

The Metaphysics of Identity: Is Identity Fundamental?

I. Introduction

While the metaphysics of identity is a broad topic, this paper has a relatively narrow focus. It examines the fundamentality status of synchronic identity and distinctness facts, facts involving the identity or distinctness of objects *at a time*. Identity and distinctness facts are ones like:

[The Eiffel Tower = The Eiffel Tower], and
[~Barack Obama = Vladimir Putin]

Such facts are unremarkable on their face, but they prove to be metaphysically mysterious. Are identity and distinctness facts *fundamental* or *non-fundamental*? This question has taken on a new character in light of recent discussions of fundamentality and grounding. Metaphysicians have discussed the fundamentality status of identity facts, but it has not typically been their central focus.¹ As a result, the discussion could use further exploration and development.

In this paper, I will first say more about what the question “Are identity and distinctness facts fundamental?” means. Next, I will explore attempts to treat identity and distinctness facts as *non-fundamental*. Finally, I will examine two approaches that treat (at least some) identity and distinctness facts as *fundamental*.

Metaphysicians have different conceptions of fundamentality. As a result, discussion of the fundamentality status of identity and distinctness facts shifts depending on the characterization of fundamentality in play. In the first part of this paper (section III), we will consider the question of whether identity and distinctness facts are fundamental in light of grounding-based characterizations of fundamentality. In section IV we will also consider how a different account of fundamentality, one that appeals to the notion of “joint-carvingness”, bears on this question.²

II. What does the question “Are identity and distinctness facts fundamental?” mean?

A. What are identity and distinctness facts?

To get clear about this question, we need a better grasp of (A) what it is to be an identity or distinctness fact, and (B) what it is to be fundamental. Let's turn to (A).

Identity and distinctness facts are ones involving the identity relation.³ Here are two examples:

Identity Fact: [The Eiffel Tower is identical to the Eiffel Tower], which we can represent as $[e = e]$.

Distinctness Fact: The Eiffel Tower is not identical to the Louvre, which we can represent as $[\sim e = l]$.

Identity and distinctness facts can also include existential and universal quantifiers.⁴ For instance, facts of the forms:

$(\exists x)(\sim x = e)$

$(\forall x)(\exists y)(x = y)$

count as identity and distinctness facts as well. The identity and distinctness facts we are concerned with pick out the identity and distinctness of *objects* or *individuals* (with one notable exception in section IV) instead of the identity and distinctness of properties, facts, or events, which are in need of separate discussion. In what follows, we will explore attempts to determine whether any identity or distinctness facts count as fundamental, and if not, why not. Next, we turn to the question what it is for a fact to be fundamental.

B. What does it mean for a fact to be fundamental or non-fundamental?

The last decade gave rise to a new body of literature trying to characterize the difference between the fundamental and non-fundamental in terms of *metaphysical ground*. One fact grounds another when the latter holds "in virtue of" the former. Accounts of grounding and fundamentality commonly go together: Less fundamental facts are grounded in more fundamental ones. And *ungrounded* facts are often treated as fundamental.⁵

For now, we will characterize fundamental facts as ungrounded facts, though it is somewhat contentious whether we should identify the fundamental with the ungrounded.⁶ In section IV, we will consider whether identity and distinctness facts count as fundamental on a conception of fundamentality that does not employ grounding.

What is it for a fact to be ungrounded? One fact grounds another when the latter obtains in virtue of the former. Grounding is a relation of asymmetric dependence holding among facts or pluralities of facts. For facts $[\varphi]$ and $[\psi]$, if $[\varphi]$ grounds $[\psi]$, $[\varphi]$ metaphysically explains $[\psi]$. A fact $[\varphi]$ is ungrounded if and only if it is metaphysically fundamental—there is nothing in virtue of which it obtains.

There are widely-accepted structural features of grounding.⁷ Grounding induces a strict partial order: it is taken to be a transitive, asymmetric, and (hence) irreflexive relation. We can distinguish two kinds of ground: full and partial ground. $[\varphi]$ fully grounds $[\psi]$ when $[\varphi]$ is sufficient on its own to metaphysically explain $[\psi]$. $[\varphi]$ partially grounds $[\psi]$ when $[\varphi]$ either on its own or together with other facts fully grounds $[\psi]$. In this sense, the plurality of facts $[\varphi]$, $[\psi]$ fully grounds $[\varphi \ \& \ \psi]$.

Conjunctive facts are fully grounded in both of their conjuncts taken together: The plurality of facts $[\varphi]$, $[\psi]$ grounds $[\varphi \ \& \ \psi]$. Disjunctive facts are fully grounded in each of their true disjuncts individually. So, when $[\varphi]$ and $[\psi]$ obtain, $[\varphi]$ fully grounds $[\varphi \ \vee \ \psi]$ and $[\psi]$ fully grounds $[\varphi \ \vee \ \psi]$.

The grounding of quantificational facts is more controversial. Existential generalizations are purportedly fully grounded in their instances; so $[\text{Fa}]$ grounds $[(\exists x)\text{Fx}]$, although we will question this later. And universally generalized facts are purportedly grounded, at least partially, in their instances. $[\text{Fa}]$ partially grounds $[(\forall x)\text{Fx}]$ although this has been questioned as well.⁸

To ask whether identity and distinctness facts are fundamental here is to ask whether *any* such facts are ungrounded. Even if we take some identity and distinctness facts to be fundamental, we may not believe that all of them are: perhaps some identity and distinctness facts, like identity facts involving subatomic particles, are ungrounded, but identity facts involving macrophysical objects are grounded in identity facts involving microphysical objects. When considering views on which identity and distinctness facts are fundamental in this paper, we will consider whether *at least one* fact involving the identity relation is fundamental. To take identity and distinctness facts to be non-fundamental is to maintain that *no* facts involving the identity relation are fundamental.⁹ If identity and distinctness facts are non-fundamental, then they must be grounded. In the next section, we will explore potential grounds for identity and distinctness facts.¹⁰

III. Identity and Distinctness Facts are Non-Fundamental

Some philosophers, such as Alexis Burgess (2012) and Kit Fine (2012)¹¹, consider ways to establish that identity and distinctness facts are non-fundamental by grounding them in facts that do not involve the identity relation. Below we will explore two approaches to grounding identity and distinctness facts: The Property Approach and The Existential Approach.¹² Then we will discuss a view that treats

identity and distinctness facts as non-fundamental but denies that they are grounded in facts that do not involve the identity relation. This third approach takes identity and distinctness facts to be zero-grounded.

