

# From Epistemology to Metaphysics

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What can the epistemologist teach the metaphysician about *justification*? Quite a lot, as I shall argue here. It is a central goal of metaphysics, following Quine, to say what there is.<sup>1</sup> We hope to give an exhaustive account of the constitution of reality. Here, it is insufficient merely to enumerate extant entities; we must also say something about their ontological *structure*. We want to know further what is *fundamental* and what is *derivative*; for any existent item, we may ask what *grounds* it.<sup>2</sup> Compare: it is a central goal of epistemology to say what we could know—what items may properly be the objects of our knowledge. Moreover, for each known datum, we may further ask: is it fundamental (axiomatic, say), or derivative? I interpret these questions of metaphysics and epistemology both of them to concern *justification*, and justificatory *structure* especially.

Recently, there have been several important questions asked about metaphysical structure. *What grounds what? Is justification an absolute notion, or only relative? Is an infinite justificatory series impossible?* I believe that we may make progress on these questions if we attend to older questions of justification in epistemology and inference. My purpose in this paper is to examine how these two areas of inquiry may be mutually illuminating, by identifying where they sustain similar intuitions, hold similar promise, and suffer similar vexations. I suggest that their chief similarity lies in their shared requirement to answer the problem of justificatory regress. Consequently, we should expect similar *disputes* to arise in each domain. I canvas three important positions in justificatory structure—Foundationalism, Coherentism, and Infinitism—and I say what the metaphysician may learn from the existing debates in epistemology (and just maybe what she might teach the epistemologist too). Although my main aim is simply to suggest how the arguments about metaphysical structure might fruitfully proceed (without taking a firm stand on which side should *win*), I also offer a positive opinion on the final state of play. I conclude by suggesting that our deepest intuitions about justification recommend Foundationalism, as it is the only account which does justice to the indispensable notions of *priority* and *dependence*.

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<sup>1</sup> Willard Van Orman Quine, "On What There Is," in *From a Logical Point of View* (Cambridge, MA: Harvard University Press, 1980).

<sup>2</sup> Cf. Jonathan Schaffer, "Monism: The Priority of the Whole," *Philosophical Review* 119, no. 1 (2010): §1.2

## GROUNDING

How shall we understand metaphysical (that is, ontological) justification? Contemporary metaphysicians have offered a variety of subtly different accounts,<sup>3</sup> but for now I will attend just to their common conceptual core. The notion of grounding emerges naturally from a layered conception of reality, in which we take some items to obtain—or exist, or hold—*in virtue of* others. Examples abound: some will say that a social group is grounded in its members. In saying this, they are suggesting that the social group owes its *nature* and *existence* to the nature and existence of the members; for instance, the group is arranged in a circle just because the members of the group are so arranged. Similarly, it is sensible (whether true or not) to say that the table is grounded in its particles, that the year is grounded in the motion of celestial objects, that a law is grounded in an act of the legislature, and so on. The notion of ground, generally speaking, is intended to capture the idea that some items account for the nature and existence of others; reality is not flat, but *stratified*.

As an ordered relation, ontological priority may come in degrees,<sup>4</sup> allowing for chains of grounding in which one relatum is more *fundamental* than the next relatum, which will in turn be more fundamental than those which follow, and so on. This informs the notion of *relative* fundamentality. Descending in the ontological hierarchy, we may say that some things are *absolutely* fundamental—these are things such that they depend on no further things for their existence. The totality of ultimately fundamental things is sufficient for the *complete* contents of the world, since the existence of the fundamental things guarantees the existence of the derivative things. Ground is an *explanatory* notion: the grounded item is explained—in a metaphysical sense—in terms of the item(s) which ground it.<sup>5</sup> It is for this reason that the plausibility of a grounding claim may be assessed in terms of its plausibility *qua* explanation. If it is claimed that *the social group is wholly grounded in its members*, then it will tell against this claim if some intrinsic features of the group are not *explained* by way of the members.

This talk will seem very familiar to those who have encountered the notion of *justification* in other areas of philosophy. In epistemology, for example, we often consider cases in which a person knows one thing *in virtue of* knowing some other(s), say, that I know *Brooklyn is in America* in virtue of my knowing that *Brooklyn is in New York* and *New York is in America*. Likewise, we are accustomed to saying that some class of facts, or propositions, or states of affairs

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<sup>3</sup> See, for example, Cameron, Fine, Schaffer, Sider. Karen Bennett's paper (Karen Bennett, "Construction area (no hard hat required)," *Philosophical Studies* 154, no. 1 (2011)) offers a very helpful comparison of the ontological relations invoked in such accounts.

<sup>4</sup> This is not necessarily to say that *reality* comes in degrees. It is a separate question whether more fundamental objects are more real. Schaffer, for example, thinks the most palatable metaphysic is one in which all extant entities are equally real (Jonathan Schaffer, "Is there a fundamental level?," *Noûs* 37, no. 3 (2003): 498).

<sup>5</sup> Cf. Kit Fine, "The question of realism," *Philosophers' Imprint* 1, no. 2 (2001): 15.

obtains in virtue of some other(s), say, that the mental facts hold in virtue of the physical facts. So, I will use the word *justification* to refer generally to any kind of hierarchical justification, be it ontological, epistemic or otherwise; a two-place relation may be described as *justificatory* where one of the relata obtains *in virtue of* the other. I will try to use the word *ground* more strictly to refer only to *ontological* justification, as above. Notwithstanding this semantic scruple, the locution of *ground* is felicitous in diverse justificatory circumstances—ethics, mind, logic, aesthetics, etc.—and thus clarifying the nature of ground is centrally important to many other philosophical enterprises.

## JUSTIFICATORY REGRESS

Let us consider the most common question of justification, what I call the *first-order* justificatory question.<sup>6</sup> Consider a chain of justification in which *P* justifies *Q*; then, what justifies *P*? The epistemic case is familiar. If *P* is a proposition someone claims to know or believe, then such a question is asking for the reasons one could have for believing *P*, or some knowable fact(s) in virtue of which *P* obtains. The answer to this may be more or less easy to provide, depending on what sort of claim *P* is. If *P* is something like *the radiation around the factory is high*, then our justification for affirming *P* may include some proposition like *P<sub>1</sub>: The NY Times today said that the radiation around the factory is high*. This proposition of course could also be queried, and one would then enumerate the propositions which justify it, which may include a claim that I read the article correctly, and a claim about the past reliability of the NY Times reporting. An especially capable and patient interlocutor may be prepared to go even further, all the way back to some basic kind of claim about the justificatory status of testimony. Likewise, a justificatory chain of just this kind may obtain in the case of *ontological* priority. Suppose the item under consideration is my wooden table, and suppose the table is grounded in that which composes it, namely, its four legs and its top. Plainly, we may then proceed to ask likewise what grounds—what ontologically justifies—*these* items.

These requests for justification are easily iterated; spending any time with an inquisitive child reveals as much! It appears that we may insist on ever deeper justification, burrowing down in the justificatory structure. This dialectical move—the iteration of questions, teetering on the brink of regress—compels us to form some principled theoretical positions about the structure of

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<sup>6</sup> My focus here is on the first-order justificatory regress. There is another, *second-order* regress which I hope to explore in another paper. This second-order regress concerns the *justification of the justifications themselves*: is the grounding relation itself grounded, or is it groundless? If it is grounded, then what could ground it? And if it is groundless, is it thus *fundamental*? My view is that these questions involve a category mistake. The grounding relation is not the sort of thing which *could* stand in grounding relations, since it is a *relation* and not an *entity*; to ask ‘what grounds grounding?’ is to reify the grounding relation, and to posit an additional entity where none exists. Where *A* grounds *B*, the only items in that ontology are *A* and *B*—there is no third item, the *grounding relation*, to be accounted for.

justification. *The nature of this structure is the focus of this paper, and the structure is determined by the features of the justification relation.* How shall we illuminate the nature of the relation? I believe we should attend both to the *intuitive conceptual content* of the relation in familiar cases (e.g., a body grounds its organs), and unfamiliar test cases (e.g., ‘does it make sense for something to be self-grounding?’). We should also attend to the *formal features* typically attributed to the justification relation (e.g., if the grounding relation is irreflexive, is it also necessarily asymmetric?). The most important route for philosophical progress, I believe, is through considering those features of the justification relation which give rise to *justificatory regress*.

#### A BRIEF METHODOLOGICAL ASIDE: REALISM AND RELATA

First, let us note an interesting methodological similarity: when philosophers are confronted with this first-order regress, there is a striking tendency towards realism (and away from skepticism) about the items in question. In the epistemic case, we begin with some datum which we claim to know (e.g. the earth is spherical), and commence the iterative questions (‘in virtue of what do we know *that*?’). But, importantly, these iterations press on us only to provide a principled account of the structure of our knowledge, not to give up the claim that we *have* it. That is, we are not so much concerned with *whether* we know such-and-such, but only *how we could* know such-and-such.<sup>7</sup> When we are presented with arguments which aim to undermine the credibility of sense data or arithmetic, say, our tendency is to remain steadfastly realist about these paradigm cases of knowledge, and seek some way to explain away the difficulties.<sup>8</sup> In the ontological case, this is mirrored in a disposition towards what Ted Sider calls “knee jerk realism,”<sup>9</sup> the sense that the world and much of its contents certainly do exist in some concrete and mind-independent manner. Many metaphysicians,<sup>10</sup> when confronted with the first-order regress (‘and what grounds *that*?’) will not take this question to threaten the claim that the item in question *exists*—only that an account is required stating that in which this item’s existence consists.<sup>11</sup> The realist

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<sup>7</sup> I think this is one good way to understand the problem of induction. Inductive inferences obviously often deliver knowledge—this much is certain. The problem then, is to account for *how* inductive inferences could deliver knowledge; the question is, what is it about inductive inference that it may and often does deliver knowledge?

