

The Fundamentality First Approach to Metaphysical Structure*

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Introduction

Philosophical investigations, like scientific investigations, profitably start by surveying the relevant data. As I'll detail below, the relevant data here (initially; the set will expand) involve certain views, drawn from religion/cosmology, science, and philosophy, which presuppose that a given domain—sometimes a world,¹ sometimes a subdomain of the world—manifests what I call ‘metaphysical structure’, whereby

1. Some goings-on in a given domain D are (absolutely or comparatively) fundamental; and
2. (Comparatively) non-fundamental goings-on in D metaphysically depend on (absolutely or comparatively) fundamental goings-on in D .

The references to ‘absolute’ or ‘comparative’ fundamentality (non-fundamentality) reflect that in some cases the goings-on serving as a dependence base for goings-on in D are fundamental *tout court* (i.e., at a world), and in other cases the dependence base goings-on are fundamental just with respect to goings-on in D . And the reference to distinctively ‘metaphysical’ dependence reflects, roughly speaking, that the views at issue take the existence and features (properties, behaviours, etc.) of non-fundamenta to be somehow or other constituted (in the usual case: cotemporally) by certain (absolutely or comparatively) fundamental goings-on, in ways that the views often aim to elucidate. Relatedly, the views presuppose that (absolute or comparative) fundamenta are prior to (comparative) non-fundamenta in the order of metaphysical determination and explanation, such that metaphysical dependence relations in at least some cases encode a difference in, or a direction of, priority.²

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¹Or a collection of goings-on comprising a world; I won't carry this qualification through.

²The qualifier ‘in at least some cases’ is important, and reflects that the connection between non-fundamentality and metaphysical dependence in these case studies is best seen as encoding that it is *necessary* for some goings-on to be (comparatively) non-fundamental that they metaphysically depend on some (absolutely or comparatively) fundamental goings-on. This much does not imply that metaphysical dependence is *sufficient* for non-fundamentality; on the contrary, as I'll later discuss, some case studies involve there being (absolutely or comparatively) fundamental goings-on that metaphysically depend on themselves or each other.

Now, there is a question of how to understand the appearances constituting the initial data. To be clear, the task here is not the broadly metaphysical one of determining which views pre-supposing metaphysical structure are or might be true or correct. Rather, the task is the broadly metametaphysical one of identifying and assessing our options for understanding the notions of fundamentality and metaphysical dependence *themselves*, with the structuring questions being:

1. What makes it the case that some goings-on in a domain D are (absolutely or comparatively) fundamental?
2. What makes it the case that (comparatively) non-fundamental goings-on in a domain D metaphysically depend on (absolutely or comparatively) fundamental goings-on in D ?

Answers to these questions constitute accounts of fundamentality and of metaphysical dependence, respectively. And reflecting that these notions bear upon each other, at least insofar as non-fundamental goings-on metaphysically depend on (absolutely or comparatively) fundamental goings-on, philosophical treatments of metaphysical structure typically take the form of package deals, coupling an account of fundamentality with an account of metaphysical dependence.

Here I aim to advance my preferred ‘Fundamentality First’ package deal approach to metaphysical structure, coupling a primitivist approach to fundamentality with a pluralist approach to metaphysical dependence, as per:

- *Primitivist Fundamentality*: What makes it the case that some goings-on at a world w are fundamental at w is metaphysically primitive; and
- *Pluralist Metaphysical Dependence*: What makes it the case that some goings-on at a world w metaphysically depend on other goings-on at w is a matter of the holding of diverse metaphysical relations, which (against the backdrop specification of what is fundamental at w) serve as metaphysical dependence relations.

My primary aim here is the constructive one of establishing Fundamentality First as a viable contender; a full critical comparison with competing package deals must await a different occasion.³ That said, in what follows I will register some salient approaches to fundamentality and metaphysical dependence, and take certain package deals as occasional foils, both to situate my view in the space of options and to make some preliminary comparative assessments.