A. The Property Approach

1. The First Attempt: The PII Proposal

One natural thought is that identity and distinctness facts are metaphysically explained by which properties the object(s) in question share. We can make this more precise by appealing to Leibniz's Principle of the Identity of Indiscernibles, (PII).¹³

The PII has the following form:

PII: $(\forall x)(\forall y)(\forall F)[(Fx \equiv Fy) \supset x = y]$

The PII says that for any objects x and y , when x and y have all and only the same properties, x is identical to y . The x and y -quantifiers range over objects while the F -quantifier ranges over properties. However, if we take the F -quantifier to range over all properties, the PII will be trivial: when x is distinct from y , *being identical to x* is a property x will trivially possess and y will trivially lack.

To ensure that the PII is non-trivial, we can take the F -quantifier to be restricted to certain kinds of properties, *qualitative* properties. It is difficult to define "qualitative". Very roughly, we can think of qualitative properties as ones that do not involve specific objects. For instance, *being identical to Bob* is a non-qualitative property because it involves a particular individual, Bob. *being blue* is an example of a qualitative property as it does not involve any specific individuals.

Philosophers often discuss whether the PII provides an adequate modal *sufficient condition* for object identity.¹⁴ Here we will consider whether it is plausible to use the PII to provide a *ground* or metaphysical explanation for object identity and distinctness as well.

This proposal maintains that an identity fact like [The Eiffel Tower = The Eiffel Tower] is grounded in the fact that The Eiffel Tower shares all and only the same properties with itself. A distinctness fact like [\sim Barack Obama = Vladimir Putin] is grounded in the fact that Obama and Putin have different properties. The plurality of facts [Obama is American], [Putin is not American] grounds the distinctness fact. Here is the PII-Proposal:

The PII-Proposal

Identity fact: $[a = b]$

The Grounds: $[(\forall F)(Fa \equiv Fb)]$

Distinctness fact: $[\sim a = b]$

The Grounds: $[Pa], [\sim Pb]$ ¹⁵

Unfortunately, the PII-Proposal inherits one of the major problems afflicting the PII when considered as a modal sufficient condition for object-identity. It seems possible for there to exist distinct objects sharing their qualitative features. The most popular potential counterexample to the PII derives from Max Black's (1952) case. We can imagine a world containing nothing but two qualitatively identical spheres located two miles from one another. We call one sphere "Castor" and the other "Pollux". It is difficult, according to the PII, to distinguish Castor from Pollux.

The Max Black scenario poses a problem for the PII-Proposal as well. Castor and Pollux are distinct, but the fact $[(\forall F)(F(\text{Castor}) \equiv F(\text{Pollux}))]$ plausibly obtains. Given a principle of grounding necessitation—which maintains that whenever one fact fully grounds another, then necessarily if the former obtains then the latter does as well—it should follow that the identity fact $[\text{Castor} = \text{Pollux}]$ obtains as well.¹⁶

Thus, the PII-Proposal inherits the problems the PII faces in other contexts. Unless we have a response to the Max Black scenario that saves the PII as a modal sufficient condition for identity, we cannot metaphysically ground identity and distinctness facts in the manner provided by the PII-Proposal.¹⁷

2. The Second Attempt: The Weak Discernibility Proposal

There is another proposal for identifying or distinguishing objects based on their qualitative properties, although, technically, this proposal concerns the qualitative *relations* objects stand in to one another rather than their *monadic* properties. This proposal appeals to the notion of "weak discernibility" or "discriminability" arising from Quine (1976) and defended by Saunders (2006). The Weak Discernibility Proposal maintains that objects x and y are distinct ("weakly discernible") when they stand in *irreflexive* relations to one another, and they are identical when they stand only in reflexive relations to one another. Irreflexive relations are ones like *taller than*, *earlier than*, *more massive than*, and so on. Reflexive relations are ones that objects stand in to themselves, like *the same height as*, *simultaneous with*, and *as massive as*.

While Saunders does not formulate The Weak Discernibility proposal in terms of grounding, we can do so here. According to one formulation of the proposal, identity facts of the form $[x = y]$ will be grounded in x and y 's standing in only *reflexive* relations to one another. When x and y are distinct, the distinctness fact

$[\sim x = y]$ will be grounded in the fact that x and y stand in an irreflexive relation to one another.¹⁸

This proposal can avoid the trouble with the Max Black world. Castor and Pollux stand in the *two miles from* relation to one another. The *two miles from relation* is presumably irreflexive since an object cannot be two miles from itself at a single point in time. Thus, the spheres are distinct on the Weak Discernibility Proposal.

There are some tricky issues concerning how to formulate the grounding conditions on the Weak Discernibility Proposal. Here is a first pass:

The Weak Discernibility Proposal

Identity fact: $[a = b]$

The Grounds: $[Pab]$, $[P \text{ is reflexive}]$, $[Lab]$, $[L \text{ is reflexive}]$, $[Mab]$, $[M \text{ is reflexive}]$...¹⁹

Distinctness fact: $[\sim a = b]$

The Grounds: $[Rab]$, $[R \text{ is irreflexive}]$

This proposal is potentially problematic depending on how we understand irreflexivity. If we think that the notion of irreflexivity presupposes the identity and distinctness of objects, then we face a threat of circularity. For instance, if we define the irreflexivity of a relation R as $(\forall x)(\forall y)(Rxy \supset \sim x = y)$, this approach will be circular. To see this, let's consider the fact $[\sim a = b]$. It will be grounded in facts of the form $[Mab]$, $(\forall x)(\forall y)(Mxy \supset \sim x = y)$. Since universal generalizations are grounded in their instances, $[Mab \supset \sim a = b]$ will partially ground this universal generalization. Moreover, since $[Mab \supset \sim a = b]$ is equivalent to and plausibly has the same grounds as $[\sim Mab \vee \sim a = b]$, and disjunctive facts are grounded in their disjuncts, $[\sim a = b]$ will partially ground $[(\forall x)(\forall y)(Mxy \supset \sim x = y)]$. $[(\forall x)(\forall y)(Mxy \supset \sim x = y)]$ along with $[Mab]$ in turn grounds $[\sim a = b]$. Thus, by transitivity, $[\sim a = b]$ grounds itself, and we violate irreflexivity.²⁰