<sup>8</sup> I enjoy Kelly’s (Thomas Kelly, “Moorean Facts and Belief Revision, or Can the Skeptic Win?,” *Philosophical Perspectives* 19, no. 1 (2005): 179) way of stating this Moorean assumption: “We know a lot. The proposition that *We know a lot* can serve as a fixed point in our inquiry, and we should make adjustments elsewhere as needed in order to hold on to this fundamental commitment. Simply put, we should build the rest of our theory around this fixed point.”

<sup>9</sup> Theodore Sider, *Writing the Book of the World* (Oxford: Oxford University Press, Forthcoming; draft of Jan 17, 2011). 22.

<sup>10</sup> Cf. Theodore Sider, “Ontological realism,” in *Metametaphysics: New Essays on the Foundations of Ontology*, ed. David John Chalmers, David Manley, and Ryan Wasserman (Oxford University Press, 2009), 385.

<sup>11</sup> Cf. Schaffer: “Metaphysics so revived does not bother asking whether properties, meanings, and numbers exist. Of course they do! The question is whether or not they are *fundamental*” (Jonathan

assumption may be understood like this: *though our inquiry begins with skeptical questions, it need not deliver skeptical answers*. Our philosophical inclinations testify to a “post-Moorean modesty,”<sup>12</sup> and it is significant that there are so few defenders of skepticism in metaphysics or epistemology today.

Second, I have so far been speaking loosely about one thing (of any kind) grounding another, but some metaphysicians are far more particular about the sorts of things to which the grounding relation could apply. For example, some claim that the grounding relation holds between properties, like determinables and determinates. Others will argue that it is *propositions* which ground each other, and yet others will claim that *concrete objects* may also stand in grounding relations. However, the more general assumption of *stratification* (the layered view of reality) is common among a broad range of positions, and so I may remain neutral here about the types of items over which the grounding relation ranges. It seems to me that whatever the relata of the grounding relation might be, the *justificatory structure of ground* remains quite the same. When I say, for example, that *an apple’s redness is grounded in its being scarlet*, and say later that *the proposition ‘it is snowing’ is grounded in the fact that it is snowing*, I have used the term *ground* in quite the same sense. Ground captures the way one item metaphysically depends on another. So, I will leave it open for now precisely which items may appear as the relata of grounding: my arguments here touch all those theses which posit a *justificatory hierarchy*.

## FOUNDATIONALISM

There are several competing accounts of the correct response to the prospect of justificatory regress. Some philosophers will think that the chain must terminate in a final *foundation*—some ultimate or axiomatic item which neither has nor requires any justification in the way that other items do. Others will think that these justificatory chains could (or must) go on infinitely, proceeding to ever more basic justifications. Some may countenance a sort of circularity, by which an item may be (part of) its own justification. I am partial to metaphysical Foundationalism, and I will offer some reasons to think that it is the only satisfactory account of ontological dependence. However, my general project here is to offer useful arguments and theoretical resources to *all* the disputants, in the interest of illuminating the nature of metaphysical structure. I begin by mounting the *intuitive* cases for different theories of justificatory structure; and, with its impressive pedigree in epistemology, Foundationalism is a highly compelling response to the looming regress.

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Schaffer, “On what grounds what,” in *Metametaphysics: New Essays on the Foundations of Ontology*, ed. David Manley, David J. Chalmers, and Ryan Wasserman (Oxford University Press, 2009), 347).

<sup>12</sup> Fine, “The question of realism,” 2.

## EVOKING THE INTUITION

Consider this typical assumption of the justificatory picture: there is a hierarchy of levels, where *posterior* depends on *prior*. Such a picture seems ably captured in Foundationalist terms, according to which the superstructure is supported by its foundation. Rescher develops this idiom, noting that in the epistemic case “the whole body of knowledge obtains the layered makeup reminiscent of geological stratification: a bedrock of basic theses surmounted by layer after layer of derived theses, some closer and some further removed from the bedrock.”<sup>13</sup> The regress must be halted in some bedrock, the Foundationalist says. And, if one accepts the building analogy, then Foundationalism—the requirement for a firm base layer on which further layers rest—is the only account which is satisfactory.

Foundationalism in epistemology recommends a hierarchy of justificatory levels. But Foundationalism is distinguished by its commitment to a particular claim *about* these levels—namely, that there is some level below which we may not descend. We may similarly wonder whether *ontological* priority chains require some axiomatic terminus. Could chains of ontological priority regress *without limit* to ever more fundamental entities, or must they find some absolutely fundamental ground? We join Schaffer in asking, “is there a fundamental level?”<sup>14</sup> Yes, the Foundationalists argue. Our intuitions to this metaphysical case, I think, are strikingly similar to their counterparts in epistemology, that there must be some *basic source of justification* on which the posterior levels depend. Schaffer sums up this intuition in the pithy claim that, in the absence of this bedrock justification, “[b]eing would be infinitely deferred, never achieved.”<sup>15</sup> This intuition corresponds to the thesis that ontological chains are *Well-Founded*.<sup>16</sup> Well-Foundedness is a set-theoretic property of relations which, put simply, requires that any chain in the relation has a *minimal* element. For our purposes, we shall say that a justification relation *J* is Well-Founded where all justification/priority chains in *J* terminate (i.e., they have some element which is an ultimate terminus, a final limit); Well-Foundedness is not satisfied otherwise.<sup>17</sup>

The Foundationalist’s central intuition is this: if the posterior layers are *built up* out of the prior layers, then the chain of being needs to have a fixed beginning point, if it is to get started at all. From this perspective, justification is all about *what you begin with*, and how the latter levels arise from that basic level. The building metaphor, so prevalent in epistemology, is easily carried

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<sup>13</sup> Nicholas Rescher, *Epistemology: an introduction to the theory of knowledge*, SUNY series in philosophy (Albany: State University of New York, 2003). 114.

<sup>14</sup> Schaffer, “Is there a fundamental level?”

<sup>15</sup> Schaffer, “Monism: The Priority of the Whole,” 62. Schaffer elsewhere follows this up with a further helpful analogy: “By way of analogy, consider the parable of all God would need to do. Without ontologically basic entities, there would be no sense to such a parable. What would God need to do, to create a baseless world? Where could He begin?” (Schaffer, *Monism* 2009, §3.1)

<sup>16</sup> *Ibid.*, 37.

<sup>17</sup> So for the relation to be non-Well-Founded it is sufficient that there is at least *one* chain which lacks a limit (i.e., it is not necessary that *all* of the chains lack a limit).

through into the metaphysical domain: the edifice is stable *just because it has a firm foundation*. As Cameron puts it, “there must be a metaphysical ground, a realm of ontologically independent objects which provide the *ultimate* ontological basis for all the ontologically dependent entities, and a realm of basic facts which provide the *ultimate* metaphysical grounding for all the derivative facts.”<sup>18</sup>

#### PUTTING THE FOUNDATIONALIST INTUITION TO WORK

Having introduced the Foundationalist intuition in metaphysics, let us see what disputes may arise and how they might usefully be argued, leaning on common insights from epistemology where possible. If the Foundationalist intuition is plausible, then it may be used to defend and arbitrate between certain metaphysical positions.

#### MONISM

Jonathan Schaffer agrees that the world is subject to an order of ontological priority. He argues that it would be desirable—perhaps even indispensable—for any metaphysical theory to cohere with the Foundationalist principle and deliver a *Well-Founded* ontological order. He suggests that his thesis, *Priority Monism*, achieves this in a way which its competitors cannot.<sup>19</sup> According to Schaffer (and his historical precursors, like Aristotle), grounding has a *mereological* character; that is, we may sensibly ask grounding questions in terms of *parts and wholes*. We may say, for example, that the organs of the body are grounded in the whole organism, or the puddle of water is grounded in the H<sub>2</sub>O molecules which compose it. Those who accept the mereological nature of ground are divided according to where they locate ultimate priority—in the parts, or in the whole. Schaffer’s Monistic claim is distinctive in contemporary metaphysics, in that it maintains that there is a *single fundamental entity*, the cosmos (the maximal concrete whole). There are other entities, to be sure—this is not *substance* monism—but Priority Monism maintains that these other entities are all parts of, and thus ontologically posterior to, the one whole. The Pluralist denies this: for him, there are a plurality of *fundamental* entities. Schaffer suggests that only one version of Pluralism is a serious contender, namely, Atomistic Pluralism. While the Monist believes that the ultimate *whole* is fundamental, the Atomistic Pluralist believes that priority vests in the ultimate *parts* (the simples)—those items which admit of no further parts.

Schaffer offers this apparently decisive argument against his Pluralist opponent: Pluralism is incompatible with the possibility of gunk (matter every part of which has proper parts).

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<sup>18</sup> Ross P. Cameron, “Turtles all the way down: regress, priority and fundamentality,” *The Philosophical Quarterly* 58, no. 230 (2008): 8, emphasis mine.

<sup>19</sup> Schaffer, “Monism: The Priority of the Whole,” 37.

### Schaffer's Argument for Monism from Gunk

1. Either the ultimate parts must be basic at all worlds, or the ultimate whole must be basic at all worlds.
2. There are gunky worlds without ultimate parts (and hence no ultimate parts to be basic at those worlds).

