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Essentialist explanation

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Abstract Recent years have seen an explosion of interest in metaphysical explanation, and philosophers have fixed on the notion of ground as the conceptual tool with which such explanation should be investigated. I will argue that this focus on ground is myopic and that some metaphysical explanations that involve the essences of things cannot be understood in terms of ground. Such 'essentialist' explanation is of interest, not only for its ubiquity in philosophy, but for its being in a sense an ultimate form of explanation. I give an account of the sense in which such explanation is ultimate and support it by defending what I call the *inessentiality of essence*. I close by suggesting that this principle is the key to understanding why essentialist explanations can seem so satisfying.

Keywords Essence · Explanation · Ground · Ultimacy

Consider water. Why does it contain hydrogen? There are doubtless many ways to answer this question, but one permissible answer is this: water by its very *nature* contains hydrogen. Or consider Socrates' singleton set. Why does this set have Socrates as a member? It has Socrates as a member by its very nature. Let us call such explanations *essentialist explanations.*

Although essentialist explanation itself has rarely been the subject of philosophical inquiry, such explanations are ubiquitous in philosophy. For example, we can explain why what is known must be true by saying that the nature of knowledge is such that what is known must be true. Or again, a functionalist about the mind may think that we can explain why pain plays a certain causal role by saying that pain plays this role by its very nature. Again, a defender of Rawls's (1958) view of

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justice may think we can explain why a just society will eliminate certain inequalities by saying that the nature of justice is such that a just society will eliminate these inequalities.

Despite their ubiquity, there is something puzzling about explanations like these. Suppose we ask, 'Why does singleton Socrates have Socrates as a member?' One immediately wants to end the discussion by insisting, 'It just does—that is just what the set is!' This reaction might be taken to motivate the position that this question is in some way illegitimate, or that the answer given in the first paragraph is not to be taken seriously. However, I will take a different approach. I will begin from the presumption that here, no less than anywhere else, it is legitimate to ask why something is the case. And if the question is legitimate, then why should we not take seriously an answer we are inclined to give?

All the same, I do think there is something puzzling about essentialist explanation. Suppose one answers the question of why singleton Socrates has Socrates as a member by saying that the set has Socrates as a member by its very nature. One then has the sense that this is 'the end of the explanatory road'. It is this sense, I believe, that prompts the reaction, 'That is just what the set is!' I will call this the *ultimacy* of essentialist explanation. Of course, that only gives the puzzle a name. It remains unclear what this ultimacy amounts to.

The aim of this paper is to clarify the notion of essentialist explanation and the sense in which such explanation is ultimate. I begin by characterizing essentialist explanation and distinguishing it from some related kinds of explanation (Sect. 1). There has recently been some interest in the proposal that essentialist explanation should be understood in terms of the notion of ground; I argue against this proposal (Sect. 2). I then turn to the ultimacy of essentialist explanation. I give an account of this ultimacy (Sect. 3). Not only is this account natural, it is supported by an independently plausible principle that I call the *inessentiality of essence* (Sect. 4). I close by suggesting that the inessentiality of essence is the key to understanding one of the main virtues of essentialist explanation (Sect. 5).

1 Characterizing essentialist explanation

In an essentialist explanation, we explain the fact that A in terms of the fact that a certain thing is by its very nature such that A (or, as I will often say, is essentially such that A).[1,2] Thus we may explain the fact that water contains hydrogen in terms of the fact that water is by its very nature such that it contains hydrogen (or is essentially such that it contains hydrogen). We may think of the claim that a thing is

[1] I will use these essentialist locutions (and obvious variations on them) interchangeably. Nothing will turn on any differences in logical form between such locutions.

[2] I will take facts (and propositions) to be structured entities (à la Russell) built up from worldly constituents like objects, properties, operations and so on. The fact that A will therefore be distinct from the fact that t is essentially such that A.

essentially a certain way as a partial statement of what the thing is 'at its core'.[3] Thus part of what water is at its core, for example, is a compound containing hydrogen. I take it that whenever something is essentially such that *A*, the fact that *A* will admit of essentialist explanation. Let us say that an *essentialist fact* is a fact of the form '*t* is by its nature such that *A*' (or of the form '*t* is essentially such that *A*'). Not every explanation which appeals to an essentialist fact is an essentialist explanation in our sense. For even if an explanation appeals to an essentialist fact, it will not be an essentialist explanation if it is not of the form '*A* because *t* is essentially such that *A*'. It is important to distinguish these from essentialist explanations since they do not in general share such explanations' ultimacy.

For an example of an explanation which appeals to an essentialist fact but which is not an essentialist explanation, consider the fact that a certain parking lot is square in shape. One might think we can explain this fact by saying that the lot is equilaterally rectangular and that it is in the nature of being square that whatever is equilaterally rectangular is also square. This explanation appeals to an essentialist fact but is not of the proper form to be an essentialist explanation.[4]

Nor should we think that any explanation which appeals *only* to an essentialist fact will be an essentialist explanation. Consider, for instance, the disjunctive fact that either snow is green or 3 is essentially a number. One might think that this fact can be explained solely by appeal to the fact that 3 is essentially a number. But even if this is so, the explanation is not of the proper form to be an essentialist explanation.

We should also distinguish essentialist explanations from 'hybrid' explanations, obtainable by chaining an essentialist explanation with an explanation of some other kind. Consider, for example, the fact that saltpeter dissolves in water. One might think this fact can be explained by saying that nitrate salts dissolve in water and that saltpeter is by its very nature a nitrate salt. This explanation is again not of the proper form to be an essentialist explanation. But it may be regarded as a hybrid explanation, obtainable by chaining an essentialist explanation with a causal explanation in the following way. We first give a causal explanation of the fact that saltpeter dissolves in water by saying that it is a nitrate salt and that such salts dissolve in water. We then give an essentialist explanation of the fact that saltpeter is a nitrate salt by saying that it is so by its very nature.