However, the proponent of the Weak Discernibility Proposal is not forced into this circularity. One can define the irreflexivity of a relation in other ways.²¹ For instance, one can define the irreflexivity of M as $(\forall x)\sim Mxx$, in which case the fact that $[a \text{ is distinct from } b]$ is grounded in $([Mab], [(\forall x)\sim Mxx])$. While this formulation avoids the circularity above, it is odd that the proponent of this proposal is forced to define irreflexivity in this way. The two definitions of irreflexivity seem equally apt, and we should wonder whether there is sufficient reason to prefer the latter to the former.²²

There is another concern for the Weak Discernibility Proposal which arises from the possibility of distinct objects that do not stand in irreflexive relations to one another. Perhaps distinct objects can be co-located. If this is indeed metaphysically possible, then we can imagine a world like the Max Black world but where Castor

and Pollux are co-located. The Weak Discernibility Approach seems to lack the resources to distinguish the spheres in this case.²³

B. The Existential Approach

Burgess also explores the option of grounding identity and distinctness facts in existence facts. It is natural to think that once it is settled which objects exist, their identity and distinctness will be settled as well. Burgess quotes Daniel Nolan who in turn elaborates on David Lewis:

[W]e are happy to think facts about numerical identity supervenes [sic] on what objects there are. It is not as though you have to say what all the objects are, and *then* which objects are identical to which. Every object is identical to itself automatically. (qtd. in Burgess (2012), 90)

Burgess proceeds,

Imagine God creating a field of poppies. Once the flowers exist, there's no need for Her to survey the field and stipulate that this poppy will be identical to itself, and distinct from that poppy, that poppy, etc. Intuitively, the identity/distinctness facts come along for free; they seem to be nothing over and above the relevant existential facts. (2012, 90)

The natural thought is that identity and distinctness facts are grounded in existence facts. The fact $[a = a]$ is grounded in the fact $[a \text{ exists}]$. And the fact $[\sim a = c]$ is grounded in the plurality of facts $[a \text{ exists}], [c \text{ exists}]$.²⁴ The plausibility of this proposal rests on what form the existence facts take. Typically, existence facts will be formulated as existentially quantified facts involving the identity relation. We should understand $[a \text{ exists}]$ as $[(\exists x)(x=a)]$. But if existentially quantified facts are grounded in their instances, we cannot maintain that existentially quantified facts of the form $[(\exists x)(x = a)]$ ground identity facts. If $[a = a]$ is grounded in $[(\exists x)(x=a)]$, and $[(\exists x)(x=a)]$ is grounded in $[a=a]$, then $[a=a]$ grounds itself.²⁵

To avoid this worry, we can follow a suggestion Fine (2012, 59-60) makes in a similar context; we can appeal to an existence property, *exists* (E), instead of the existential quantifier.²⁶ For instance, an identity fact like $[a = a]$ will be grounded in the fact that a exists, which takes the form $[Ea]$, and $[\sim a=c]$ will be grounded in the plurality of facts $[Ea], [Ec]$. Here is the proposal:

The Existential Proposal

Identity fact: $[a = b]$

The Grounds: [Ea]

Distinctness fact: [$\sim a = b$]

The Grounds: [Ea], [Eb]

This proposal does not violate irreflexivity, but it does raise questions. First, are we warranted in positing a special existence property? Existence properties have been controversial.²⁷ And if we accept facts involving an existence property like [Ea] and [Eb], we will face a second question: what, if anything, grounds facts involving the existence property? A third set of questions concerns how facts involving the existential quantifier and the existence property interact. If we accept existence properties in addition to existential quantification, we now have facts of the form [Ea] and [$(\exists x)(x = a)$]. Do these facts stand in any grounding relations to one another? Are they grounded independently or do they share a common ground?²⁸ Since facts involving the existence property are much less familiar than facts involving existential quantification, these three sets of questions must be addressed in order to understand how the existence property fits into our account of fundamentality.

There is a concern with taking existence-property facts to ground identity facts (deriving from Burgess (2012, 91-92)). On the Existential Approach, distinctness facts, such as [$\sim a = c$], are grounded in a plurality of facts [Ea], [Ec]. But we may go on to ask: what grounds the distinctness of these two *facts*? Typically, we distinguish facts by distinguishing their constituents. And the constituents of facts are objects and properties. Since [Ea] and [Ec] involve the same property (existence), we must distinguish these facts by distinguishing their constituents, a and c. But we explained the distinctness of a and c by appealing to the plurality of facts [Ea] and [Ec]. This is not a strict grounding circularity since we did not ground the distinctness fact [$\sim a = c$] in the *distinctness of* [Ea] and [Ec]; we only grounded the distinctness fact in the plurality of the facts. Nevertheless, this grounding structure seems to forestall a satisfying explanation of the distinctness of the two facts.

C. The Zero-Grounding Approach

We have examined two approaches to grounding identity and distinctness facts: the Property Approach and the Existential Approach. Since each of the views has its concerns, one may suppose that identity and distinctness facts have no grounds after all. But a potential tension arises with taking identity and distinctness facts to be ungrounded. On the one hand, identity and distinctness facts, such as [The Eiffel Tower = The Eiffel Tower] and [\sim The Mona Lisa = The Eiffel tower] seem trivial; they do not seem deep or fundamental. But how are we to capture this triviality if such facts are ungrounded? Given that ungrounded facts are basic or fundamental, this pressures us to take identity facts to be fundamental—contrary to our assessment that identity facts are trivial and non-fundamental. So if we take identity

facts to be ungrounded, it seems we must reject that they are trivial in the sense of being metaphysically non-fundamental.

