To the contrary, I provided a thought experiment meant to show that the qualitative facts determine the non-qualitative facts.

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