2 Essentialist explanation and ground

Faced with the phenomenon of essentialist explanation, it is natural to want to see it as a species of some other kind of explanation. But I will argue that this cannot be done.

[3] Fine (1995b) distinguishes a number of notions of essence. In this paper I have in mind something very close to Fine's notion of immediate constitutive essence, though I am not sure he thinks of such essence as what something is at its core. For further discussion of essence see Fine (1994), Correia (2006) and Koslicki (2011), among others.

[4] I leave aside the question of how such explanations should be understood, though see Kment (2014) for discussion.

Essentialist explanation is clearly not a species of causal explanation. Causal explanation, after all, proceeds by identifying causes. But water's containing hydrogen, for instance, is not caused by its essentially containing hydrogen.

Might essentialist explanation instead be a species of grounding explanation? There has recently been some interest in this proposal.[5] In a grounding explanation, we explain a fact by saying what grounds it.[6,7] Thus we might explain why a given thing is red by saying that it is crimson. Or we might explain why it is rainy or windy by saying that it is rainy. Or again, we might explain why it is true that snow is white by saying that snow is white. According to this proposal, an essentialist explanation is just a grounding explanation whose explanandum is of the form '*A*' and whose explanans is of the form '*t* is essentially such that *A*'. Thus water's containing hydrogen will be explained by its essentially containing hydrogen in much the same way that a given thing's being red is explained by its being crimson.

The philosophers who have been interested in this proposal have not given sustained arguments for it. Their thinking has seemed to be that since '*t* is essentially such that *A*' provides a metaphysical kind of explanation of *A* and since grounding explanation is the only metaphysical kind of explanation, this explanation must be a grounding explanation. Although the notion of a metaphysical kind of explanation is not perfectly clear, the intuitive idea is that a metaphysical kind of explanation is one that pertains to the distinctive concerns of metaphysics. The exact characterization of this notion need not detain us since our appeals to it will be uncontroversial enough. Grounding explanation, for instance, will be a metaphysical kind of explanation, while causal explanation will not be.

It can hardly be denied that '*t* is essentially such that *A*' provides a metaphysical kind of explanation of *A*. But metaphysicians' recent enthusiasm over ground notwithstanding, it is not clear that grounding explanation is the only metaphysical kind of explanation. Certainly this should not simply be assumed without argument. I therefore do not think these philosophers have established that essentialist explanation is a species of grounding explanation.[8]

Indeed, even before considering detailed arguments against this proposal we can see that it is open to significant doubt. For it is not at all clear that the fact that water

[5] Rosen (2010) flirts with the proposal, Dasgupta (2016, 390–391) apparently presupposes it and Kment (2014) endorses it(though he uses 'metaphysical explanation' to mean what we mean by 'grounding explanation').

[6] For discussion of ground and grounding explanation, see Fine (2001, 2012a), Schaffer (2009) and Rosen (2010), among others. The proposal (as well as the grounding account of ultimacy rejected in Sect. 3) presupposes a unified notion of ground. This presupposition has been challenged by Wilson (2014) and Koslicki (2015); so much the worse for the proposal if they are right.

[7] Philosophers have distinguished notions of full and partial grounding explanation. Since an essentialist explanation is clearly a full explanation, the proposal is plausible only if understood as involving full grounding explanation.

[8] One might, of course, use 'grounding explanation' simply to refer to any explanation of a metaphysical kind. But philosophers working on grounding explanation have tended instead to characterize such explanation by reference to paradigm cases, such as the explanation of a conjunctive fact in terms of its conjuncts, of a disjunctive fact in terms of its true disjuncts, of the possession of a determinable property in terms of the possession of a determinate property, and so on. I will follow this approach here.

contains hydrogen, for instance, is grounded in the fact that water essentially contains hydrogen. And yet if essentialist explanation is a species of grounding explanation then this must be so.

These doubts are substantiated by the following argument against the proposal. It is not implausible to think that what is in the nature of a given thing can lack grounds altogether. To see this, consider the many metaphysicians who defer to science in their metaphysical speculation. Where the deliverances of science are clear, they will 'read off' their metaphysics from these. For instance, if there is a scientific reduction of thermodynamics to statistical mechanics, they will take thermodynamic facts to be grounded in statistical mechanical facts. But where science is silent, they will feel free to speculate.

Suppose such a metaphysician comes to consider the fact that a certain electron has unit negative charge. What might she say about this fact? Her sense of the science may well incline her to take it to be a 'rock-bottom' fact about reality. She may well think, that is, that it is not grounded in any other fact. But what might she say about the electron's essence? She may well take science to be silent on the matter and so feel free to speculate. She may hold, for instance, that the electron *essentially* has unit negative charge. The fact that the electron has unit negative charge will then have an essentialist explanation in terms of this essentialist fact. But if the former is not grounded in any other fact, it is *a fortiori* not grounded in this essentialist fact. This scientifically deferent metaphysician will thus countenance an essentialist explanation where no grounding explanation exists. And so essentialist explanation cannot be a species of grounding explanation.

Although I suspect this metaphysician's combination of views will appeal to many philosophers, one need not share it in order to feel the force of this argument. For one thing, there could be other facts that are ungrounded yet essential. Given Cartesian dualism, for example, the fact that a given ego is conscious may well be 'rock-bottom', yet such an ego would presumably be conscious by its very nature. But more importantly, it is enough to find it intelligible that there are such facts. For whether there are such facts is then a substantive question and should not be settled merely by our account of what essentialist explanation is.

Not only does the proposal improperly settle substantive questions, it also runs afoul of natural conditions on the grounds of disjunctive facts. I will discuss two such conditions, one weaker and one stronger. Although I will motivate both independently here, it is worth noting that the weaker condition is further supported by its being a consequence of a principle in the best-developed logic of ground, due to Fine (2012a, b). In particular, it follows from Fine's elimination rule for disjunction. The proposal further runs afoul of natural conditions on the grounds of facts of existential generalization, though on this point I will be briefer.