It is not clear that everyone would find this to be a genuine problem. As we will see in the next section, some philosophers *advocate* taking certain identity and distinctness facts to be fundamental. But if one is resistant to treating identity and distinctness facts as fundamental yet cannot find adequate facts to ground them, there is another option available. One idea proposed by Fine (2012, 47-48) involves the notion of “zero-grounding”. Here the idea is that facts are zero-grounded when they are not grounded by further facts, but also are not fundamental.

Fine illuminates the distinction as follows:

There is a...distinction to be drawn between being zero-grounded and ungrounded. In the one case, the truth in question simply disappears from the world, so to speak. What generates it... is its zero-ground. But in the case of an ungrounded truth...the truth is not even generated and simply stays in place...Indeed, the case of zero-grounding may be more than an exotic possibility. For suppose that one held the view that any necessary truth was ultimately to be grounded in contingent truths. Now, in the case of some necessary truths, it may be clear how they are to be grounded in contingent truths. It might be thought, for example, that the statement $A \vee \sim A$ was always to be grounded in either A or $\sim A$. But in other cases—as with Socrates being identical to Socrates or with Socrates belonging to singleton Socrates—it is not so clear what the contingent truths might be; and a plausible alternative is to suppose that they are somehow grounded in nothing at all.
(2012, 48)

While Donaldson (2016) and Litland (forthcoming) have engaged with zero-grounding, it has not yet seen widespread application in the grounding literature. But if we can motivate taking identity and distinctness facts as zero-grounded, this would relieve the tension above: such facts would not count as fundamental, and they would not be grounded in further facts.

There is another option for taking identity and distinctness facts to be neither fundamental nor grounded in further facts. This is to take identity and distinctness facts to belong to a “third realm” of facts: perhaps they are neither straightforwardly fundamental nor grounded.²⁹ Proponents of fundamentality sometimes acknowledge a third category of facts, facts that are not *apt* to be grounded. Shamik Dasgupta (2014b), (forthcoming), has offered such a picture in grounding contexts: he maintains that a fact is *autonomous* when it is not apt to be grounded. Dasgupta proposes that essence facts, facts like “It is essential to x that φ ” are good candidates for autonomous facts. One may try to extend this picture to account for identity and distinctness facts like the ones above as well.³⁰ For those inclined to deny both that identity and distinctness facts are fundamental and that they are grounded in

further facts, there are now two options to explore: that of taking identity facts to be zero-grounded and taking such facts to be autonomous, or not apt to be grounded in the first place.

IV. Identity and Distinctness Facts are Fundamental

Some philosophers do not find fundamental identity and distinctness facts to be problematic. We will examine two such views here, put forth by Ted Sider (2011) and Shamik Dasgupta (2009).

In *Writing the Book of the World*, Ted Sider offers a picture of fundamentality that differs from the one above. Sider does not identify fundamental facts with ungrounded facts. Instead, he maintains that fundamental facts are ones written “in purely joint-carving terms.” Influenced by David Lewis’ (1983) view of naturalness, Sider takes joint-carving terms to include perfectly natural predicates.³¹ According to Lewis, natural properties (here, predicates) are ones that are supposed to be intrinsic, highly specific, make for causal powers, and so on. Good candidates for joint-carving predicates include those found in our best physical theories.

Sider extends this notion of joint-carvingness beyond predicates. He maintains that primitive, joint-carving notions include those of “first-order quantification theory (with identity), plus a predicate symbol \in for set-membership, plus predicates adequate for fundamental physics, plus the notion of structure” (2011, 292-3). Sider takes facts to be fundamental when they involve purely joint-carving notions. Fundamental facts for Sider will include ones like $[(\exists x)Px]$, $[(\exists x)(Px \vee Qx)]$, etc. where P and Q are joint-carving predicates, and \exists is a joint-carving existential quantifier.

Taking certain disjunctive, conjunctive, and quantified facts to be fundamental highlights an important way in which Sider’s picture of fundamentality differs from the grounding-based approach under discussion. The grounding theorist typically takes such facts to be non-fundamental since they are grounded in their instances, disjuncts, and conjuncts, respectively. Sider, on the other hand, counts such facts as fundamental as long as they are written purely in joint-carving terms.³²

Since the notions of first-order quantification theory with identity are joint-carving, this implies that the identity predicate is joint-carving. And because facts involving only joint-carving notions will themselves be joint-carving or fundamental, facts of the form $[(\exists x)(\exists y)(x = y)]$, $[(\exists x)(\exists y)((Px \ \& \ Qy) \ \& \ (\sim x = y))]$ will count as fundamental (where P and Q are joint-carving predicates and \exists is the joint-carving quantifier).³³

As stated above, this picture of fundamentality differs from the grounding theorist's picture. The classic grounding theorist typically wants to ground facts with greater logical complexity in ones with less logical complexity. Conjunctive facts are grounded in their conjuncts; existential facts will be grounded in their instances, etc. Sider's framework does not dissect complex facts in this way. For Sider, logically complex truths can be fundamental.

If we want to explain the more logically complex in terms of the less logically complex, we may favor the grounding framework. We should ask, if we take more logically complex facts to be explained by less logically complex ones, does this speak in favor of taking identity facts to be non-fundamental as well? If we treat the identity predicate as fundamental solely because we treat all the notions of first-order classical quantificational logic with identity as fundamental, then insofar as we want to deny that conjunctive, disjunctive, or quantificational facts are fundamental, we may feel the same about identity facts.