I start by surveying some of the views comprising the data, sketching a representative range of options as regards approaches to metaphysical structure, and noting certain desiderata entering into my preferred broadly abductive methodology (§1). I then present Fundamentality First, filling in and offering some preliminary motivations for its primitivist and pluralist components, and spelling out the means by which Fundamentality First generates priority relations, where these exist (§2). I then argue that Fundamentality First nicely satisfies the operative methodological desiderata (§3). I close by registering some items on my ‘to do’ list (§4).

³In particular: in *Fundamentality and Metaphysical Dependence* (under contract, OUP).

1 Data, Foils, Methodology

1.1 The appearances of metaphysical structure

I now survey a range of views presupposing metaphysical structure; these will go a good way towards fixing our target. I start with some views presupposing ‘global’ metaphysical structure, where the domain at issue is an entire world (typically, the actual world), and the fundamenta at issue are taken to be absolutely or unqualifiedly fundamental (hence and henceforth: just ‘fundamental’). In religion/cosmology, for example:

- Certain Native American doctrines posit a fundamental unifying principle—‘usen’ or ‘waken’—which not only “precedes everything else” but moreover serves as “the ground of things”;⁴
- According to the Abhidharma Buddhist tradition, the fundamental entities are impartite ‘dharma’s’, and non-fundamental entities (e.g., chariots) are wholes having dharma’s as ultimate parts; here the form of metaphysical dependence is something like mereological composition;⁵
- On Spinoza’s conception of God, God is not just the original cause of all else, but is also a persisting ground or metaphysical basis for all else, with non-fundamenta understood as dependent modes or attributes of the one substance, where “There are [...] differences in the way things depend on God”.⁶

Commitment to global metaphysical structure is also common to certain broadly scientific views. Hence it is commonly assumed in scientific contexts (as per the intro of pretty much any textbook in physics or chemistry) that physical goings-on of the sort treated by our best physical theories serve as a fundamental basis for the rest of natural reality, with non-fundamenta composed by, realized by, or otherwise coterminally metaphysically dependent on fundamenta. Various aspects of and variations on the theme of this sort of view are reflected in claims that, e.g.,

- Certain physical objects are fundamental and compose all matter;⁷
- Certain theories (or associated states of affairs) are fundamental and serve as an explanatory basis for all natural phenomena;⁸
- Certain interactions are fundamental and are constitutively ‘responsible’, individually and together, for other natural phenomena.⁹

Also relevant here are views on which spatiotemporal goings-on of the sort treated by general relativity or presupposed by quantum mechanics are taken to be non-fundamental *vis-à-vis* some

⁴See Moore *et al.* 2007, 107).

⁵See Siderits 2007, 111–113). Note that in cases where some goings-on are taken to be reducible to or analyzable in terms of some others, there is a question of whether the reducible goings-on are given a deflationary treatment (say, as only conventionally or pragmatically real), or as real yet non-fundamental. The Buddhist view that the self and other (non-dharmic) goings-on are ‘empty’ in lacking intrinsic nature admits of interpretations on which non-dharmic goings-on exist but lack any independent being (Cook 1979, 368).

⁶See Nadler 2022.

⁷See Kane 1993, 7.

⁸See Cohen-Tannoudji *et al.* 1977, 9.

⁹See Auyang 1999, 46.

or other nonspatiotemporal fundamental ontology of the sort associated with, e.g., quantum loop theory, causal set theory, or wave function realism.¹⁰

Finally, many philosophical and especially metaphysical views are committed to global metaphysical structure. For example:

- Democritus posits indivisible atoms of different types as fundamental, with all macroscopic objects taken to be clusters of atoms, and properties of macroscopic objects analyzed in terms of rearrangements of composing atoms;¹¹
- Berkeley takes minds and ideas to be fundamental, with ordinary macroscopic objects being collections of ideas, and finite spirits as well as the rest of natural reality being such as to “reside” in God qua infinite spirit;¹²
- Lewis defends ‘Humean supervenience’, on which the fundamenta are categorical intrinsic qualities at space-time points, with the rest of natural reality ‘supervening’ on the Humean mosaic;¹³
- Contemporary physicalists take lower-level physical goings-on, individually or in complex combinations, to be a foundational basis for all broadly scientific goings-on, with debate concerning the aptitude of certain metaphysical relations (including type/token identity, supervenience, mereological composition, constitution, supervenience, functional realization, causal mechanism, the determinable-determinate relation, among others) to serve as metaphysical dependence relations for this or that seemingly higher-level (especially special-scientific) phenomenon.¹⁴