Suppose we have a disjunctive fact $A \vee B$. When will an arbitrary fact ground this disjunction? An immediate first thought is that a fact can ground a disjunction only if it is a true disjunct of the disjunction. But this condition cannot be right. For a disjunction $A \vee B$ can be grounded not just in its true disjuncts but in the grounds of those disjuncts, and such grounds will not in general themselves be disjuncts of $A \vee B$.

All the same, we naturally think that the grounds of a disjunction will bear *some* connection to its true disjuncts. The grounding of a disjunction, we want to say, must 'proceed by way of' or be 'mediated through' its true disjuncts. In Fine's (2012a, 63) phrase, the true disjuncts are the conduit through which truth to the disjunction should flow.

The simplest way to capture this thought is to say that a fact can ground a disjunction only if either it is itself a true disjunct *or* it grounds a true disjunct. But as Fine has pointed out, this condition may be too strong. To see this, let A be the fact that the cat is on the mat, and let B be the fact that the mat is beneath the cat. One might take the view that these are distinct facts on the grounds that they involve distinct relations. Then although these facts will surely be intimately related, it will not be plausible to take either fact to ground the other. One cannot take A to ground B, for instance, since one will have equal reason to take B to ground A and so one will face circularity. All the same, one might reasonably think that A is *so* intimately related to B that it can do all of B's 'grounding work', in the sense that whatever is grounded in B will also be grounded in A.

Admittedly, it is not clear that one fact can do the grounding work of another fact in this way without itself being identical to or a ground of that fact. But if this *is* possible, then our simple condition on the grounds of disjunctions was too strong. To be safe, we should instead say that a fact can ground a disjunction only if either it is itself a true disjunct *or* it grounds a true disjunct *or* it does the grounding work of a true disjunct. And given plausible principles concerning ground, this new condition is equivalent to the condition that a fact can ground a disjunction only if it does the grounding work of a true disjunct.[9] This weaker condition is a consequence of Fine's (2012a, 64) elimination rule for disjunction.[10,11]

The proposal that essentialist explanation is a species of grounding explanation runs afoul of this weaker condition and therefore of the stronger condition as well. To see this, consider something that essentially satisfies a disjunctive condition without essentially satisfying either disjunct. Consider, for instance, a Boolean (binary) variable in a computer program. It is not implausible to suppose that any such variable essentially has one of two values—call them 0 and 1. Of course, it does not essentially have the value 0. Nor does it essentially have the value 1.

[9] Of course, in the case of the cat and the mat, one might take the facts A and B to be identical and so think the case provides no reason to think our first condition was too strong. (See Williamson 1985; Fine 2000; Dorr 2004, among others, for discussion of the general issues here.) But one might think all the same that there is some other reason to adopt the weaker condition. Alternatively, one might think that there is no such reason and that the stronger condition should be maintained. The case developed below shows that the grounding proposal should be rejected whichever of these views one has.

[10] Fine's rule is formulated more generally and employs his notion of 'weak ground'. If one fact weakly grounds another, that entails that the first does the grounding work of the second, in our sense. The converse, however, does not hold.

[11] One might think the condition should be weakened still further, or should have been weakened in a different way. Consider a disjunction $A \vee B$ both of whose disjuncts are true. One might wish to count as grounds of the disjunction all facts that ground the conjunction $A \wedge B$. And one might think that among these facts we may well find facts that do not do the grounding work of either disjunct alone. The case developed below shows that the grounding proposal runs afoul of this condition too.

Indeed, its value may switch between these two as the program executes. All the same, we may suppose it is essentially such that it has the value 0 or it has the value 1.

Suppose further that we have a particular Boolean variable `foo` that has the value 1. It then follows logically that `foo` has the value 0 or it has the value 1. Since `foo` is also *essentially* such that it has the value 0 or the value 1, we may give an essentialist explanation of its having the value 0 or 1 by saying that it essentially has the value 0 or 1. And so if essentialist explanation is a species of grounding explanation, `foo`'s having the value 0 or 1 will be grounded in its essentially having the value 0 or 1.

But this grounding claim is ruled out by the condition that a fact can ground a disjunction only if it does the grounding work of a true disjunct. The true disjunct that `foo` has the value 1 grounds the contingent fact that `foo` has the value 1 or snow is green. But the fact that `foo` essentially has the value 0 or 1 cannot ground this contingent fact. After all, since essentialist facts are necessary, and since facts necessitate what they ground,[12] no essentialist fact can ground anything contingent. The essentialist fact therefore fails to do the grounding work of the true disjunct and so cannot ground the disjunction. The proposal that essentialist explanation is a species of grounding explanation, then, runs afoul of the weaker condition on the grounds of disjunctions. It therefore runs afoul of the stronger condition as well.

In a similar way, the proposal also runs afoul of natural conditions on the grounds of facts of existential generalization. Much as we argued that the grounding of a disjunction must be 'mediated through' its true disjuncts, we may argue that the grounding of an existential generalization must be 'mediated through' its instances. And we may again capture this thought by means of a stronger and a weaker condition. The stronger condition is that a fact can ground an existential generalization only if either it is itself an instance or it grounds an instance. Or, if we respect Finean scruples, we obtain the weaker condition that a fact can ground an existential generalization only if it does the grounding work of an instance.[13]

The proposal is inconsistent with the weaker (and thus with the stronger) condition. To see this, consider something that essentially satisfies an existential condition without essentially satisfying any of its instances. Suppose, for instance, that this table is essentially spatially located—that is, that it is essentially such that there is some region in space at which it is located. Suppose further that as it happens, the table is located at region *R*. Of course, it is not essentially so located, for it could easily have been located elsewhere. We may now argue in much the same way as in the disjunctive case. The sole instance of the existential generalization that the table is spatially located is the fact that the table is located at *R*. And while the fact that the table is essentially spatially located is necessary, the

[12] *Pace* Leuenberger (2014) and Skiles (2015).