Shamik Dasgupta (2009) also accepts fundamental identity and distinctness facts, but his route to positing these facts is more radical. Dasgupta rejects that objects or individuals exist "fundamentally speaking".³⁴ In other words, he denies that there are fundamental facts of the form $[Pa]$, $[Rab]$, or $[a = b]$. Dasgupta denies that individuals fundamentally exist because he takes them to be ontological "danglers". Dasgupta's argument is similar to certain ones found in the philosophy of physics: he believes that just as absolute velocity is an extraneous posit in our physical theories, individuals are extraneous posits as well. Like absolute velocity, individuals are also "physically redundant" and "empirically undetectable." (2009, 36)

To avoid these danglers, Dasgupta argues for a position he calls "Generalism". According to Generalism, we have fundamental facts "constructed out of properties." The Generalist claims that rather than facts involving individuals, better candidates for fundamental facts are quantified ones like $[(\exists x)Px]$ and $[(\exists x)(\exists y)Rxy]$.³⁵ These facts are not grounded in witnessing instances. For Dasgupta, fundamental facts will sometimes involve the identity relation. For instance, in the Max Black scenario, there will be a fundamental fact of the form $[(\exists x)(\exists y)((Fx \& Fy) \& (\sim x = y))]$ where F is a property that provides a full qualitative description of x and y .³⁶

To see why and how certain identity and distinctness facts count as fundamental on this view, we must first contrast Generalism with another metaphysical picture that denies the existence of individuals, that of bundle theory. The bundle theorist maintains that individuals do not exist as a fundamental ontological category. Instead there are just properties (which the bundle theorist takes to be universals) and bundles of properties. Bundles of properties are those that are "compresent", where compresence is often left as a primitive notion.³⁷

Dasgupta thinks the bundle theorist runs into trouble because she is committed to a version of the Principle of the Identity of Indiscernibles. Bundle theorists maintain that there are properties and a bundling relation constructing individuals out of them.³⁸ If bundles are nothing over and above properties, it follows that when bundles contain all and only the same properties, they will be identical. Since the identity of indiscernibles maintains that objects (here bundles) are identical if they share all and only the same properties, the bundle Theorist is committed to the PII.

Given the bundle theorist's commitment to the PII, she has trouble accounting for the distinctness of bundles in Max Black style worlds, worlds in which we intuitively want to claim that we have two bundles of the same qualitative properties. In this case, the bundle theorist is pressured to claim that there is only a single bundle, and thus a single sphere.³⁹

Unlike the bundle theory, Dasgupta's Generalism is not committed to the PII as a modal sufficient condition. Dasgupta maintains that we should not try to characterize individuals out of bundles. We should directly construct general facts out of properties and relations. Dasgupta calls his position, "radically holistic" (2009, 55), maintaining that we should characterize the whole world at once. This is why the fundamental fact of the Max Black world is as follows:

MB: $[(\exists x)(\exists y)((Fx \ \& \ Fy) \ \& \ (\sim x = y))]$

Here there are no fundamental facts solely concerning the properties that make up a single sphere. Instead, Dasgupta posits a general fact involving properties that depict both spheres at once. And this fact will not be grounded in its witnessing instances. This leaves us with an exciting theory: Even though Dasgupta does not accept that individuals fundamentally exist, he countenances fundamental facts involving the identity relation.

The following are some questions facing the Generalist. First, can the Generalist say anything more about the PII and why she should reject it? The Generalist rejects the PII when she posits a fundamental fact like MB, but it would be helpful to hear more about why the PII should fail. After all, Max Black worlds have vexed not just bundle theorists. Philosophers who posit an individuals-based ontology have also faced trouble in light of the PII seemingly because there is a clash of intuitions: the PII looks plausible on its face, but the Max Black scenario is a possible violation of the PII. The Generalist must claim that though the PII is initially compelling to metaphysicians who posit individuals and is a requirement of the bundle theory, the Generalist can straightforwardly reject it in light of the Max Black scenario.

This leads us to a second question. If the PII does not hold under Generalism, is there anything we can put in its place? To clarify, the Generalist denies that there are facts grounding certain identity facts. But what about modal sufficient conditions for identity? Will the Generalist deny that there are modal sufficient conditions for identity and distinctness as well?

In other scenarios, the Generalist will probably admit that there are modal sufficient conditions for identity and distinctness. For instance, here is a plausible sufficient condition for set-identity: according to the axiom of extensionality in ZFC set theory, if sets have all and only the same members, they are identical. Additionally, in the event literature, when events are considered to be complexes of objects, properties, and times, it is plausible to take events that share all and only the same objects, properties and times to be identical (see Kim (1976)). Even if the Generalist rejects that sets and events exist “fundamentally speaking”, presumably she would want to maintain that facts of the form “if sets x and y share all their members, then $x = y$ ” and “if events x and y share all their constituents, $x = y$ ”.

Perhaps the Generalist will accept these sufficient conditions for set and event identity if (and because) there are no problematic counterexamples to them. Since in the case of the PII, there are problematic counterexamples (e.g. the Max Black world), this explains why the Generalist rejects the PII as a sufficient condition for identity. The question now is whether there are *any* sufficient conditions for identity and distinctness that obtain for what we would intuitively call, “objects”. In other words, are there any sufficient conditions for identity and distinctness that the Generalist can fill in to the following?

$(\forall x)(\forall y)(\text{_____ then } x = y)$
 $(\forall x)(\forall y)(\text{_____ then } \sim x = y)$

If not, can we pinpoint what is special about this case such that the Generalist avoids positing sufficient conditions for identity and distinctness in the case of what we intuitively take to be objects but not elsewhere, like in the cases of set and event identity?

V. Conclusion

We have now examined views that take identity and distinctness facts to be non-fundamental as well as ones that take them to be fundamental. There is a lot of room for development in an analysis of identity and distinctness facts. One set of issues that has repeatedly arisen in this paper—but which we have not discussed thoroughly—is the relationship between modal criteria for identity (such as necessary and sufficient conditions for identity) and the fundamentality status of identity and distinctness facts.⁴⁰ Hopefully, an account of the fundamentality or non-fundamentality of identity and distinctness facts can help shed light on whether there are necessary and sufficient conditions for identity and distinctness and the form these conditions will take.

Notes

¹ See Burgess (2012), Dasgupta (2009), Fine (2012, 2016), and Sider, (2011) for discussions of identity and fundamentality. Burgess (2012) and Fine (2016) do take identity as a central focus.

² In this paper, I discuss a grounding-based characterization of fundamentality as well as one based on the notion of joint-carvingness. While metaphysicians employ different conceptions of fundamentality, it is unclear whether there is supposed to be a single intuitive notion of fundamentality that they are trying to characterize, or—rather—whether their particular conceptions of fundamentality are distinct and bear at most some superficial resemblance to one another. While I suspect that there is an intuitive notion of “fundamentality”, it is difficult to determine a common set of features these accounts are trying to capture. Nevertheless, perhaps these accounts of fundamentality are united in some of their applications. For instance, the characterizations of fundamentality discussed below can capture the distinction between facts involving grue-like properties and ones involving physical properties. They also are both able to pinpoint which facts are supposed to be “ontologically independent” or “primitive”.