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*Therefore, the ultimate whole must be basic at all worlds.*<sup>20</sup>

There are many interesting ways to approach this argument. One may question whether gunk is genuinely possible, and propose tests for whether it is conceivable or coherent. One may question whether the claims in the argument must be held with strong modal force: the Monist here assumes (as I do throughout this paper) that it is a matter of *metaphysical necessity* which justificatory structure obtains, but this may also be doubted. For now, however, I wish to grant premise 2 and the modal necessity claims in the argument, and I want to focus on the role of *Well-Foundedness* in this dialectic.

The assumption of a *Foundationalist justificatory structure* is crucial to this argument. In a gunky world, there are no ultimate parts—no simples. And if there are no simples, then the Atomist Pluralist lacks an ontological base. In the absence of this fundamental base, Pluralism must be false in that gunky world. If Pluralism is false in that world, then it is false that Pluralism is true at all worlds. Having dispensed with the first disjunct of premise 1, we must affirm the remaining alternative: that Priority Monism is true at all worlds.

To see that the Well-Foundedness of ontological chains is an essential presupposition of the Monist's attack, consider how the argument would proceed *without* that assumption. For example, if the Pluralist rejected Well-Foundedness, then he may accommodate gunky worlds: call this Pluralism\*, which holds simply that objects are grounded by their parts. In a gunky world, each object is grounded by *its* parts, and those parts each have parts which ground *them*, and so on. So, for this Pluralist\*, there is no longer any worry that some object is left unjustified, since *for every object there will be some parts which ground it*. And, our Pluralist\* may ask, what more could one want from a theory of justification? Indeed, it appears that the Pluralist can answer every 'in virtue of what?' question that his opponent may present—provided there were an *infinite* time to answer!

Later, I will say more about grounding in infinitary structures. The important point for our purposes now is that this debate between the Monist and the Pluralist may well turn on how we answer the first-order question of justificatory structure. If there are good reasons to insist that ontological priority be Well-Founded, then Schaffer's argument will indeed vitiate his Pluralist opponent. However, if Infinitism is plausible (or necessary!), then the Pluralist may reject Well-Foundedness, insisting that limitless chains are consistent with his justificatory system.

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<sup>20</sup> Jonathan Schaffer, "Monism," in *Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (2008), §3.2.4.



However, I am inclined to sustain the Foundationalist claim—that ontological priority chains must terminate in a Well-Founded base—and I wish to consider where this assumption may lead us. Does this entail, then, that we are bound to be Priority Monists? This will, I think, come down to the cogency of Schaffer’s argument for the claim that ontological priority tracks the mereological relation of part and whole, and that Monism is to be preferred to Pluralism. Certainly, Monism is able to cope with a wide variety of metaphysically troublesome cases. The resilience of Monism is largely due to the Monist’s tenet that in every world the One Whole (the cosmos) is fundamental. The One Whole is always the maximal mereological sum; so, where there is a world, there is a whole (and it is fundamental). Consequently, Schaffer argues, the Monist can ensure that Well-Foundedness is preserved at all worlds. This last point ensures that the Pluralist cannot successfully mount a parallel argument against Monism from the possibility of *junk* (matter every part of which is a proper part of something else). Monism is asymmetrically victorious over Pluralism, since not all worlds have ultimate parts, but every world has an ultimate whole.<sup>21</sup>

#### DETERMINATION

If one is tempted by metaphysical Foundationalism, Monism will be an attractive theory. However, I will very briefly sketch an alternative vision I think promising, *Determination*, which similarly preserves the Foundationalist intuition. Consider the familiar *determinable-determinate* relation which holds between properties, and which is typified by the following examples: *scarlet* determines *red*, *red* determines *colored*; *triangle* is the determinable of the determinate *equilateral triangle*. Determinates are *ways of being* their determinables: *navy* is a way of being *blue*, which is a way of being *colored*. Clearly these chains of Determination are transitive. They are also asymmetric: if blue determines colored, colored does not determine blue. Consequently, determinate properties *necessitate the instantiation* of all those determinables under which they fall, just as something’s being blue *entails* it is colored. Some properties may be precisified no further: these are super-determinate properties. For example, the color of the stripes of the American flag are not just red *simpliciter*; they are some perfectly determinate shade of red—call it ‘Flag-red.’ In general, every instantiated determinable property must be instantiated to the super-determinate level.

My intuition is that the world is not vague, but is perfectly precise. While some of our concepts and linguistic items are vague, imprecise, or indeterminate, *the world itself*, by contrast, is perfectly determinate. In other words, although many artificial terms (e.g. bald, heap, cold) are fuzzy, I deny the possibility of *ontological* indeterminacy. It is not the world, but only our *representations* of the world which may be vague. I believe that this thesis—that the world is

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<sup>21</sup> This asymmetry depends on certain principles of classical mereology. For a series of compelling arguments for this Monistic vision, see Schaffer’s defense in *Monism: The Priority of the Whole* and his *Monism* entry in the Stanford Encyclopedia of Philosophy.

perfectly determinate—is best understood as the truism of determinable-determinate properties: that every instantiated determinable property must be instantiated to the *super-determinate* level.

So, we have the plausible claims that that the world is perfectly determinate (there is no ontological indeterminacy), and that this just consists in the instantiation of super-determinate properties. How does this relate to ontological justification? The super-determinate properties are *fundamental*, and they do the work of *grounding*. The super-determinate properties necessitate all the determinable properties under which they fall; consequently, super-determinate properties account for the *complete* contents of the world—a desirable feature of the fundamentalia.

What of the *Foundationalist* assumption? Ross Cameron suggests that it is exceedingly difficult to offer an argument in support of the intuition of Well-Foundedness. He concludes that “the best reason to believe it is that theories that do not violate it are theoretically beneficial.”<sup>22</sup> I consider this a disappointing result, but I believe that my thesis here may offer some improvement.

It is a consequence of my view that the instantiated super-determinate properties form a Well-Founded ontological base, since *ex hypothesi* such properties cannot be determined any further. My thesis has the benefit that it gives us an argument *for* Well-Foundedness rather than an argument *from* it (as the argument from gunk proceeds). In order for the argument from gunk to succeed, one needed first to accept Well-Foundedness. In contrast, if one accepts my claims that the instantiated properties are instantiated to the super-determinate level (there is no ontic indeterminacy), and that super-determinate properties are fundamental, then one must accept *as a conclusion* that ontological chains are Well-Founded. By including a superdeterminate property in determinable-determinate chain, one has *ipso facto* included a hard limit (at the bottom end), and thus secured Well-Foundedness. This is a desirable result for those seeking some metaphysical reasons to support their Foundationalist intuitions.

Moreover, my thesis is immune to gunk-like arguments: while one can conceive of a world with gunk, one cannot conceive of a world with *ontic indeterminacy*. Indeed, there is good reason to believe that ontic indeterminacy is *logically* impossible: it may outrun even metaphysical or conceptual possibility. The Evans/Salmon argument—and an excellent recent contribution from Katherine Hawley—makes use of the rules of identity (that a thing is always self-identical) and Leibniz’ laws (identical objects have all their properties in common), to demonstrate that *ontic indeterminacy is incoherent*.<sup>23</sup> Here is an abbreviated proof: suppose it is indeterminate whether

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<sup>22</sup> Cameron, “Turtles all the way down: regress, priority and fundamentality,” 14

<sup>23</sup> See Nathan Salmon, *Reference and Essence* (Princeton: Princeton University Press, 1981), , and Gareth Evans, “Can there be vague objects?,” *Analysis* 38, no. 4 (1978) Hawley’s argument proceeds more directly, but similarly concludes that “whenever there is a respect in which it is indeterminate whether two objects

object *A* is identical to object *B*. Then *A* has the property of [being such that it is indeterminate whether it (*A*) is identical to *B*]. But *B* definitely *lacks* this property, since it is determinate that *B* is identical to *B*. But if two objects differ with respect to their properties, then they are non-identical (by Leibniz' law). So, contradicting our assumption, *A* is not identical to *B*. It is plausible that this argument is sound, and that the moving parts (Leibniz law, rules of identity) are fixed across *logically* possible worlds. Consequently, my thesis is very modally robust: if there are no logically possible worlds which permit ontic indeterminacy, then my thesis will always deliver a Well-Founded justificatory base in the super-determinate properties of the world in question.

My presentation of these two Foundationalist views is rough, and many avenues of further defense and objection have not been explored; but my intention here is to provide an idea of how disputes about justificatory structure might fruitfully proceed. It is common to hear criticism that metaphysical discourse is just so many *merely verbal* disputes. I think that this view is generally mistaken, and I believe my presentation of the two positions in Foundationalism bears this out. In the debate between the Monist and the Determinator, the parties really are *at odds*: they have competing and jointly inconsistent accounts, and aim at the same goal, namely, the correct analysis of metaphysical justification. In discussing their arguments, I've drawn attention to the theoretical tools at their disposal. We may commence by evincing *intuitions* about the items in question (e.g., the intuition that where some things compose another thing, it is the parts which are prior to the whole); where these intuitions do not settle the matter, we invoke *theoretical* notions (e.g., must justificatory claims hold across all logically possible worlds?); and sometimes the *formal* articulations of these structures can be instructive (e.g., if Monism requires irreflexivity of justification, then does nothing justify the cosmos?). These tools recommend some perfectly clear-cut criteria according to which one could assess the strength of the thesis. For example, if Monism can account for the existence of regular objects, but Determination cannot, then—on the assumption that such an account is desirable—the Monist unequivocally has the upper hand on that score. Importantly, the interlocutors are not simply talking past one another as in a verbal dispute. And, as we have seen, the metaphysician enjoys a variety of instructive comparisons from Epistemology, in which such disputes about the structure of justification have an illustrious history and a rich set of theoretical resources. But perhaps not all these epistemic theses prove valuable in the metaphysical domain; for example, what should we make of metaphysical *Coherentism*?