[13] This condition, with one slight qualification, is a consequence of Fine's (2012a, 65) elimination rule for the existential quantifier. The qualification is this: if some instance is in Fine's sense 'zero-grounded', then his rule allows that a fact might ground an existential generalization even if it fails to do the grounding work of any instance, provided it does the grounding work of the 'totality fact' that the objects of the domain are what they are. Our argument can be modified to accommodate this qualification.

fact that it is located at *R* is contingent. The former therefore cannot do the grounding work of the latter. Given the weaker condition, then, the fact that the table is essentially spatially located cannot ground the fact that it is spatially located. Since we *can* give an essentialist explanation of its being spatially located in terms of its being essentially spatially located, the proposal runs afoul of this condition.

For these reasons, the proposal that essentialist explanation is a species of grounding explanation should be rejected. We therefore arrive at the view that grounding explanation is not the only metaphysical kind of explanation. The fact that `foo` has the value 0 or 1, for example, admits of two kinds of metaphysical explanation: it has a grounding explanation in terms of its having the value 1, and it has an essentialist explanation in terms of its having the value 0 or 1 by its very nature.

Rather than taking metaphysical explanation to be exhausted by grounding explanation, we should instead see it as a family of kinds of explanation. Grounding explanation and essentialist explanation are two members of this family. Perhaps there are others still.

3 The ultimacy of essentialist explanation

I turn now to what I have called the ultimacy of essentialist explanation. Suppose we ask why Socrates' singleton set contains Socrates, and suppose we answer by saying that it is in the very *nature* of this set to contain Socrates. When this kind of explanation is given, one has the sense that we have reached the end of the explanatory road. After all, that is *just what the set is!*

In this sense, essentialist explanations are ultimate. I take it that we have an intuitive grasp of the notion of ultimacy or can acquire one by considering particular essentialist explanations. The aim of this section is to give an account of this intuitive notion.

Since every essentialist explanation is ultimate, there is a clear sense in which the essentialist *kind* of explanation is ultimate. It is not clear that any other kind of explanation is ultimate in this way. To be sure, there may well be particular causal explanations that are ultimate, such as those given in terms of the universe's initial conditions. For example, suppose we causally explain why this window shattered by saying that the Big Bang had a certain property. Then we may well have reached the end of the explanatory road. But some causal explanations are not ultimate in this way. If we causally explain the window's shattering by saying that Suzy threw a rock at it, then we have not reached the end of the explanatory road. For we might go on to explain Suzy's throw.

Again, there may well be particular grounding explanations that are ultimate, such as those given in terms of facts which themselves lack grounds. For example, suppose we give a grounding explanation of why I am forming a fist by saying that various particles are 'arranged fistwise'. Perhaps we have then reached the end of the explanatory road. But some grounding explanations are not ultimate in this way. If we give a grounding explanation of why I am forming a fist by saying that I am

clenching my hand in a certain way, then we have not reached the end of the explanatory road. For we might go on to explain why I am clenching my hand.

Essentialist explanations, by contrast, are in general ultimate. Once we have given an essentialist explanation, we have reached the end of the explanatory road. Such general ultimacy may well be unique to the essentialist kind of explanation. At the very least, it distinguishes it from other familiar kinds of explanation.

But how is the ultimacy of a *particular* essentialist explanation to be understood? In answering this question I propose to begin from the natural thought that ultimacy amounts to a lack of further explanation. What kind of further explanation is it that is lacking?

Perhaps it is grounding explanation. After all, it is hard to say what might ground essentialist facts, and so one might propose that the ultimacy of an essentialist explanation consists in there being no grounding explanation of its explanans. Since every essentialist fact is the explanans of some essentialist explanation, and since every essentialist explanation is ultimate, this grounding account is correct only if

Essence is ungrounded All essentialist facts are ungrounded.

But it is very unclear whether this condition holds.

Before casting doubt on the ungroundedness of essence, let me set aside some bad reasons for doubt.[14] First, one might think that Malia Obama's singleton set essentially contains a child of Barack Obama, and that this fact is grounded in the fact that singleton Malia essentially contains Malia, together with the fact that Malia is essentially a child of Barack. But this purportedly grounded essentialist fact is not essentialist in *our* sense. Following Fine, we may distinguish *mediate* and *immediate* essence. Essence in our sense is immediate: it is what something is at its core. By 'chaining' immediate essences we obtain a mediate essence. For example, by chaining the immediate essentialist fact that singleton Malia essentially contains Malia with the immediate essentialist fact that Malia is essentially a child of Barack, we obtain the mediate essentialist fact that singleton Malia essentially contains a child of Barack. But this last fact is not essentialist in *our* sense, since this set is not at its core related to Barack. Rather, its essential relation to Barack must be 'mediated through' the essence of Malia.

Second, one might think that water essentially contains hydrogen or helium and that this fact is grounded in the fact that water essentially contains hydrogen. But this fact too is not essentialist in *our* sense. We may again follow Fine in distinguishing *consequentialist* and *constitutive* essence. Essence in our sense is constitutive. The logical consequences of a thing's constitutive essence will form its consequentialist essence. For example, that water contains hydrogen entails that it contains hydrogen or helium, and so the latter is part of the consequentialist essence of water. But the fact that water essentially contains hydrogen or helium is not essentialist in *our* sense, since water is not at its core related to helium. Its essential relation to helium is rather a mere consequence of its being at its core related to hydrogen.

[14] My discussion here owes much to Fine (1995b) and Dasgupta (2014).

We therefore should not doubt the ungroundedness of essence on the basis of such cases. But it is controversial all the same. On a familiar picture, our ontology is the product of the mind's 'carving up' reality into various objects. The view is sometimes expressed through the metaphor of a cookie-cutter: objects are the cookies cut out by the mind from the dough of reality.[15] On this view, objects are what they are by virtue of the mind's action. And although this is not forced upon the defender of such a view, it will not be implausible for her to take essentialist facts to be grounded in mental facts on this basis.[16]

We may also argue directly against the ungroundedness of essence. If we take essentialist facts all to be ungrounded, then it seems we must also take them all to be fundamental.[17] But some are not fundamental. Consider the fact that the US presidency is by its nature a public office. Since this fact involves the presidency, it is not fundamental. For if it were then there would be a clear sense in which the presidency would be part of the 'basic furniture of the world' and this is surely not the case. Of course, the point generalizes. The grounding account seems to lead to an implausible proliferation of the world's basic furniture: anything with an essence will be part of it.

