

Introduction

In the last few decades, big picture metaphysics has enjoyed something of a renaissance in certain corners of the philosophical universe. One might opine that big picture metaphysics has *always* been the business that metaphysicians are in – what is thinking about causation or the nature of time, for example, if not engaging in big picture metaphysics? Point taken. Perhaps it is more accurate to say, then, that a *certain kind* of big picture metaphysics has been back in vogue. The first feature of this approach to metaphysics is that it is preoccupied with treating issues surrounding the overarching structure of reality. It is not so much concerned with what the relation is between, say, a member and its set or the table and its parts *only*, but, rather, how members, sets, tables and table parts fit into a broader order of things. In particular, a whole branch of metaphysics has sprouted around the idea that reality has a distinctively *non-causal* overarching structure and that this structure is fixed by relations of *ground*.

In addition to the exploitation of the notion of ground, the strain of contemporary metaphysics that I have in mind appears also to be in the business of engaging with old school, big picture kinds of questions. Although this point is often not made as explicitly as I believe it ought to be, a lot of contemporary metaphysics has been preoccupied with questions such as ‘what explains the nature and existence of everything?’ It is as a result of attempting to respond to questions surrounding the ultimate nature and structure of the cosmos – or perhaps just some corner of it – that we have seen a lot of attention paid to the idea that there is something *fundamental*. Commonly coupled with kinds of naturalism or physicalism, the idea that there is something fundamental, that it is physical and that this fundamental physical stuff (and I use ‘stuff’ here in a non-metaphysically loaded way) accounts for the rest of the physical universe, at least, has become fairly mainstream. A final feature of the kind of metaphysics that I have in mind is that these kinds of questions, this approach to metaphysics, takes the issues with which it is concerned at face value. Questions about the overarching structure of reality are questions about mind-independent reality; they are not to be palmed off as the result of linguistic tangles or conceptual confusions. Questions about what grounds what are questions about the world out there.

This kind of big picture metaphysics – the kind that is preoccupied with notions of grounding and fundamentality – is what this Element is about. In particular, it is focused on how contemporary thinkers have been thinking about fundamentality, and how the notion of ground is used in service to that. But this Element is not just about how contemporary thinkers have been thinking about

fundamentality. It also takes seriously the idea that many philosophers across time, geographical location and tradition have also been in the business of thinking about the (non-causal) overarching structure of reality and what is fundamental.

In this Element, I assume – an assumption that I defend in Section 2 – that we can reasonably suppose that historic figures have also been in the business of understanding the broader, non-causal structure of reality and what ultimately explains it. One reason to suppose that historic figures don't, in fact, make use of the notion of grounding is that statements of ground involve claims about a relationship between facts or propositions and most historical figures didn't talk in this way. Heidegger, for example, didn't claim that the fact that Being is grounds the fact that beings are – or something of the like.¹ Instead, we might understand him as having made claims about Being grounding beings; so, claims about *things* grounding *things*.² Some contemporaries are happy to understand grounding as holding between things.³ Others are of the view that grounding links propositions or fact-like entities. I will oftentimes speak most generally in the language of *entities* as involved with grounding. Not only will this allow me to be ecumenical as regards the many views about the nature of grounding, but it also allows me to speak about historic Western and non-Western views that were not formulated in the language of facts.

This Element offers an, albeit brief, overview of the notion of fundamentality. In Section 1, I introduce the notions of grounding and fundamentality. In Section 2, I defend the thought that neither grounding nor fundamentality are new. In Section 3, I offer a discussion of some aspects of the metaphysics of fundamentality before turning, in Section 4, to its epistemology. In the final section, Section 5, I introduce some alternative views. I, along with others, have defended the possibility of these alternative views, as well as having drawn attention to the prevalence of these alternative views in non-Western traditions. It has not been uncommon for philosophers in the contemporary discussion, on the one hand, to assume that fundamentality is roughly correct and, on the other hand, to appeal to something like an intuition for assuming that to be the case. I now think that such an attitude has actually made foundationalism an easy target, and that there are powerful arguments that speak to the strength of the

¹ I am aware that even if Heidegger had spoken in the language of facts, he wouldn't have been able to formulate a grounding claim like this. My example here is just to highlight a point about fact – versus thing – talk in historic figures.