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differ, then there is a respect in which they differ, and it is therefore determinate that the two objects are not identical" (Katherine Hawley, *How Things Persist* (Oxford: Oxford University Press, 2004). 120).

## COHERENTISM

Despite its intuitive clout, Foundationalism in epistemology has had its detractors. Among the objections was the idea that our knowledge may be less linear and more *holistic*. This view issues in a radical change in the justificatory structure: *it permits (a measure of) circularity*. To be more precise, let us say that a justificatory chain is circular just if an item in that chain appears in its own justificatory ancestry. Granting its plausibility in epistemology, we may still wonder about the application of this thesis to the ontological case. However, to the best of my knowledge, metaphysical Coherentism is not a position which has yet been developed; so, I will take this opportunity to construct a plausible account. Having done so, I will inquire whether Coherentism, with its admissibility of circular or looping structures, is a tenable option to capture metaphysical *priority*.

## REFLEXIVITY IN THE CHAIN

It is important first to distinguish two kinds of Coherentism, what I will call the ‘Reflexive’ view and the ‘Web’ view. The Reflexive view is the one more naturally associated with metaphysics than with epistemology, and arises as follows. Various philosophers—Descartes, Leibniz, Spinoza, and Aquinas, among others—have entertained chains of metaphysical justification in much the way we are considering them here. Such chains emerge clearly out of the Principle of Sufficient Reason; in Descartes’ words, “concerning every existing thing it is possible to ask what is the cause [or reason] of its existence.”<sup>24</sup> Clearly, answering this question will deliver a chain of ontological justification. If one is of a theistic persuasion, then God will be the last member of that chain. However, notice with Descartes that the PSR so stated is quantificationally *unrestricted*; even when we reach the end of the chain we may very well ask, ‘what is the reason of *God’s* existence?’ To this, it has been supposed by many that *God himself* is the answer. In Hume’s *Dialogues*, for example, the theist Demea says that God is “a necessarily existent being, who carries the REASON of his existence in himself; and who cannot be supposed not to exist without an express contradiction.”<sup>25</sup> This claim may be put in several different ways—God is self-explanatory, God is self-sufficient, God is his own ground—all of which preserve the intended meaning.

How shall we formalize this structure? Owing to the PSR, this thesis gives rise to ontological chains just in the way the Foundationalist supposed: items require justification and appear in a linear hierarchy. But we must incorporate the modification that the bottom-most node (God, the cosmos, etc.) is self-grounding. Strictly, this claim is different from the *Foundationalist* claim that

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<sup>24</sup> René Descartes, *The Philosophical Writings of Descartes*, trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch, vol. 2 (Cambridge: Cambridge University Press, 1984). Second Replies, VII:165

<sup>25</sup> David Hume, “Dialogues Concerning Natural Religion,” in *Dialogues Concerning Natural Religion and Other Writings*, ed. Dorothy Coleman (Cambridge: Cambridge University Press, 2007), 9.3 Capital letters in the original.

*nothing justifies God* (i.e., God is absolutely fundamental, or bedrock). We might say that self-justification results in a tight little loop at the bottom of the justificatory ladder. I call this view ‘Reflexive’ just because the node at the bottom of the justificatory structure is a reflexive instance ( $Jxx$ ) in the proposed justification relation  $J$ .

However, there are several reasons to reject this structure. First, what motivates the thesis that an entity is *self-grounding*? Descartes offers an answer when he explains why we may ask even of God what justifies his existence: “This question may even be asked concerning God, not because he needs any cause in order to exist, but because the immensity of his nature is the cause or reason why he needs no cause in order to exist.”<sup>26</sup> As I understand Descartes, the suggestion is that it is sensible to ask *what justifies God*, but that our answer must make reference *back to God again*, since God’s nature is required to explain that he has no cause of existence. However, I do not think that this requires a loop in the structure; in particular, why is there a loop rather than a simpler, *non-looping* terminus? Instead of thinking of God (or the cosmos) as self-justifying, why not think of him as *absolutely fundamental*? On this proposed revision, God would depend on nothing further (nor even on himself)—though other things may well depend on him. I think this generally preserves Descartes’ view better than the looping structure does; it seems to me that there is a *distinct sense of justification* at work when Descartes claims that God is *self-justifying*, and pressing on this point reveals several absurdities in the bottom-loop view. For example, while it may be rhetorically appealing to say that ‘God is his own source of justification,’ it is quite unintelligible to suggest that God is *prior* to himself (or that anything at all is prior to itself). Moreover, if God *were* prior to himself, then he would presumably be *posterior* to himself also, which is similarly absurd. Lastly, if God justified God in the *metaphysical* sense we have been discussing—specifically,  $J(God_2, God_1)$ —then Descartes would be remiss in failing to ask and answer what justifies  $God_2$ . But this issue is averted successfully if we interpret Descartes (and Leibniz, and whoever may be saddled with a worrisome loop at the bottom of the structure) to be really *Foundationalists* with a single ultimately fundamental node at the bedrock; and it is my suspicion that this revision will preserve the theorist’s original thesis better than the looping structure anyhow.

## THE WEB OF EXISTENCE

Perhaps, with a few interpretive maneuvers, we may set aside the Reflexive looping structure as really a *Foundationalist* structure; thus, it is not really a Coherentist view. The big loop view, on the other hand, is more plainly Coherentist in nature. It is the one most naturally associated with the ‘web of belief’: it is that there are a multitude of nodes which are connected in diverse directions, some in clusters, some like branches of a tree. And, depending on the formal relations between the nodes, it is possible that a node  $N$  is justified (in part or in whole) by a justificatory series  $\phi_1, \phi_2, \dots, \phi_n$  of which  $N$  is itself a member. This model may seem appropriate to

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<sup>26</sup> Descartes, *The Philosophical Writings of Descartes*, 2: Second Replies, VII:165

epistemology, in which the network of intra-doxastic justification is often highly complex. Many of my beliefs—that *analog clock displays are prettier than digital ones*, for example—will be justified because of how it figures in a vast array of items near and far in my belief store, perhaps with no uniform *direction* of justification between beliefs, and which might well loop back around onto the belief itself, or one of its equivalents.

The proponent of this brand of Coherentism in epistemology suggests that justification is conferred upon a belief in virtue of its place in a coherent network. A salient objection emerges: Coherence is too cheap. That beliefs *cohere* is insufficient for *justification* because coherent webs may be ‘free-floating’ and untethered to the truth. For example, we can well imagine someone in the grip of an *utterly false but perfectly coherent* dogma, and we would not wish to say that coherence confers justification upon those beliefs. Now, the Coherentist has several avenues of reply. Firstly, he may suggest that the objection attacks a straw man: the Coherentist may insist he has a much more subtle view, and that coherence among beliefs is just *one among many* requirements for justification; another requirement is that the beliefs be *tethered* to truth in some way, perhaps through the inclusion of certain basic beliefs. However, in so making his view more palatable, the Coherentist will have given up on the distinctive core of the Coherentist structure! If he requires a direct attachment to some basic source of justification, he will have *tacitly endorsed Foundationalism* in all the respects with which we are concerned, both in the epistemic and metaphysical cases.

Alternatively, the Coherentist may bite the bullet and insist that the person in the grip of a dogma *is really justified* in his belief after all, and that his justification *is really due to the coherence* among his beliefs. This Coherentist may take the view that coherence is sufficient for justification, but that justification bears no necessary or sufficient connection to truth. Perhaps this is a legitimate epistemic position. It may be philosophically plausible to permit free-floating webs of belief which are coherent and thus justified: after all, coherence *does* seem to matter (at least on a *pro tanto* basis) for a belief’s justification—and we may suppose this is quite independent of whether the belief is true or not. But could the metaphysician permit this Coherentist structure? Could there be webs of *metaphysical* justification? Interestingly, the objection concerning a free-floating web of justification does not arise for the metaphysical Coherentist. Unlike the epistemic case, metaphysical justification bears a *necessary* connection to how things are in *reality*. Metaphysical justification governs the order of being, or existence, and holds among the basic constituents of reality—whatever they happen to be. Consequently, it is not plausible that the web of metaphysical justification could obtain at a remove from reality in the way that it may in the epistemic case.

This big loop version of metaphysical Coherentism is better off than its epistemic counterpart—at least as far as the ‘free-floating web’ objection is concerned. What is more, this web-like structure may also avoid the earlier objection, namely, that the only plausible version of

Coherentism has a tether to the basic source of justification and so is really Foundationalism in disguise. For it seems plausible to suppose that *reality is constituted by this web*; it is not as though the metaphysical web needs to attach to some *source* of justification (like belief needed to attach to truth), since in the metaphysical case there is *no possible gap* between the items in the web and reality. So we may further develop this apparently attractive Coherentist picture: the items in the metaphysical web just are the constituents of reality. They form a complex entangled system, containing a collection of nodes and sub-networks—much like a neural network. These parts support each other through finely-tuned justificatory relations which concern the *coherence* of the part with the system.