The inference from ungroundedness to fundamentality might be challenged. But philosophers have tended to reject the possibility of facts that are both ungrounded and nonfundamental.[18] The fundamental facts may be intuitively thought of as the only facts God created in making the world. For the fundamental facts, then, there is an answer to the question of how they got into the world: God put them there. What about the other facts? Provided they are grounded in fundamental facts, we can answer the question for them too: they are made to obtain by fundamental facts. But if a fact is nonfundamental and also ungrounded, how can it have gotten into the world? How can a fact float free of the fundamental in this way?

It might be thought that recent work by Dasgupta (2014, 2016) provides a response to this worry. Dasgupta argues that a fact can be both ungrounded and nonfundamental provided it is not 'apt for being grounded', and he suggests that essentialist facts fall in this category. But this response depends on the distinction

[15] Devitt (1984) attributes the view to Kant.

[16] Some remarks of Sider's (2011, 267) suggest another way in which essentialist facts might be grounded. He floats the possibility of giving a reductive account of essence on which *t* is essentially such that *A* just in case (a) it is the case that *A* and (b) *A* is a certain sort of claim about *t*, such as an analytic claim.

[17] For discussion of fundamentality see Fine (2001), Schaffer (2010), Jenkins (2011) and Sider (2011), among others.

[18] For instance, Schaffer (2009), Bennett (2011) and deRosset (2013), among others. Other than Dasgupta, who is discussed below, Fine (2001) is the only philosopher I know of who admits the possibility of such facts. For Fine, a nonfundamental fact can be ungrounded provided it does not help to constitute the 'objective' part of the world. One might take essentialist facts to fall in this category and thereby uphold the grounding account. But such a view still runs afoul of the point made below that ground is irrelevant to the ultimacy of essentialist explanation.

between what is and is not apt for being grounded. I will argue that despite Dasgupta's efforts this distinction remains elusive.[19]

Although Dasgupta officially takes the distinction as primitive, he does offer a gloss. A fact will be apt for being grounded if 'the question of what grounds it can legitimately be raised and given a sensible answer, an answer that either states its ground or else states that it has none' (Dasgupta 2014, 575). However, I do not think this gloss helps to convey the distinction. For given any ungrounded fact whatsoever, there is a clear sense in which it is legitimate to raise the question of what grounds it and to answer this question by saying that the fact has no ground. Dasgupta's gloss thus threatens to leave no room for facts that are both ungrounded and not apt for being grounded. But he thinks such facts are possible, so this cannot be how he understands the distinction. Is there any other way to convey it?

A distinction may be conveyed by example. But although Dasgupta suggests that essentialist facts are not apt for being grounded, this is only a suggestion. He does not offer anything as a clear example of a fact that is not apt for being grounded. He does say the following in support of his suggestion:

> For suppose (just to take a toy example) that it is essential to knowledge that someone knows only if she truly and justifiably believes. And suppose someone asks what explains this (in the metaphysical sense). In virtue of what (the question is) is it part of *what knowledge is* that someone knows only if she truly and justifiably believes? It is difficult to know how to respond. One is tempted to say that this is *just what knowledge is*… but of course this is what we were asked to explain! In saying this one is most naturally heard not as trying to explain this fact about knowledge in any serious sense but rather as deflecting the demand for explanation. (Dasgupta 2016, 386)

This suggests that to the extent we are inclined to deflect the demand for explanation of essentialist facts, we should take such facts to be not apt for being grounded. But once we recognize the distinction between grounding and essentialist explanation, we can see that it is not clear that we are at all inclined to deflect the demand for the former as opposed to the latter. It is therefore not clear that the phenomenon of deflection is connected to ground or to Dasgupta's distinction.

A distinction may also be conveyed by analogy, and Dasgupta does develop an analogy to causal explanation. He points out that we recognize a distinction between facts that are apt for causal explanation and facts that are not. For example, in the former category we find facts like the fact that this window shattered and the fact that the initial conditions of the universe were thus-and-so, while in the latter category we find mathematical facts like $7 + 5 = 12$. This is not simply the distinction between facts that *have* causal explanations and facts that do not. For among the facts that are apt for causal explanation we find not only facts that have such explanations, such as the fact that this window shattered, but also facts that lack such explanations, such as (let us suppose) the fact that the initial conditions of

[19] My argument is of some interest apart from the topic of essentialist explanation, as Dasgupta has appealed to the distinction in defending the principle of sufficient reason (2016) and in formulating the thesis of physicalism (2014).

the universe were thus-and-so. Dasgupta suggests that by analogy to this causal distinction we can recognize a distinction between facts that are apt for *grounding* explanation and facts that are not.

But it is not clear that causal explanation and grounding explanation are analogous in the way Dasgupta requires. We naturally understand the distinction between what is and is not apt for causal explanation by reference to the familiar distinction between what is inside the causal order or realm and what is outside this order. Both the fact that this window shattered as well as the fact that the initial conditions of the universe were thus-and-so are about what is inside the causal order. Mathematical facts, by contrast, are about what is outside the causal order. A fact will not be apt for causal explanation if it is about what is outside the causal order.

Let us suppose, then, that there is an analogous distinction between what is inside the 'grounding order' and what is outside this order. We might then try to say that a fact will not be apt for being grounded if it is about what is outside the grounding order. But no such fact would be possible, since *all* facts would be facts about what is inside the grounding order. After all, as Dasgupta himself recognizes, any two facts may be conjoined, and the conjuncts will ground the conjunction. Any fact will be a disjunct of some disjunctive fact, and the former will ground the latter. And in general the fact that A will partly ground the fact that it is true that A. So even if we could understand 'not apt for being grounded' in this way, this cannot be what Dasgupta has in mind.