³ Facts, for our purposes, are worldly entities comprised of objects (like cows or electrons) together with properties and relations (like *being spotted* or *less massive than*). Not all metaphysicians of fundamentality discuss facts of this sort. Some metaphysicians (see Fine (2012) and Dasgupta (2014a)) instead discuss whether certain *sentences* involving identity and distinctness are fundamental. I will mention in sections III-IV where philosophers will invoke sentences instead of facts in their accounts, but I will keep using fact terminology throughout this paper for ease of presentation.

⁴ They can also include various modal and tense operators, though we will not be discussing such facts here.

⁵ For introductions to grounding, see Koslicki (2013), Raven (2015) and Trogdon (2013). For characterizations of grounding, see Fine (2001, 2012), Rosen (2010), and Schaffer (2009). Some philosophers doubt the usefulness of grounding while retaining the notion of fundamentality (See Sider (2011), Wilson (2014), and Koslicki (2015) for example). Others accept both fundamentality and grounding as useful notions but will want to deny that every ungrounded fact is fundamental (See Fine’s (2001) discussion of ground and reality).

⁶ See Fine (2001), Sider (2011), and Wilson (2014) for views that do not define fundamental as ungrounded. We will explore Sider’s view in section IV.

⁷ Facts are offset with brackets []; properties and relations are signaled with capital letters. Variables (written as x, y) are supposed to range over concrete objects (with one exception in section IV) while constants (written as $a, b...$) pick out particular concrete objects. I will take grounding to be factive in that if $[\varphi]$ grounds $[\psi]$ then both $[\varphi]$ and $[\psi]$ obtain, though this assumption is not crucial here.

⁸ For instance, see Rosen (2010) Section 8 for a discussion of the grounds of universal facts.

⁹ There is another option in which identity and distinctness facts are neither fundamental nor explained by facts that do not involve identity. In this scenario, identity facts are further explained by other identity facts, which are in turn explained by further identity facts forever. For instance, if identity facts involving wholes are grounded in identity facts involving their parts, and objects have smaller and smaller parts but no smallest parts, we may get the following kind of scenario: [table $t = \text{table } t$] is grounded in the plurality of facts [table leg $l = \text{table leg } l$], table base $b = \text{table base } b$]. And the identity fact [table leg $l = \text{table leg } l$] may be grounded in the facts [table half-leg $h = \text{table half leg } h$], [table half leg $j = \text{table half leg } j$], which in turn are grounded in identity facts involving their parts, and so on with no stopping point. Here, identity facts are non-fundamental, but always grounded in further identity facts. This is not the kind of scenario we are interested in here. We want to determine whether identity and distinctness facts are ever grounded in facts not involving the identity relation.

¹⁰ In this paper, I treat identity and distinctness facts as a package: the following views are ones on which (at least some) identity and distinctness facts are either both taken to be fundamental, or they are both taken to be non-fundamental and grounded in complementary ways. One alternative that is worthy of consideration (but will not be discussed) is that we should treat the fundamentality status of identity and distinctness facts separately. Perhaps one could defend a view on which identity facts are fundamental but distinctness facts are not. This may be plausible if one takes identity facts to be grounded but denies that any “negative” facts have grounds. Since many distinctness facts take the form of negations, they may be candidates for ungrounded negative facts. Thanks to [REDACTED] for discussion here.

¹¹ Although, Fine takes grounding to be a sentential operator instead of a relation holding between facts.

¹² Burgess (2012, 92-93, 95-96) considers two other proposals, which he takes to be problematic: one in terms of parthood and one in terms of set-membership. He considers whether $[x = y]$ can be grounded in the fact $[x \text{ is part of } y \text{ and } y \text{ is part of } x]$. Burgess also examines whether the fact $[x = y]$ can be grounded in the fact that x and y are members of the same sets, $[\forall S : A \in S \text{ iff } B \in S]$. There is no room to discuss these proposals here, but they are interesting alternatives.

¹³ Leibniz (2007), Section 9.

¹⁴ See Black (1952) and Adams (1979), for example. Some philosophers, notably Della Rocca (2005), consider whether Leibniz himself thought the PII constituted a metaphysical explanation of object identity and distinctness. Also, French and Krause (2006) and Hawley (2009) use the locution “ground” when discussing the PII, but it is not clear whether they want to pick out the same grounding relation we are discussing here.

¹⁵ See Burgess (2012, 94) for an alternative formulation of this proposal.

¹⁶ Some philosophers (see Skiles (2015)) will deny that a grounding necessitation principle holds. While this would block forcing us to identify the Max Black spheres, we would still lack an explanation for the distinctness of Castor and Pollux.

¹⁷ This is not to say we cannot find a response (see O’Leary-Hawthorne (1995) and Della Rocca (2005), for example). Nevertheless, the PII-Proposal is at best controversial given the controversial status of PII as a sufficient condition for object-identity.

¹⁸ In addition to binary relations, we can extend the proposal to account for relations of different arities.

¹⁹ We may also want to include a totality fact, like $[\forall R(Rxy \supset R \text{ is reflexive})]$ in the grounds.

²⁰ This is one way of spelling out French and Krause’s (2006) concern about the Weak Discernibility Proposal. They state (qtd. in Hawley (2009), 109): “There is the worry that the appeal to irreflexive relations in order to ground the individuality of the objects which bear such relations involves a circularity: in order to appeal to such relations, one has to already individuate the particles which are so related and the numerical diversity of the particles has been presupposed by the relation which hence cannot account for it.”

²¹ Thanks to [redacted] and [redacted] for discussion.