This view now has some intuitive purchase in the metaphysical domain, but does it provide a satisfactory analysis of metaphysical *justification*? I believe that answering now would be premature, since we have not yet specified what the details of the *justification relation* are, so I will now try to devise a plausible position. The Coherentist vision just sketched indicates a complex system in which not one but a *multitude of independent* justificatory relations hold between the nodes. On this view, there are several justificatory relations: for example, we may imagine that some relations offer straightforward directional support from nodes A to B, others hold only between groups of nodes, others may hold between a node and itself, and so on. They are *independent* relations, because their logical structures are quite distinct: some of them are asymmetric, others are reflexive, others are anti-transitive, and so on. All of these are *justification* relations because they concern the way that items in the network ground or support each other. And, this Coherentist supposes, we should expect there to be many such relations since there are many ways in which one thing may support another: some things rest upon others, some prop others up, some offer bracing for others, some lie between others, some glue groups together, and so on. As with these justification relations (propping, bracing, gluing etc.), so in metaphysics there are a *variety* of distinct justification relations, each of which contributes to the coherence of the system.

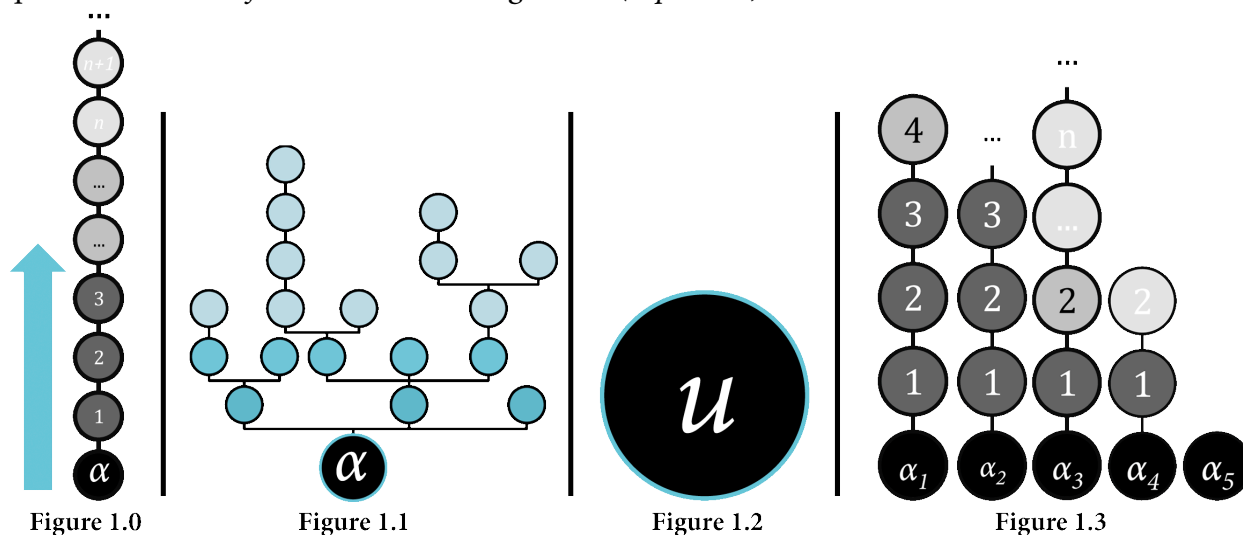
While this picture grows increasingly rich and colorful, it is available for a detractor to object as follows: ‘I see very well why coherence matters to belief, but what on earth does coherence have to do with *existence*?’ I believe that the Coherentist may well learn something from the Priority Monist here (and, perhaps, vice versa), since the Monist is expert at explicating the theoretical virtues of a *unified whole*. Further, the Coherentist may adduce evidence concerning the finely-tuned coherence of quantum entanglement that obtains in a complex physical system. The detractor might object then that a multitude of relations is *theoretically extravagant*, that while we may speak colloquially about a variety of support structures between objects, we demand a more exacting and parsimonious account from our metaphysics. Again the Coherentist could learn from the Monist: the Monist likewise wishes to account for various relations at the mid-sized level (where particles *compose* a table, for example) but the Monist insists that a *single* grounding relation governs ontological priority, and this relation is mereological in character.

## STRUCTURAL OBJECTIONS: CIRCLES AND CHAINS

Despite these initial concerns, I think that this view has quite a lot to recommend it, and I would welcome a more precisely developed account. However, it seems that any version of *real* Coherentism (i.e., not Foundationalism in disguise) will be unattractive to those who believe that metaphysical justification is *never circular*, and is *strictly hierarchical*. The Coherentist justificatory structure, however one specifies its details, is distinguished by its admission of circular chains. The Coherentist may maintain that he certainly has not given up on metaphysical justification; he has only given it an alternative interpretation. On his model, each item in the justificatory chain obtains *in virtue of* those from which it derives, and so may truly be said to *depend* on them. The web of existence exhibits circles of mutual dependency, and coherence among the whole.

However, those with Foundationalist or Infinitist leanings will find this feature unacceptable: to their minds, it will be a betrayal of the intrinsically *hierarchical* nature of ontological priority. In their view, when  $Jxy$ ,  $x$  is determinately prior to  $y$ , and  $x$  has a greater status than  $y$  in the ontological hierarchy. However, if we consider a circular justificatory chain, in what sense could we maintain that any one item is really *prior* to another? Circles do not admit of superior/inferior nodes—at least, not without additional constructions or interpretations.

Let us illustrate these structures to bring out their features. I share the Foundationalist intuition that a satisfactory picture of metaphysical structure should be able to answer the following questions: *What is fundamental? What grounds (is prior to) what?*

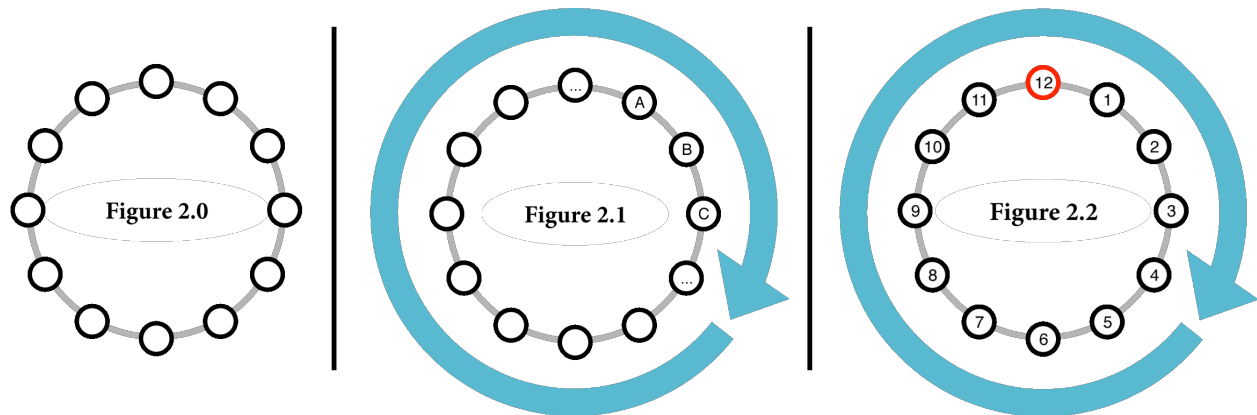


In a Foundationalist structure, such propositions are easy to express with relatively little technical apparatus (a matter to which I shall return). Consider Figure 1.0, a putative Foundationalist structure consisting of a series of nodes arranged hierarchically as in a vertical chain. What *interpretation* shall we give this structure? The node  $\alpha$  is unambiguously special: it is the only node which is a fixed *terminus*—it is not followed by any further nodes. And, for the



Foundationalist, this is the answer to the first question: where  $\alpha$  is an  $x$  such that there is no  $y$  which grounds  $x$ ,  $\alpha$  is *fundamental*. The Foundationalist can answer the second question also:  $x$  grounds  $y$  just if  $x$  is closer to  $\alpha$  than  $y$ . Lastly, the arrow indicates the *direction* of justification. Note that the Foundationalist can deploy this simple model in a variety of distinct cases. For example, the model captures the world in which there is an abundant superstructure (Figure 1.1), a sparse Priority Monist world with the cosmos as the only fundamental entity (Figure 1.2), and the Atomist Pluralist world with a multitude of fundamental simples (Figure 1.3).

However, the Coherentist's circular structures are expressively bankrupt when compared with the Foundationalist's linear ordering. To illustrate, consider a circular structure with twelve nodes (Figure 2.0). How could we know which node is fundamental? And how could we know which items ground which? The answers are not clear. As it stands, the circular structure gives us no way to distinguish some node from any other; consequently, there is no way to distinguish *prior* from *posterior*, and we have a flat topology. Confirming this, we may observe that the circle in Figure A is *isomorphic* with any of its *rotations*. That is, we could rotate the structure (like a Ferris wheel), and preserve all its existing structural relations. (In this regard, we note that a Well-Founded hierarchy has no troublesome isomorphisms—at least, none of this sort.) Moreover, it does not help the Coherentist to include a *direction* of dependence, as in Figure 2.1. The Coherentist may have wanted to hold that 'A is prior to B just in case A is *directionally prior* to B.' But this will not do, since the arrow loops around on itself and we have no fixed point of comparison. Consequently, starting at A and following the arrow, we may say that A is *prior to B*. But starting at B, we should say that B is *prior to A*! We are also led to the undesirable (because unintelligible) consequence that A is prior to A.