Dasgupta offers a second analogy by way of conveying his distinction. The analogy is between grounding explanation and proof in an axiomatic system. He argues that we recognize a distinction between statements that are apt for being proved and statements that are not. But even if we do recognize such a distinction, it is not clear why this should lead us to recognize Dasgupta's distinction. After all, proof is not a kind of explanation. We may prove A from $A \wedge B$, for example, but this is no explanation of A. Or again, we may prove an axiom from itself, but this is no explanation of the axiom. Proof thus lies in an altogether different category from grounding explanation, and I do not see why we should draw conclusions about the latter on the basis of claims about the former.

I think, therefore, that Dasgupta has not offered us a way to make sense of facts that are both ungrounded and nonfundamental. And so the defender of the grounding account of ultimacy still faces our original argument against the ungroundedness of essence.

One might think there is another way to understand the ultimacy of an essentialist explanation in terms of ground. Rather than take it to consist in there being no grounding explanation of the explanans, one might instead take it to consist in the explanans' having a special kind of grounding explanation: a *zero-grounding* explanation.

The notion of zero-grounding is due to Fine. He argues for a distinction between a fact's being ungrounded and its being grounded in zero facts. For example, the fact that a given electron has unit negative charge is (let us suppose) ungrounded: it lacks a grounding explanation altogether. By contrast,

> suppose we thought that there was a operator of conjunction '∧' that could apply to any number of sentences A, B,…. It might then be maintained, as a general principle, that the conjunction ∧(A, B,…) was grounded in its conjuncts A, B,…. So in the special case in which the operator ∧ was applied to zero statements, the resulting conjunction $\top = \wedge()$ would be grounded in its zero conjuncts.[20]

Just as our earlier grounding account is correct only if all essentialist facts are ungrounded, so the zero-grounding account is correct only if they are all zero-grounded.

But what reason is there to think this condition is met? If we admit that the null conjunction ∧() is zero-grounded, we do so because it is a degenerate case of the general grounding principle that conjunctions are grounded in their conjuncts. But there seems no corresponding grounding principle of which essentialist facts are a degenerate case.[21]

Litland (2017) has motivated a claim of zero-groundedness in a different way. He pictures ground as a machine that takes some propositions as input and generates other propositions as output. The fact that A will ground the fact that B just in case the machine, given A, generates B. Litland suggests that the fact that A will be zero-grounded just in case A is generated given no input. He imagines that the machine, when given no input, 'simulates' the result of being given various propositions as input, and so he thinks that among the zero-grounded facts will be facts about ground itself. But even if Litland's picture of ground-as-machine is apt, there seems no reason to think that, given no input, the machine will generate propositions of the form 't is essentially such that A'. And so Litland's picture does not motivate the claim that essentialist facts are zero-grounded.

In any case, even if such facts are zero-grounded, the ultimacy of an essentialist explanation cannot consist in its explanans' having a zero-grounding explanation. For a zero-grounding explanation is still a grounding explanation, albeit one of a strange kind. Consider the null conjunction, for instance. If Fine is right, then by appeal to facts about the operator ∧, an explanation can be given of why the null conjunction obtains. To have a zero-grounding explanation, then, is to have this strange kind of grounding explanation. But when we have given an essentialist explanation, we have reached the end of the explanatory road. Surely this does not *consist* in there being a further explanation! And so the ultimacy of an essentialist explanation cannot consist in its explanans' having a zero-grounding explanation.

What then *does* it consist in? In order to see how to answer this question, let us first consider the analogous question for causal explanation. What does the ultimacy of such an explanation consist in?

The natural answer is that it consists in there being no causal explanation of its explanans. Pretend, for instance, that the world came into existence 2 s ago ex nihilo. And suppose that 2 s ago Suzy threw a rock at a window that has just now

[20] Fine (2012a, 48). Fine speaks of statements here, but a corresponding example involving facts could be given.

[21] I am grateful to Ted Sider for discussion of this issue.

shattered. Then a causal explanation of the shattering in terms of Suzy's throw is intuitively ultimate: in giving this explanation we seem to reach the end of the explanatory road. It is natural to think that this ultimacy consists in there being no causal explanation of Suzy's throw.

To be sure, there may be some other kind of explanation of the throw. But this is irrelevant to the ultimacy of our causal explanation. The fact that Suzy threw a rock may well have a grounding explanation in terms of the motions of the particles that constitute her body and the rock. But whether or not there is such an explanation of Suzy's throw, it does not matter. We remain firm in our intuitive judgment that the causal explanation is ultimate.

These considerations motivate a general thesis. What is it in which the ultimacy of an explanation of a given kind consists? The natural answer is that it consists in there being no explanation of that kind of its explanans. In particular, then,

> **Ultimacy of essentialist explanation** The ultimacy of an essentialist explanation consists in there being no essentialist explanation of its explanans.

As in the causal case, the explanans may admit of some other kind of explanation. But whether or not there is such an explanation, this is irrelevant to the ultimacy of the essentialist explanation. In particular, an essentialist explanation can be ultimate even if its explanans admits of grounding explanation. We therefore face no pressure to take essentialist facts to be ungrounded and so avoid the implausible consequences that threatened the grounding account.

It is worth noting that the ungroundedness of essence is almost inevitable if one fails to recognize the distinction between essentialist and grounding explanation. For the ultimacy of essentialist explanation will then naturally lead one to conclude that every essentialist fact lacks a grounding explanation. I cannot help but think that the philosophers who have been attracted to the ungroundedness of essence may have arrived at this in part through not properly distinguishing these two kinds of explanation.