² Again, I am aware that it is controversial to claim that for Heidegger Being is a thing. I am not intending to make a substantive claim about the metaphysics of Being for Heidegger, but rather a point about grounding being used in a way such that it doesn't connect propositions or fact-like entities. I hope the reader can understand my claim here charitably. See Casati (2021).

³ See, for example, Schaffer (2009).

view. This is not to say that I now think that foundationalism is correct, but that it is much more compelling and much harder to dislodge than I once thought.

1 Groundwork: Grounding and Fundamentality

The world contains many and varied things: trumpets, numbers, sentences, facts, wars and great disappointments. These things – let us call them the constituents of the world or entities – enter into relationships with other of the world's constituents. Trumpets are (type-)identical to other trumpets, for example, and wars tend to be the cause of many great disappointments. Amongst the relations of metaphysical importance that lend structure to the shape of our world are also relations that we call *grounding relations*.

What does it mean to say that one thing grounds another? Matters here, as we shall see, are complicated, but let us begin with some (allegedly) intuitive examples. Take a trumpet. Whilst that trumpet was caused to be through the activity of an instrument maker, it bears a particularly important relationship to its parts. We can say, then, that the existence of the trumpet is grounded in the existence of its parts. Turning to the consideration of war, history books are filled with tales of what caused various wars to happen: Franz Ferdinand was assassinated, Hitler invaded Poland, terrorists attacked the World Trade Center on September the 11th. But just as trumpets seem to bear an important, non-causal relationship to their parts, wars seem to bear an important non-causal relationship to the events that constitute them. Regardless of what caused a war to begin, what it is to be a war – perhaps a particular war – is to have troops massed at a border, economic relations severed or leaders pointing nuclear weapons at each other's nations. These events that are constitutive of a state of war can be said to ground the event that is that war.

Grounding relations need not obtain exclusively between concrete, contingent entities. For the structuralist about numbers, for example, the identity of, say, the number 7 will be grounded in the mathematical structures it is embedded in. Consider, now, the proposition <all people have a heart>. Understood as a universal generalization, the truth of this proposition will be grounded in the truth of its particular instances – <Sally has a heart>, <Pete has a heart> and so on.

From here, it seems like we can already say several things about the notion of grounding. First, grounding seems to be a distinctively non-causal kind of metaphysical relation. Second, grounding relations seem to obtain between entities of a variety of (possibly all) categories. Third, grounding looks to be familiar. That wholes bear an important relationship to their parts or that events are comprised of events is by no means a recent or even striking discovery.

Fourth, the relation looks to induce a kind of hierarchy. Something like intuition tells us that if the trumpet is grounded in its parts, then the parts aren't also grounded in the trumpet. Fifth, grounding seems to be intimately involved with a certain kind of (non-causal) explanation.

Unfortunately, however, here we are already flirting with controversy, as there is very, very little that proponents of grounding agree upon. In the coming pages, we will ride roughshod over many of the issues central to coming to understand the notion of grounding that friend and foe of the notion alike disagree upon.

1.1 Grounding: The Framework and Some of Its Controversies

Discussions of grounding generally start with a slew of example cases of the phenomenon that are widely assumed to be intuitive or obvious. The existence of wholes is grounded in the existence of their parts, the existence of sets is grounded in their members and the truth of certain kinds of propositions is grounded in the truth of certain other kinds of propositions as determined by the laws of logic. But, agreeing upon such example cases, very little, it turns out, has been settled.