What could the Coherentist do to get *priority* and *fundamentality* into the circular structure? Since he was troubled by a lack of a *fixed point* from which to make comparisons in a circle, perhaps he could employ the familiar *clock face* as his model (Figure 2.2). Helpfully, this model gives us a *direction* of priority (clockwise) and it also tells us unambiguously which items are prior to which. However, it does so at the expense of being genuinely circular. Suppose that the Coherentist constructs his model by applying numbers to the nodes as shown, and he stipulates

that 12 is the point from which comparisons are to be made: we may imagine a clock being wound up and then started, commencing at 12. Then, on this model, the Coherentist will say that 12 is *fundamental* because there are no nodes prior to 12. He will also be able to say that 2 is *prior* to 3 because 2 is closer to 12 than 3 is to 12. This is precisely what we want—but only because the Coherentist has not so subtly disguised a *Foundationalist* structure as a circular one. By commencing at a *fixed terminus*, the chain is not so much a circle as a disconnected *helix*, a coiled spring, which—when straightened out—reveals a Well-Founded linear order.

*Priority* is an essentially important metaphysical notion, the Foundationalist will insist. Some items are prior to others—say, this whole is prior to its parts, those molecules are prior to that puddle, I am prior to my singleton set—and any account of metaphysical justification must preserve this status. It would not be acceptable if an account neglected or inverted these priority relations. However, a web of existence, if it admits circular structures, is incompatible with the hierarchy of ontological priority.

The objection rests on a particular view of reality. If you share the intuition that being or existence is stratified, then you will desire a metaphysical account which preserves this ordering. This will be especially true if you think that the items in the chain have different *degrees of reality*—say, where the rock is less real than the molecules which compose it, which in turn are less real than the fundamental particles which compose those molecules. In this regard, I share Schaffer's inclination to be permissive about the *reality* of the "abundant realm of derivative entities,"<sup>27</sup> allowing that all existent items are equally real. Nevertheless, I maintain that not all items are equally *fundamental*, and many will share this view. Consequently, insofar as circular structures cannot make it perspicuous where priority vests (since they obscure which items are prior to which other items), Coherentism is an inadequate model of metaphysical justification.

## INFINITISM

I provided some reasons to regret that the Coherentist's circular structures cannot preserve metaphysical *priority* relations. But Foundationalism is not the only thesis which delivers a hierarchical order. *Infinitism* does too: in an infinite hierarchical sequence of non-repeating items, it is perfectly determinate whether an item is prior to any other. Nevertheless, Infinitism is often overlooked (or positively frowned upon!) as a viable option in epistemology. It seems to me that many criticisms of Infinitism are misplaced, since they fail to apprehend its actual justificatory structure. What is distinctive about Infinitism is its *rejection of Well-Foundedness*, and it is this on which I will focus, clarifying latent ambiguities where possible.

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<sup>27</sup> Schaffer, "On what grounds what," 353.

## REMOVING THE AMBIGUITIES

What does it mean to say that *x is infinite*, or that *this is an infinite series*? Are all cases of infinite series cases of infinite *regress*? There are a regrettable number of ambiguities among these terms, which have led to a general mistrust of the infinite. But really there are many *virtuous* regresses, and more agreement with the Infinitist than it may seem. For starters, Foundationalism is not opposed to Infinitism in all its guises. For example, it seems a Foundationalist may well allow for certain kinds of infinities in the justificatory structure. To be precise, the Foundationalist insists only that chains of justification must *ultimately terminate*, usually in some item which is the source of the justification. This rules out cases in which there is a *limitless* series of justificatory levels *going down*; this would violate *Well-Foundedness*. It is the presence of this hard *limit* at the bottom of the structure which is crucial.

As far as the Foundationalist is concerned, this does not rule out infinities *going up*, nor infinities *in between*. Here is one way this may obtain in the epistemic case, inspired by John Turri's interesting example.<sup>28</sup> Suppose I know that *it is 5pm* since I checked my watch recently and it showed the time as 5pm. Suppose furthermore that this belief is acquired in a way which satisfies Foundationalist criteria (say, that the visual experience of the watch is epistemically basic). Then, (assuming that there are an infinity of points in time between any given points in time), it seems that I am in a position to know an infinitude of facts of the kind *it is after 4:00pm, it is after 4:01pm*, and so on. This is a case of infinities *going up*—arising as an abundant superstructure in virtue of some fundamental item. It has been supposed that a true proposition  $\phi$  grounds the disjunctive truth  $(\phi \vee \psi)$ . Clearly, this produces an infinitely expansive structure emanating upwards—and yet this is perfectly consistent with Foundationalism if it has a bottom limit included.

Similarly, the Foundationalist could countenance an infinity of levels in between two fixed outer limits. It becomes useful to consider the real numbers and the number line. It is true that there are an infinity of real numbers between 0 and 1. But the important issue for our purposes is not whether there is an infinity of justificatory items, but whether that infinity is *bounded*. Put differently, we may say that the Foundationalist insists on a square left bracket—for example,  $[0,1)$ —but that anything else may be varied, and so there may be an infinite number of items in a Foundationalist structure.

## STATING THE THESIS: LOGIC AND MODALITY

Could there be turtles all the way down, each level of support propped up by some further level *ad infinitum*? The Infinitist believes so. Consequently, there is no privileged bottom layer; as Schaffer puts it, “[T]he most striking feature of an infinite descent is that no level is special.”<sup>29</sup> In

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<sup>28</sup> John Turri, "On the regress argument for infinitism," *Synthese* 166, no. 1 (2009): 163.

<sup>29</sup> Schaffer, "Is there a fundamental level?," 512-13.

fact, the Infinitist believes that this feature of his system—that there is no privileged bedrock level—is one of his greatest virtues, and the Foundationalist's greatest vice.

From some perspective, infinite descent is simpler and so more intuitive than Foundationalism. Suppose we are liberating Russian babushka dolls from their shells, each one smaller than the last, thousands and thousands of dolls deep (this doll is covered by that doll, which is covered by that doll, which is covered by that doll, which...). It would be exceedingly *odd* if we were suddenly to come across a doll which did *not* house a further doll: this might be like the feeling we would have when, after many years and many inductive inferences, the sun did not rise that day. Finding this smallest doll would be a jarring interruption of an otherwise mathematically pleasing continuum. Moreover, the continuation of the series would make for a *simpler* account.

The simplicity of the Infinitist account is perspicuous in its formal structure. The Infinitist claims that the justification relation is asymmetric, transitive, and (consequently) irreflexive:

*Asymmetry:* If  $x$  justifies  $y$ , then  $y$  does not justify  $x$ .  $\forall x \forall y (Jxy \rightarrow \neg Jyx)$

*Transitivity:* If  $x$  justifies  $y$ , and  $y$  justifies  $z$ , then  $x$  justifies  $z$ .  $\forall x \forall y \forall z ((Jxy \wedge Jyz) \rightarrow Jxz)$

*Irreflexivity:* Nothing justifies itself.  $\neg \exists x (Jxx)$

The combination of these axioms delivers a structure with potentially limitless chains of justification; that is, there are models of  $J$  with no minimal element.

But these axioms are familiar; they are held in common with the Foundationalist, who similarly insists on a hierarchical ordering of non-repeating items. However, the Foundationalist requires an additional axiom to halt the regress, namely, the axiom of Well-Foundedness. Interestingly, the formulation of Well-Foundedness requires possibly contentious additional resources. Many metaphysicians are concerned to keep their theories as economical as possible, not introducing new ideology or ontology if it can be avoided. The Foundationalist's central tenet of Well-Foundedness, however, cannot be expressed in *first-order* terms. While the axioms expressed above (asymmetry, transitivity, irreflexivity) require only the language of first-order logic, Well-Foundedness requires *second-order resources*.<sup>30</sup> In second order terms,  $R$  is Well-Founded if and only if every non-empty set  $X$  has an element  $x$  that is *R-minimal*, by which we mean that nothing in  $X$  bears  $R$  to  $x$ .

*Well-Foundedness:*  $\forall X [\exists x Xx \rightarrow \exists x (Xx \wedge \forall y (Xy \rightarrow \neg Ryx))]$

Now, those who are suspicious of the extreme parsimony which some metaphysicians insist upon will not think it especially problematic at all that the Foundationalist requires additional logical apparatus. Nonetheless, others disagree, and it is worth briefly saying why, since it is my general aim to illuminate the kinds of argumentative strategies that may be deployed. There has been

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<sup>30</sup> Johan van Benthem and Kees Doets, "Higher-order logic," *Handbook of philosophical logic* 1(1983): 202-03. See also Stewart Shapiro, *Foundations without foundationalism: A case for second-order logic* (Oxford: Oxford University Press, 2006). 108-09.

serious and interesting work dedicated to the place of the formal logical apparatus in our ontology. Ted Sider, for example, offers arguments to the conclusion that only certain of our logical operators belong to the fundamental structure of the world.<sup>31</sup> To make this more intuitive, consider the question, ‘what would God need to create the contents of reality?’ This is a neat litmus test for fundamentality; as Sider points out, “when god was creating the world, she was not required to think in terms of nonfundamental notions like city, smile, or candy.”<sup>32</sup> So we may likewise wonder which *logical devices* (operators, quantifiers, etc.) are fundamental. If there are reasons to think that only *first-order* logic is fundamental, then it may be argued that the axiom of Well-Foundedness is somehow derivative or illicit—and Foundationalism along with it.