²² Another alternative is that the proponent of the Weak Discernibility approach can maintain that an identity fact like $[a=b]$ is just grounded in the facts $[Pab]$, $[Qab]$, $[Rab]$, along with a totality fact maintaining that these are the only relations a and b stand in to one another. Here no facts of the form $[P \text{ is reflexive}]$, $[Q \text{ is reflexive}]$, $[R \text{ is reflexive}]$, and so on enter into the grounds of $[a=b]$. Likewise, when a and b are distinct, perhaps the fact $[\sim a=b]$ is grounded in a fact of the form $[Sab]$ where S is an irreflexive relation, but the fact $[S \text{ is irreflexive}]$ is not part of the grounds of $[\sim a=b]$. The question now arises of *how* the reflexivity/irreflexivity of the relations enters into the grounding explanations in these cases if not as part of the grounds.

Presumably the fact that the relations in question are irreflexive/reflexive enters into the explanation of identity and distinctness at some point. One option is that the fact [S is irreflexive] grounds the grounding fact [[Sxy] grounds [$\sim a=b$]]. This is an interesting alternative, and it would require that we take a stand on how to ground grounding facts (see Bennett (2011), deRosset (2013), and Dasgupta (2014b) for discussions of grounding grounding facts). Like with the first formulation of the Weak Discernibility Approach, we should revisit how to define irreflexivity on this formulation as well.

²³ French (1989) raises a case of this form involving co-located bosons. See Muller and Saunders (2008), among others, for discussion.

²⁴ If there are identity facts involving nonexistent entities, such as [Santa Claus = Santa Claus], they will need special treatment.

²⁵ Fine (2012, 59-60) points out closely related circularity threats involving identity and existential quantification.

²⁶ Again, Fine does not maintain that facts ground other facts. He is a proponent of sentential grounding, where grounding is taken to be a sentential operator.

²⁷ For instance, Frege (1980) and Russell (1972) denied that existence is a property of individuals when accounting for negative existentials. Furthermore, some philosophers have denied that existence is a property in discussions of the ontological argument for the existence of God. For some discussion of existence properties and the ontological argument, see McDaniel (2013) and Salmon (1987).

²⁸ Fine (2012, 60) entertains a modification to the dictum that existentially quantified facts are grounded fully in their instances. He suggests that existentially quantified facts (like [$\exists x(x = a)$]) are partially grounded in their instances along with a fact involving the existence property [Ea]. This makes sense, Fine thinks, as it solves another problem for the grounding theorist. Presumably facts that are instances of the law of excluded middle hold necessarily. For instance: Albert is in the Bahamas or it is not the case that Albert is in the Bahamas [$Ba \vee \sim Ba$]. However, if grounding necessitation holds, then this fact grounds [$\exists x(Bx \vee \sim Bx)$] in every possible world. But it is more controversial that something necessarily exists. Were [$Ba \vee \sim Ba$] only to partly but not fully ground [$\exists x(Bx \vee \sim Bx)$], then this result would be blocked. [$Ba \vee \sim Ba$] would only necessitate [$\exists x(Bx \vee \sim Bx)$] together with the fact that a exists, [Ea], which does not hold necessarily.

²⁹ Thanks to an anonymous reviewer here.

³⁰ Dasgupta (2014b) entertains extending this picture to certain kinds of identity facts. He states, “there are autonomous facts, which are not apt for being grounded in the first place. There may be no uncontroversial examples of these either, but

essentialist facts are reasonable candidates. Other candidates include conceptual truths and identities—indeed, David Papineau has argued that it does not make sense to ask why an identity holds—though in both cases it might be argued that they are varieties of essentialist truths. But there is no need to determine the extent of the class of autonomous truths here.” (579)

³¹ Sider does not believe that there are abstract properties and relations; accordingly, in discussing his views, I will use “predicate” in place of “property”.

³² Sider rejects grounding in his account of fundamentality. See Chapter 8 of *Writing the Book of the World* for his criticisms of grounding.

³³ For Sider, these quantifiers will range over spacetime points, which he maintains belong to the ontology of our fundamental theories.

³⁴ While Dasgupta embraces grounding in other papers (see (2014a) and (2014b), for instance), it is not clear whether he has a grounding-based account of fundamentality in mind in this paper. Plausibly, we can think of this view as a good candidate for one that treats certain identity and distinctness facts as fundamental in the sense of ungrounded.

³⁵ Ultimately, Dasgupta prefers to do away with existential quantifiers in fundamental facts since they give the impression of quantifying over individuals. Instead, he prefers to translate sentences involving individuals and quantifiers into ones using predicate and term functors instead following Quine (1971). Sentences of “functorese” depicting fundamental facts will still involve identity predicates referring to an identity relation. For discussion of functorese, see Quine (1971), Dasgupta (2009), Turner (2011) and Donaldson (2015).

³⁶ Here F will pick out a property like *is metal, has a mass of 1kg*. Perhaps in order to be perfectly fundamental, F should pick out the properties of our ultimate physical theory.

³⁷ For discussion of bundle theory, see Russell (2013), Van Cleve (1985), Paul (2002, forthcoming), Hawthorne (1995), and Sider and Hawthorne (2002).

³⁸ Working out the details of various versions of bundle theory would take us too far afield here. But we should note that the bundle theorist must determine which universals can bundle together: monadic properties or polyadic relations as well? [Redacted] has pressed this issue in conversation. For a bundle theorist who takes this up, see Paul (2012).

³⁹ Some philosophers believe they can diffuse this objection to the bundle theory (see O’Leary Hawthorne (1995) and Hawthorne and Sider (2002) for discussion). Dasgupta does not argue that the bundle theorist’s potential solutions fail; instead, he maintains that the Generalist avoids the difficulties of this scenario in the first place because the Generalist is not pressured to accept the PII.

⁴⁰ Fine (2016) explicitly discusses the connection between modal and grounding criteria of identity criteria. While Fine does not advocate for any specific account of the grounds for identity facts, he focuses on a new way of thinking about identity criteria. Fine argues that we should formulate grounding-based identity criteria by appeal to special kinds of objects called “arbitrary objects”.