1.1.1 *The Relata*

So far, I have made claims such as 'the war is grounded in the events that constitute it' and 'the existence of the trumpet is grounded in the existence of its parts'. What, then, are the relata of grounding relations? According to one view, the relata of grounding relations can be drawn from any and all ontological categories and the relation can obtain cross-categorically.⁴ On such an approach, it is perfectly acceptable to claim that a trumpet is grounded in its parts, that a fact is grounded in its (non-facty) constituents, that an event is grounded in other events or that a truth is grounded in its truth-maker (a piece of the world). Assuming that 'entity' is the broadest ontological term available, we can refer to this kind of approach as *entity-grounding*.

The alternative, and more popular, view denies that grounding can obtain between relata of all categories or cross-categorically and, instead, holds that the only relata apt to enter into grounding relations are relata that have a propositional structure.⁵ On some views, this will be tantamount to saying that grounding relations obtain between worldly entities like facts. Consider, again, how some of our grounding claims have been phrased earlier – 'the existence of the parts ground the existence of the whole'. As a statement of

⁴ See, for example, Schaffer (2009).

⁵ See, for example, deRossett (2013), Fine (2012) and Rosen (2010).

ground, this sentence looks to express a relationship not between things – parts and wholes – but between entities with a propositional structure – <the existence of the parts> and <the existence of a whole>. Recognizing that we have said nothing yet as regards the relationship between sentences, propositions and facts, let us call this second approach *propositional-grounding*.

As we shall come to see, philosophers who can be considered proponents of the propositional approach nonetheless disagree over what the relata of grounding relations are. Some are of the view that the relata are *facts*, whereas others are of the view that grounding talk is best understood in terms of connectives between *sentences*.⁶ Why one of these views might be preferable to the other, we shall come to in a moment, but let us first consider why one might prefer one of entity- or propositional-grounding over the other.

Entity-grounding not only looks to have historical precedent, but it also has a certain kind of intuitive appeal that speaks in its favour. One way of understanding the relationship between Being and entities (beings) in Heidegger, for example, is in terms of the notion of grounding: Being grounds entities.⁷ In this particular case, not only is the relationship not typically expressed as one that obtains between propositional entities, but there is good reason to think it cannot be. For Heidegger, exactly what Being cannot do is *be*, in which case claims such as ‘the being of Being grounds the being of beings’ don’t work. It is Being that grounds beings and not the being of that Being. It is not hard to uncover many cases in which a grounding relationship appears to be expressed in this way. We say that sets are grounded in their members, or that God grounds everything else. But, thinks the proponent of propositional-grounding, although we may *say* that sets are grounded in their members or that God grounds everything, things – sets, God – don’t actually ground anything. When we say that a set is grounded in its members, what we really mean to say is that the fact that the set exists is grounded in the fact that its members exist, or something of the like. Sets, Gods, numbers or wars don’t ground, or aren’t grounded by, anything. It’s their having of a certain feature that stands in need of grounding and their having a certain feature that does that grounding work. Or so the reasoning goes. That this is the way grounding behaves, thinks the proponent of the propositional account, is the reason that they prefer this account.

What the propositional account is highly suggestive of is a tight and important connection between grounding and explanation. In fact, it is not uncommon to hear it said that grounding just is *metaphysical explanation*. Putting aside how we might understand the exact connection between grounding and

⁶ See for example Rosen (2010) as an example of the former and Fine (2012) as an example of the latter.

⁷ Casati (2019) and (2021).

explanation, it is not difficult to see why philosophers might think both that there is an important connection and that grounding ought to be understood propositionally. Look, again, to some examples of grounding statements: ‘the table exists because its parts exist and are arranged thus and such a way’, ‘The United Kingdom is a constitutional monarchy in virtue of having both a king and a parliamentary system’. In both cases, we have sentential connectives – ‘in virtue of’ and ‘because’ – that express a relation of ground. And in both cases the statement of ground has a propositional structure that also conveys an explanatory connection. What explains the fact that the United Kingdom is a constitutional monarchy is the fact that it has a king as well as a parliamentary system. What explains the existence of the table is the existence and arrangement of its parts. Strictly speaking, tables and kings don’t explain anything. What does explain things, however, is the *existence* of a king and the *having* of a parliamentary system.