But this objection is useful for removing a possible ambiguity between two kinds of Infinitism. According to Infinitism<sub>1</sub>, justificatory chains *may* be infinitely long; according to Infinitism<sub>2</sub>, justificatory chains *must* be infinitely long. The first varietal, Infinitism<sub>1</sub>, is clearly the more *moderate* of these two theses. Now, since Infinitism<sub>2</sub> *positively requires* that justificatory chains be infinitely long in order to confer justification, then it will likewise require more than just the three aforementioned first-order axioms (asymmetry, transitivity, irreflexivity), since these permit but do not *guarantee* an infinite model. Infinitism<sub>2</sub> will thus require some additional, *second-order* axiom which specifies that there is *no* minimal element in the justification relation. Consequently, if the requirement for second-order logical technology was a problem for the Foundationalist, it will be a problem for the Infinitist<sub>2</sub> also.

So, then, perhaps we should adopt the more modest thesis of Infinitism<sub>1</sub>. However, while this move may be available to the epistemologist, the distinction between Infinitism<sub>1</sub> and Infinitism<sub>2</sub> is defunct for our *metaphysical* purposes. Consider what it means to say, as Infinitism<sub>1</sub> does, that metaphysical justificatory chains *may* be infinitely long. The scope of ‘may’ here, and the scope of ‘must’ in Infinitism<sub>2</sub> concern *metaphysical possibility*. To say that *x must obtain* within the realm of metaphysical possibility is to say that *x obtains at all metaphysically possible worlds*; similarly, to say that *x may obtain* is to say that *x obtains at some metaphysically possible world*. So, the claim of Infinitism<sub>1</sub> comes to the claim that there is some metaphysically possible world at which justification chains are infinitely long. However, claims about justificatory structure are *modally* powerful (recall the Monist’s argument from the possibility of gunk): thus, if justification chains are infinitely long in some possible world, then justification chains are infinitely long in *all metaphysically possible worlds*. So, Infinitism<sub>1</sub> implies Infinitism<sub>2</sub>. Consequently, Infinitism<sub>2</sub> is Infinitism *proper*, and it is this thesis to which we should attend.

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<sup>31</sup> Sider, *Writing the Book of the World*: §10.

<sup>32</sup> *Ibid.*, 126.

## AVOIDING ARBITRARINESS AND CIRCULARITY

The Infinitist thesis is that justification requires an infinite series of justifiers. While this may sound initially unintuitive, the Infinitist will argue that he is the only one among his peers (Coherentism, Foundationalism) who has taken justification seriously. In this vein, Peter Klein, foremost defender of Infinitism in epistemology, notes that the Infinitist position arises naturally out of two principles, each of which is highly compelling.

**Principle of Avoiding Arbitrariness (PAA):** For all  $x$ , if a person,  $S$ , has a justification for  $x$ , then there is some reason,  $r_1$ , available to  $S$  for  $x$ ; and there is some reason,  $r_2$ , available to  $S$  for  $r_1$ , etc., and there is no last reason in the series.<sup>33</sup>

**Principle of Avoiding Circularity (PAC):** For all  $x$ , if a person,  $S$ , has a justification for  $x$ , then for all  $y$ , if  $y$  is in the evidential ancestry of  $x$  for  $S$ , then  $x$  is not in the evidential ancestry of  $y$  for  $S$ .<sup>34</sup>

As stated, these principles govern epistemic justification. However, it is clear that their formal structure may well be generalized to the *metaphysical* case.

The objection of arbitrariness is directed at the Foundationalist assumption that a *particular* level is fundamental, since it seems that this level may be quite arbitrarily privileged. Foundationalists in epistemology, for example, might suggest that the raw deliverances of sense data are epistemically basic, and require no further warrant. But, the Infinitist argues, isn't the selection of this terminus quite *ad hoc*? In virtue of what are the senses thus epistemically privileged? What entitles us to terminate the regress there, when it seems sensible to persist in asking, 'and why do you believe *that*?' even at this stage?

The Infinitist claims quite simply that *every item in a justificatory chain require justification by another item*. This is a perfectly intuitive principle, and one which maintains the spirit of the Principle of Sufficient Reason. Indeed, when Descartes and Leibniz agree that we may ask 'what justifies  $x$ ?' even of God, it seems that they are simply adhering to the antecedently accepted principle that *everything* requires justification—even if Descartes and Leibniz fail to answer the question in a satisfactory way.

One interpretation of the import of the PAA is that Foundationalism errs because its selection of the foundational level (whatever it might be) is *arbitrary*—and arbitrariness is in general an undesirable feature of a theory. But this leads to a more pressing concern: it is that the Foundationalist must account for the fact that his preferred level has some feature which no others in the chain do, namely that it *asymmetrically* confers but does not require justification. To return to the babushka dolls, recall the jolting sensation of arriving at the smallest doll, and consider what you might think of this utterly *singular* item. If there were a bottom-most doll,

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<sup>33</sup> Peter Klein, "When Infinite Regresses Are Not Vicious," *Philosophy and Phenomenological Research* 66, no. 3 (2003): 726.

<sup>34</sup> Peter Klein, "Human knowledge and the infinite regress of reasons," *Philosophical Perspectives* 13, no. s13 (1999): 298.

such a doll would be *quite unlike the other dolls*: it would be housed inside a doll, but it would not house a doll inside itself.

This metaphor reveals a serious challenge to the Foundationalist insistence on an ultimately fundamental level. He must answer the question, ‘How could there be something which *justifies* but which is *not itself justified*?’ The inclusion of such an aberrant item seems patently *ad hoc*, an addition motivated purely by the desire to avoid infinite regress. Bonjour notes that such a move would be preposterous if attempted in other domains: “Thus we would have semi-events, which could cause but need not be caused; semi-explanata, which could explain but need not be explained; and semi-beliefs, which could justify but need not be justified.”<sup>35</sup> However, the Infinitist can answer the question quite simply: there could be no such thing.

The objection of circularity is leveled at the Coherentist, who admits circular chains into her justificatory structure. We have already canvassed several reasons to reject circular structures. In particular, I suggested that *priority* is an important part of metaphysical structure, and that circular structures cannot adequately capture this hierarchical notion. The only way for the Coherentist to convey priority properly is to break the circles and creating a directed linear order—but this is ultimately to endorse Foundationalism. To the Infinitist, such circular structures are merely begged questions: although a circular form appears to provide justification (‘what could be better justification for P than P itself?’), the justification is illusory and defective.<sup>36</sup>

Much of this explanation will sound familiar since I have already articulated how I understand the *formal* properties of the Infinitist’s justificatory structure. For example, the PAC is an articulation of the *asymmetry* (and thus the *irreflexivity*) of the justification relation. And, as mentioned, the combination of these highly attractive principles entails Infinitism. As Klein suggests, “it is the straightforward intuitive appeal of these principles that is the best reason for thinking that if any beliefs are justified, *the structure of reasons must be infinite and non-repeating*.”<sup>37</sup> Our general project is to uncover a systematic account of the ontological structure of the world. If we believe that the world does have such a structure—it is not ontologically haphazard—this may well be because of our background assumption that *everything requires justification*. Moreover, if we ask of some particular thing, ‘what justifies *x*?’ we will be disinclined to accept *x itself* as an answer. Our disapproval will stem from our desire to *account* for *x*, ontologically or explanatorily speaking. If we regard the question, ‘what accounts for *x*?’ as a

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<sup>35</sup> Laurence Bonjour, “Can empirical knowledge have a foundation?,” *American Philosophical Quarterly* 15, no. 1 (1978): 11.

<sup>36</sup> Peter Klein (Klein, “Human knowledge and the infinite regress of reasons,” 297) puts the point sharply: “Traditional coherentism is unacceptable because it advocates a not too thinly disguised form of begging the question; and seemingly more plausible forms of coherentism are just foundationalism in disguise.”

<sup>37</sup> *Ibid.*, 299., emphasis edited.

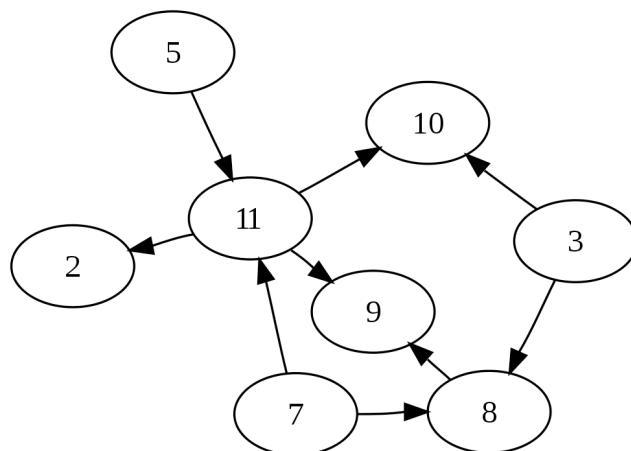
*genuine* question, it is because we believe that *x stands in need of justification*. Consequently, we will not find it acceptable for someone to answer that ‘*x justifies x*,’ since this will not be an answer so much as an invitation for us to repeat our question a little louder.

## CONCLUSION: WEIGHING THE ACCOUNTS, MOVING FORWARD

I have attempted to elicit some of the intuitions and develop some of the arguments which may inform our picture of metaphysical structure. Corresponding to each of Foundationalism, Coherentism, and Infinitism in *epistemology*, there is a counterpart in *metaphysical* theory which merits close attention, though I have suggested that the plausibility of these accounts is not exactly mirrored across the domains. Specifically, I charged that Coherentism is inadequate as an account of *metaphysical priority* as it stands. However, while the questions of metaphysical structure may be traced back to ancient philosophy, there has been relatively little theorizing about what a Coherentist account of metaphysical structure might come to. Thus, Coherentism is an especially interesting avenue for further exploration, if it can be revised to weather the foregoing criticisms. Since my main purpose here has been to present some instructive routes to an adequate account of metaphysical structure, I have a few recommendations for the Coherentist research project going forward.