It is natural to express the ultimacy of essentialist explanation by saying that once we have given such an explanation, there is no further explanation that can be given, or there is nothing more to say by way of explanation. But these claims must be understood only to deny further *essentialist* explanation. We do not deny that the explanandum may admit of some other kind of explanation, such as causal or grounding explanation, in addition to its essentialist explanation. Nor do we deny that the explanans may have a further explanation of some kind or other.[22] We insist only that it has no further essentialist explanation.

The preceding section argued that essentialist explanation should not be understood in terms of ground. The present section extends this moral: the *ultimacy*

[22] Suppose, for instance, that one takes the fact that water contains hydrogen to admit of essentialist explanation in terms of the fact that water essentially contains hydrogen. Nothing said here prevents one from taking the latter to admit of some kind of further explanation—perhaps a grounding explanation—in terms of the fact that water is essentially H_2O, or in terms of some more general fact about the essence of the kind 'chemical compound', or in still other terms.

of such explanation, too, should not be understood in terms of ground. Rather, this ultimacy can be understood only in essentialist terms. On both counts, our two metaphysical kinds of explanation should be kept separate.

4 The inessentiality of essence

The ultimacy of an essentialist explanation, then, consists in there being no essentialist explanation of its explanans. But natural though this account is, one might still wonder whether it is subject to counterexample.

There is clearly no counterexample to the sufficiency of the account. That is, there is no essentialist explanation whose explanans itself lacks an essentialist explanation but which is not ultimate. For every essentialist explanation is ultimate.

But might there be a counterexample to the account's necessity? That is, might there be an essentialist explanation which is ultimate but whose explanans admits of essentialist explanation? If the following principle holds, there is no such counterexample.

> **Inessentiality of essence** There do not exist s, t and A (where s and t are not necessarily distinct) such that s is essentially such that t is essentially such that A.

I will argue that this principle does indeed hold and thus that there is no counterexample to our account. But it should be borne in mind that the account is attractive even without this additional support. And so even if my argument fails to establish that there is no counterexample, as long as none is forthcoming there remains reason to adopt the account.

I introduce some notation in order to more easily argue for the principle. Let us use 'E_tA' to mean that t is essentially such that A.[23] We may then state the principle of the inessentiality of essence as the claim that we never have E_sE_tA. Now either s and t are identical or they are distinct; we consider each case in turn.

Suppose first that s and t are identical. Then the principle of the inessentiality of essence amounts to the claim that there do not exist t and A such that E_tE_tA. To assess this claim, consider the proposition that E_tA—that t is essentially such that A. Could this proposition about what is essential to t be *itself* essential to t? I do not think that it could.

To see why not, consider a particular case. Let it be the proposition that Socrates' singleton set essentially contains Socrates. We may think of this proposition, and indeed of any essentialist proposition about this set, as a statement of what the set is 'at its core'. At least part of what this set is at its core, then, is a 'container' of Socrates. Does *this* fact, about what the set is at its core, itself partly constitute what the set is at its core? It does not seem so. It is *about* the core, so to speak, rather than *part* of the core. And so we should not take singleton Socrates to be essentially such that it essentially contains Socrates.

[23] This notation is due to Kment (2014). Fine's (1995a) notation '$\Box_tA$' is more familiar, but I wish to avoid the suggestion that our notion of essence obeys a modal logic.

To be sure, there might be thought to be a sense in which this essentialist claim holds. After all, the set's essentially containing Socrates might be thought to be entailed, perhaps trivially, by its containing Socrates. It will then be part of the consequentialist essence of the set that it essentially contains Socrates. But this thought should not mislead us into taking the essentialist claim to hold in *our* sense.[24]

Suppose now that s and t are distinct. Can it be the case that E_sE_tA? If we never have E_tE_tA, it is even more clear that that we never have E_sE_tA. For if E_tA does not even lie in the nature of t itself, how could it lie in the nature of some *other* thing? If E_tA is outside the core even of t itself, so to speak, it is still further outside the core of what is distinct from t. And so it seems we cannot have E_sE_tA.

Again, it might be thought that there is a sense in which an essentialist claim of this form can hold. Consider the claim that Malia Obama's singleton set is essentially such that Malia is essentially a child of Barack. Since this set essentially contains Malia, it might be thought part of its consequentialist essence, perhaps trivially, that Malia is essentially a child of Barack. But this thought should not mislead us into taking the essentialist claim to hold in *our* sense of what something is at its core. Indeed, at its core the set is not related to Barack.[25]

Our intuitive argument against the possibility of E_sE_tA for distinct s and t finds further support in a principle about essence. Suppose that momentarily we will be given a thing and asked to say what lies in its nature. That is, we will be given t and asked to list the propositions A for which E_tA. Before we know what we will be given, can we say anything about the propositions we will have to list? I think we can. At the very least, these propositions will surely all involve the thing in question. For how could a fact partly constituting what a thing is at its core fail to involve that thing?

I suspect that this thought has guided philosophers when they have suggested what might lie in the nature of various things, since as far as I know their suggestions have always conformed to it. For example, we find Aristotle asserting that Socrates is such that *he* is essentially human. We find Anselm asserting that God is essentially such that nothing greater than *him* can be conceived. We find

[24] See also the discussion in Dasgupta (2014). It is actually a theorem of Fine's (1995a) system that if t is essentially such that A, then t is essentially such that t is essentially such that A. But that system is intended to govern a consequentialist notion of essence, and Dasgupta shows that the proof of Fine's theorem does not plausibly carry over to the case of our constitutive notion.

[25] One might take the nature of conjunction to be given by a certain function f on pairs of truth values and so think that conjunction essentially operates in accord with f. And one might further take functions to have their values essentially and thus think that f not only maps (T, T) to T but does so essentially. By 'chaining' these essences in the manner discussed in Sect. 3, one might then come to accept the proposition that conjunction essentially operates in accord with a function that maps (T, T) to T. But this should not be taken to provide a counterexample to the principle of the inessentiality of essence. For in the first place, there is no reason to take it to be essential to conjunction that the conjunction-function f *essentially* maps (T, T) to T, which is what is required for a counterexample. And in the second place, the notion of essence involved in the proposition is mediate, whereas the notion involved in the principle is immediate. I am grateful to an anonymous referee for calling my attention to this case.