1.1.2 The Relation

Just as philosophers disagree over what the relata of the grounding relation are, they also disagree over how we are to best understand the relation. Indeed, there is disagreement over whether statements of ground express a relation at all. Disputes over how best to understand this central cluster of issues range over two main concerns: (1) is grounding best expressed by a sentential connective or a relational predicate, and (2) is grounding just metaphysical explanation or does it merely underwrite or back it?

Let us consider first the debate between proponents of the sentential connective approach and proponents of the relational predicate approach. According to the former – the sentential connective approach – statements such as ‘the table exists because its parts exist’, or ‘justice prevails in virtue of truth’, can be understood in the same way we understand sentences such as ‘the building is sleek and modern’. We have a connective – in our case ‘because’/‘in virtue of’ – that joins two sentences to form a sentence, in much the same way that ‘and’ connects sentences to form other sentences. The sentential connective approach understands grounding claims without insisting that there are worldly relations or the worldly entities that those relations relate. That the sentential connective approach is not metaphysically loaded in this way is often cited as one big reason that speaks in its favour.

In contrast, the relational predicate approach is ontologically committing. According to this view, statements such as ‘the building is tall and sleek in virtue of its being tall and its being sleek’ or ‘the existence of the table is grounded in the existence of its parts’ employ a relational predicate, *grounds*, that picks out

a real relation of ground. What this relation is thought to relate is commonly propositions or facts. This view, then, moves us from sentences to worldly entities – grounding relations and facts. Taking the sentence ‘the existence of the table is grounded in the existence of its parts’ on the relational predicate approach delivers the result that what the grounding claim conveys is that the fact that the table exists is grounded in the fact that its parts exist – two facts related by a grounding relation. To be clear, though, all the relational predicate approach commits us to, strictly speaking, is the existence of a worldly grounding relation. It is still open to the proponent of this approach to claim that the relata that flank the relation can be, say, things as opposed to facts. Although the relational predicate approach is ontologically committing, many are happy to pay this price. For anyone of a realist bent, that the claims pick out a worldly relation is natural and desirable.

The second dimension along which there is disagreement over how we are to understand grounding pertains to its relationship to metaphysical explanation. According to *unionists*, grounding just *is* metaphysical explanation. According to the *separatists*, on the other hand, grounding relations underwrite metaphysical explanations and are not, therewith, identical to them.⁸ Matters here are complicated and made all the more so by the fact that the relationship between grounding and explanation is often taken for granted and its nuances often not explicitly stated or even recognized.

Why prefer one approach over the other? Insight into the nature of ground, it is commonly believed, is to be achieved by way of an examination of explanation. It is by looking at the better understood notion of explanation that we can come to learn how grounding behaves; and by looking to explanation that we come to be able to justify positing a relation of grounding in the first place.⁹ One reason to prefer the unionist approach is that it is simpler. Instead of having two phenomena – grounding and explanation – and two phenomena whose relationship to one another then also needs to be accounted for, we can claim that grounding just is explanation and be done with it. And this is easy enough as grounding behaves remarkably like explanation anyway: it is asymmetric, transitive, irreflexive, non-monotonic and hyperintensional. What the discovery of grounding-as-synonymous-with-explanation has allowed us to do is to recognize that there is a distinctively non-causal mode of explanation that is familiar to us from domains as varied as the special sciences, ethics and

⁸ See Raven (2015), Maurin (2019) and Brenner et al. (2021).

⁹ See Maurin (2019) for a thorough discussion of the relationship between grounding and explanation as it is widely understood in the literature; as well as a discussion of the many problems with the extant views.