Specifically, I believe it behooves the Coherentist to consider how deep his commitment to *circularity* really goes, since it is this feature which critically impedes his ability to construct adequate *hierarchical orderings*. It is often taken for granted that coherence somehow requires circularity, but perhaps that need not be the case. As discussed, purely circular structures are inept at conveying which items are fundamental, and which items ground (are prior to) which others; so, it may be desirable to exclude circularity. However, if the Coherentist were to relinquish circular structures—a characteristic feature of his account—he will then be faced with the requirement to distinguish himself from the Foundationalist. I believe he may well have the resources to do so if he takes some instruction from other domains which have been concerned with theorizing about *coherent structures*. In this regard, I would be interested to see how far we could push the *web of existence* model. Perhaps the web could be based on the complex networks of nodes and integrated substructures associated with quantum entanglement, or neural networks—or some other organic model for which *coherence* is a priority. A legitimate concern will be how much formal apparatus is required to express these priority relations, and so it will be helpful if the Coherentist could utilize some extant apparatus. In this regard, perhaps the Coherentist may have some success in formalizing the web of existence by way of *directed acyclic graphs* (see Figure 3.0 below). These useful models permit complex and multidirectional relations—but they have the firm constraint that no *circularity* could obtain. This may then give us an account which retains its Coherentist flavor, but which is able to convey certain important hierarchical notions (like priority) also.





**Figure 3.0: Directed acyclic graph—a model for Coherentism?**

But what of Infinitism? I believe that despite its remarkable resilience, it is not ultimately acceptable either. In my discussion, I have pointed out that Infinitism does a sterling job of sustaining many of our closest intuitions about justification. For example, Infinitism maintains that justification requires a strictly non-repeating *hierarchical* ordering, where *posterior depends on prior*. What more could one want from an account of justification? It strikes me that even though Infinitist structures can convey priority and dependence, these are not the full-blooded notions of priority or dependence that *govern metaphysical reality*. The difficulties are very subtle, however, and deserve a detailed discussion beyond the scope of this present paper. By way of conclusion I would like to indicate my (tentative) view on the role of *inheritance* in the justificatory structure, which I believe is the key notion at work here; to my mind, inheritance is the notion which the Foundationalist wields to his *exclusive* advantage over the Infinitist.

According to the Foundationalist, the non-foundational levels *inherit* some justificatory property in virtue of their dependence on some item which is *ultimately* justified. Returning to the building metaphor, the Foundationalist suggests that the structure must be founded upon a *solid base*; this base is the *source of justification* which the latter layers inherit. The crucial Foundationalist supposition is that if justificatory chains did not terminate in this firm foundation, *there would be no justification for the upper levels to inherit*.<sup>38</sup>

Hankinson, discussing Agrippa's second mode of suspension of judgment, offers the following telling illustration:

Consider a train of infinite length, in which each carriage moves because the one in front of it moves. Even supposing that fact is an adequate explanation for the movement of each carriage, one is tempted to say, in the absence of a locomotive, that one still has no explanation for the motion of the whole. And that metaphor might aptly be transferred to the case of justification in general.<sup>39</sup>

<sup>38</sup> This is what Schaffer has in mind when he writes that "If one thing exists only *in virtue of* another, then there must be something from which the reality of the derivative entities ultimately derives" (Schaffer, "Monism: The Priority of the Whole," 37).

<sup>39</sup> R.J. Hankinson, *The sceptics*, ed. Ted Honderich (New York: Routledge, 2005). 169.

The requirement for an *ultimate* explanation—an explanation concerned not only with the parts, but also with the whole—is what undercuts the Infinitist’s claim. This matter turns on how we account for the origin and transfer of a *dependent property*. The motion of a train, for example, may be explained in part by saying, ‘this carriage moves because the carriage ahead of it moves’. In terms we have discussed, this statement involves *relative* fundamentality—it compares an item in the chain with its immediate ancestor, and delivers an explanatory statement of the form, ‘ $\phi_{n+1}$  is  $F$  because  $\phi_n$  is  $F$ .’ What is left out of the picture by such statements? The specific answer Hankinson indicates—and with which I agree—is that no combination of such sentences will give us a satisfactory account of the movement of the whole train. In our terms, we have no account of *absolute fundamentality*.

Why is this so, and why does it matter? Why are such sentences inadequate as an account of the motion of the train—and absolute fundamentality in general—and how does this tell against Infinitism? To be precise, the critical question we wish to answer is: *what are the most general features of a justificatory relation such that an account given in terms of relative fundamentality is a priori inadequate as an account of that relation?*

Despite the intuitive attraction of the train metaphor, perhaps it gives us an unduly narrow conception of justification. Indeed, this is not the *only* sort of structural analogy which may be drawn, and perhaps the Infinitist may gain traction on our intuitions with this alternative: consider the set of integers  $\mathbb{Z}$ , extending without limit on both sides of the number line, each given integer the unit successor of the last. And then consider the relation  $<$  on that set. There is the sense in which we may account *entirely* for  $<$  through iterated statements of the form:  $n < n+1$ . Consider any two items in the chain, say the numbers 8 and 9. To know that  $8 < 9$ , all I need to know is 8’s position on the line *relative* to 9’s. That is, the relation  $<$  on any  $x, y \in \mathbb{Z}$  is fully explained by way of those two members  $x$  and  $y$  alone. I do not need to make reference to some *minimal element* of the set, which does not exist anyhow. Importantly, if we limit ourselves to statements involving only *relative fundamentality*, we nonetheless arrive at a full and thorough account of the relation—there is nothing left out.

Let us grant for argument’s sake that this is correct; if so, then unlike the train, statements involving merely *relative* fundamentality may suffice for certain explanations. So, metaphorically speaking, *is metaphysical justification like the train, or like the integers—and why?*

I believe that metaphysical justification is like the train, since we are inexorably concerned not only with the claims of relative fundamentality, but of absolute fundamentality also. Why? Ground has a *hereditary structure*, and ground is *complete*. Clearly, certain justificatory relations (like motion) have a *hereditary structure* which requires a *first member* (e.g., a locomotive) in which the original justificatory power vests. Is *ground* like this? Yes: when we say that *some item grounds or justifies another*, we mean that the former accounts for the nature and existence of the

latter; inversely we may say that the latter *inherits* its nature and existence from the former. This is to suggest that there is some hereditary property which is transmitted through the justificatory chain.

The important point is that inheritance imposes certain constraints on a relation, and the corresponding structural properties of that relation constrain the kinds of explanations which are admissible. Intuitively, explanations of how someone came to receive an inherited property are not concerned only with the immediate ancestor, but with the *lineage altogether*. Concerning the ancestry of kings, for example, we cannot brook the idea of a limitless chain of heirs extending backwards. There must be some *original* king—one in whom royalty and royal-making power vests—otherwise we are inclined to think that any of the heirs' subsequent claims to royalty are *groundless*. We reject the infinite chain of heirs not for the spurious reason that we find it difficult to conceive of time extending limitlessly backwards, but for the good reason that, since royalty is an *inherited* property, we require an account of the *lineage*—how the royalty came to inhere in the chain in the first place. This suggests an argument against Ininitism: where a justificatory chain extends limitlessly backwards—as the Ininitist supposes—we can have no complete account of the lineage. If such an account is required, we have reason to reject Ininitism.

Foundationalism, as an account of hereditary justification, endorses the spirit of Johnstone's splendid line: "an X infinitely postponed is not an X."<sup>40</sup> The central point, I believe, is this: for any items *x* and *y*, when *x* grounds *y*, *y* depends for its nature and existence—its *ground*—on *x*. However, since ground is an hereditary notion, the fact that *x* grounds *y* is also a matter of the grounding *lineage* of *x*. Thus, in accounting for the justification of *y*, we are required to account for the justification of all the items in the grounding chain prior to *y*. Plainly, if our account of *y* is to be *complete*, then that grounding chain may not extend without limit, lest *y* not be grounded at all. For, in seeking justification for *y*, if we are able to persist without limit in asking 'but what justifies *that*?' then our account will be *incomplete*, and consequently *y* will never be completely grounded. If *y* is incompletely justified—if its justification is infinitely postponed—then *y* is not justified at all.

To my mind, this definitively undermines the prospects of Ininitism. An infinite chain without a final limit is crucially *incomplete*. Occasionally, this incompleteness is no impediment to an account, since some relations may have (or even require) limitless models. However, *metaphysical structure*, as presently conceived, is not like this. As an explanatory and hereditary notion, *ground* is *complete*; and this requires us to deploy claims both of relative and *absolute* fundamentality. While Ininitism can deliver the former, only Foundationalism can deliver the

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<sup>40</sup> Henry W. Johnstone Jr., "The Rejection of Infinite Postponement as a Philosophical Argument," *The Journal of Speculative Philosophy* (1996): 96.

former and the latter also. The point above may inform a simple *reductio* with which I will close this paper. *On the assumption that there were no fundamental level, then there would be no complete chains of grounding. And, if there were no complete chains of grounding, then there would be no objects which are completely grounded. But this is just to say that there would be no objects, since an X infinitely postponed is not an X. However, there obviously are some objects (here is one hand, and here is another). Therefore there must be a fundamental level.*

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