Leibniz asserting that if x is F then x is essentially such that *it* is F. And we find Kripke asserting that water is essentially such that *it* is H_2O.

It will help to state the thought as the following principle:

Sources are constituents If E_tA then t is a constituent of A.

According to this principle, the 'essentialist source' of a proposition, that in whose nature the proposition lies, must itself be a (Russellian) constituent of the proposition.[26]

We may now use this principle to argue that we never have E_sE_tA for distinct s and t. If E_sE_tA, then since sources are constituents, s must be a constituent of E_tA. So either s is identical to t, s is a constituent of A, or s is the essentialist operation E—the operation that takes t and A to E_tA. Since by assumption s and t are distinct, there remain two cases to consider.

Suppose first that s is a constituent of A. Then since E_tA, the essence of t involves s. And of course, since E_sE_tA the essence of s involves t. But there is a powerful reason to think such 'reciprocal essences' are impossible. To say that a thing is by its very nature a certain way, or is essentially a certain way, is to give a partial 'real definition' of that thing, in the sense of an explanatory account of what the thing is. Thus not only does singleton Socrates contain Socrates by its very nature, we may explain what singleton Socrates is by saying that it is the set that contains Socrates and nothing else. Reciprocal essences therefore lead to circular explanation. If the essence of t involves s and vice versa, then what t is may be explained in terms of s and vice versa. But no explanation can be circular in this way.[27]

We therefore cannot take s to be a constituent of A. The remaining possibility is that s is the essentialist operation E—or, as I will say, that s is essence itself. Essence itself must by its very nature be such that E_tA. But we have established that s (and therefore essence) is neither t nor a constituent of A. E_tA is thus the claim that some proposition not involving essence lies in the nature of something other than essence. Can such a claim itself lie in the nature of essence? I have no proof that it cannot, but I have been unable to think of an example with any plausibility. Given that such an example is not forthcoming, and given our earlier intuitive argument that we never have E_sE_tA for distinct s and t, I think we are justified in rejecting this possibility.

I conclude that the principle of the inessentiality of essence is true and thus that there is no counterexample to our account of the ultimacy of essentialist explanation.[28]

[26] Rosen has discussed a related principle in unpublished work.

[27] Cf. Fine (2015, 296–267).

[28] We have taken an essentialist explanation to be one in which we explain a fact of the form 'A' in terms of a fact of the form 't is essentially such that A'. But some philosophers (such as Fine 1995b) have thought that, in addition to these individual essentialist facts, there can also be collective essentialist facts of the form '$t_1 \ldots tn$ taken together are essentially such that A' (in symbols: $E_{t1\ldots tn}$A). If we wish to recognize collective essentialist facts, we must modify our characterization of essentialist explanation to accommodate them, and we must generalize our argument for the principle of the inessentiality of essence. This can be done, but a full presentation must await another time.

5 Why essentialist explanation satisfies

In this brief final section I turn to what I take to be one of the main virtues of essentialist explanation. Suppose we ask why Socrates' singleton set contains Socrates, and suppose we answer by saying that it is in the very *nature* of this set to contain Socrates. That is *just what the set is!* To my mind there is something utterly satisfying about this explanation.[29]

I would like to suggest that not only does the principle of the inessentiality of essence support our account of the ultimacy of essentialist explanation, it is also the key to understanding why such explanations are so satisfying.

There is a sense, to be sure, in which any (correct) explanation is satisfying. Suppose we ask why this window shattered, and suppose we answer correctly by saying that Suzy threw a rock at it. This explanation is satisfying in the sense that it answers our question. But essentialist explanations are satisfying in some further sense. What is this?

Although the question of why this window shattered is answered by saying that Suzy threw a rock at it, we can go on to ask why this explanans holds. Why (in the causal sense) did Suzy throw a rock? One might suggest that we cannot similarly ask why (in the essentialist sense) the explanans of an essentialist explanation holds, and that this inability accounts for the satisfying character of such explanation. But it seems to me that we can ask such a question about any explanation, essentialist or no. I do not see what is impossible or illegitimate about the question of why singleton Socrates essentially contains Socrates.

Of course, our account of ultimacy does entail that this question lacks an answer. Since essentialist explanations are ultimate, there is no answer to the question of why (in the essentialist sense) their explanantia hold. Might essentialist explanations be satisfying because they are ultimate?

I do not think so. For I believe there may well be unsatisfying ultimate explanations. Suppose we causally explain why this window shattered by saying that the Big Bang had a certain property. This explanation may well be ultimate: there may be no further causal explanation of why the Big Bang had this property. But we may not know *why* this explanation is ultimate, or *why* there is no further causal explanation. If we are ignorant in this way, then to my mind the ultimacy of this explanation will be a source of frustration rather than satisfaction.

Given an *essentialist* explanation, however, we *do* know why it is ultimate, if only implicitly. In §4 we argued for the principle of the inessentiality of essence, and our argument for this principle appears to rest on considerations stemming from the nature of essence itself. The argument is therefore plausibly regarded not just as a demonstration of the principle's truth but also as an explanation of why it holds.

And given an explanation of why the principle holds, we may explain why essentialist explanations are ultimate. As we argued in §3, the ultimacy of an essentialist explanation consists in there being no essentialist explanation of its explanans. Of course, it is in the very nature of essentialist explanation that this explanans is an essentialist fact. And the principle of the inessentiality of essence

[29] Cf. Dasgupta (2016, 383).

explains why no essentialist fact has an essentialist explanation: there is never a suitable essentialist fact to explain it.

This, in my view, is the sense in which essentialist explanation is satisfying. Not only are essentialist explanations ultimate, we know why they are ultimate. If I am right about this, then it is by recognizing the principle of the inessentiality of essence that we are able to see why this kind of explanation is so satisfying.

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