Works Cited

- Adams, Robert Merrihew. "Primitive Thisness and Primitive Identity." *Journal of Philosophy* 76.1 (1979): 5-26. Print.
- Bennett, Karen. "By Our Bootstraps." *Philosophical Perspectives*. 25 (1) (2011):27-41. Print
- Black, Max. "The Identity of Indiscernibles." *Mind* 61.242 (1952): 153-64. Print.
- Burgess, Alexis. "A Puzzle About Identity." *Thought: A Journal of Philosophy* 1.2 (2012): 90-99. Print.
- Dasgupta, Shamik. "Individuals: An Essay in Revisionary Metaphysics." *Philosophical Studies* 145.1 (2009): 35 - 67. Print.
- . "On the Plurality of Grounds." *Philosophers' Imprint* 14.20 (2014a). Print.
- ."The Possibility of Physicalism." (2014b) *The Journal of Philosophy* 111.9 (2014): 557-592. Print
- ."Metaphysical Rationalism." *Noûs* (forthcoming)
- Della Rocca, Michael. "Two Spheres, Twenty Spheres, and the Identity of Indiscernibles." *Pacific Philosophical Quarterly* 86.4 (2005): 480–92. Print.
- deRossett, Louis. "Grounding Explanations." *Philosophers Imprint*. (2013)13 (7).
- Donaldson, Thomas. "The Foundations of Arithmetic?" *Noûs* 50.2 (2016). Print.

-
- . "Reading the Book of the World." *Philosophical Studies* 172.4 (2015): 1051-77. Print.
- Fine, Kit. "Guide to Ground." *Metaphysical Grounding*. Eds. Correia, Fabrice and Benjamin Schnieder: Cambridge University Press, 2012. 37--80. Print.
- . "Identity Criteria and Ground." *Philosophical Studies* 173.1 (2016): 1-19. Print.
- . "The Question of Realism." *Philosophers' Imprint* 1.1 (2001): 1-30. Print.
- French, Steven. "Identity and Individuality in Classical and Quantum Physics." *Australasian Journal of Philosophy* 67.4 (1989): 432 - 46. Print.
- . *Identity in Physics: A Historical, Philosophical, and Formal Analysis*. Oxford University Press, 2006. Print.
- Hawley, Katherine. "Identity and Indiscernibility." *Mind* 118.469 (2009): 101 - 19. Print.
- Hawthorne, John, and Theodore Sider. "Locations." *Philosophical Topics* 30.1 (2002): 53-76. Print.
- Jenkins, C. S. "Is Metaphysical Dependence Irreflexive?" *The Monist* 94.2 (2011): 267-76. Print.
- Kim, Jaegwon. "Events as Property Exemplifications." *Action Theory*. Eds. Brand, M. and D. Walton: D. Reidel, 1976. 310-26. Print.
- Koslicki, Kathrin. "Ontological Dependence: An Opinionated Survey." *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence (Basic Philosophical Concepts)*. Eds. Schnieder, Benjamin, Miguel Hoeltje and Alex Steinberg: Philosophia Verlag, 2013. 31-64. Print.
- Leibniz, Gottfried Wilhelm. *Discourse on Metaphysics*. Eds. Martinich, Aloysius, Fritz Allhoff and Anand Vaidya: Blackwell Pub., 2007. 81-84. Print.
- Lewis, David. "New Work for a Theory of Universals." *Australasian Journal of Philosophy* 61.December (1983): 343-77. Print.
- Litland, Jon. "Grounding Ground." *Oxford Studies in Metaphysics* (Forthcoming). Print.
- McDaniel, Kris. "Existence and Number." *Analytic Philosophy* 54.2 (2013): 209-28. Print.

-
- Muller, F. A., and Simon Saunders. "Discerning Fermions." *British Journal for the Philosophy of Science* 59.3 (2008): 499-548. Print.
- O'Leary-Hawthorne, John. "The Bundle Theory of Substance and the Identity of Indiscernibles." *Analysis* 55.3 (1995): 191 - 96. Print.
- Paul, L. A. "Building the World from Its Fundamental Constituents." *Philosophical Studies* 158.2 (2012): 221-56. Print.
- . "Logical Parts." *Noûs* 36.4 (2002): 578-96. Print.
- . "Mereological Bundle Theory." *Handbook of Mereology*. Eds. Burkhardt, Hans, Johanna Seibt and Guido Imaguire: Philosophia Verlag. Print.
- Quine, W. V. *Algebraic Logic and Predicate Functors*. [Indianapolis, Bobbs-Merrill, 1971. Print.
- . "Grades of Discriminability." *Journal of Philosophy* 73.5 (1976): 113-16. Print.
- Raven, Michael J. "Ground." *Philosophy Compass* 10.5 (2015): 322-33. Print.
- . "Is Ground a Strict Partial Order?" *American Philosophical Quarterly* 50.2 (2013): 191-99. Print.
- Rosen, Gideon. "Metaphysical Dependence." *Modality: Metaphysics, Logic, and Epistemology*. Eds. Bob Hale & Aviv Hoffmann. Oxford University Press, (2010). 109--36 . Print
- Russell, Bertrand. *The Foundations of Arithmetic: A Logico-Mathematical Enquiry into the Concept of Number*. Northwestern University Press, 1980. Print.
- . *An Inquiry into Meaning and Truth*. Vol. 51: Routledge, 2013. Print.
- . *Logical Atomism*. London, Fontana, 1972. Print.
- Salmon, Nathan. "Existence." *Philosophical Perspectives* 1.n/a (1987): 49-108. Print.
- Saunders, Simon. "Are Quantum Particles Objects?" *Analysis* 66.289 (2006): 52-63. Print.
- Sider, Theodore. *Writing the Book of the World*. Oxford University Press, 2011. Print.
- Skiles, Alexander. "Against Grounding Necessitarianism." *Erkenntnis* 80.4 (2015): 717-51. Print.

Trogon, Kelly. "An Introduction to Grounding." *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence (Basic Philosophical Concepts)*. Eds. Hoeltje, Miguel, Benjamin Schnieder and Alex Steinberg: Philosophia Verlag, 2013. 97-122. Print.

Turner, Jason. "Ontological Nihilism." *Oxford Studies in Metaphysics*. Eds. Bennett, Karen and Dean W. Zimmerman: Oxford University Press, 2011. 3-54. Print.

Wilson, Jessica M. "No Work for a Theory of Grounding." *Inquiry* 57.5-6 (2014): 535-79. Print.