The views surveyed above—and of course very many others manifest the same general pattern in each of religion/cosmology, science, and philosophy—offer an impressively diverse range of conceptions of how the world as a whole is or might be. But running through all this diversity, it seems clear, is a commitment to the world’s being globally metaphysically structured, such that:

1. Some goings-on at world w are fundamental; and
2. Non-fundamental goings-on at w metaphysically depend on fundamental goings-on at w .

Metaphysical structure is also evident in religious/cosmological, scientific, and philosophical views on which the domain is a sub-domain of a given world (again, typically, the actual world), and where the dependence base goings-on are taken to be comparatively fundamental, relative to other members of the sub-domain, rather than absolutely fundamental. For example:

- In the Vedas, the gods are comparatively fundamental, in serving as a constitutive basis for the forces of nature and the rest of natural reality, while themselves being metaphysically dependent on an underlying universal principle, ‘Rta’;¹⁵

¹⁰See discussions in, e.g., Wüthrich 2018, Huggett 2021, and Ney 2021.

¹¹See Berryman 2016, 1–2.

¹²See Downing 2020, 16–17.

¹³See Lewis 1986*b*, ix.

¹⁴See, e.g., Davidson 1970, Hellman and Thompson 1975, Yablo 1992, Melnyk 1995, Wilson 1999, Stoljar 2010, Gillett 2016, Wilson 2021, and many others.

¹⁵See Panjvani 2013, 6–7.

- In compositional semantics, certain words or other ‘semantic elements’ are taken to be comparatively fundamental, with the meanings of sentences or other more complex semantic structures understood as completely determined by—that is, metaphysically dependent on—the meanings of more basic terms, when in suitable combination;¹⁶
- In metaphysics, it is commonly supposed that sets metaphysically depend on, and are posterior to, their (fundamental or non-fundamental) members.¹⁷
- In the philosophy of sociology, some take social categories to be metaphysically dependent on social practices and other phenomena which are assumed not to be fundamental in any absolute sense.¹⁸

Such views manifest a kind of relativized or ‘local’ metaphysical structure, according to which:

1. Some goings-on in a domain D are comparatively fundamental; and
2. (Comparatively) non-fundamental goings-on in D metaphysically depend on comparatively fundamental goings-on in D .

Putting together the presuppositions of the global and local views, and allowing that the domain at issue may be either a world or a sub-domain of the world, we arrive at the general characterization of metaphysical structure, as above, whereby:

1. Some goings-on in domain D are (absolutely or comparatively) fundamental; and
2. (Comparatively) non-fundamental goings-on in D metaphysically depend on (absolutely or comparatively) fundamental goings-on in D .

1.2 Some salient package deal approaches to metaphysical structure

How should we understand the appearances of (commitment to) metaphysical structure? Again, our concern is the broadly metametaphysical one of investigating the notions of fundamentality and metaphysical dependence *themselves*, with the structuring questions being:

1. What makes it the case that some goings-on in a domain D are (absolutely or comparatively) fundamental?
2. What makes it the case that (comparatively) non-fundamental goings-on in a domain D metaphysically depend on (absolutely or comparatively) fundamental goings-on in D ?

As it happens, significant philosophical attention has been devoted to these questions of late, and several answers to each question are on offer. I’ll first discuss certain accounts aiming to answer one or the other question, then highlight certain package deals combining component accounts.

Accounts of fundamentality typically focus on absolute fundamentality.¹⁹ We may initially divide the options for this component into anti-realist or deflationary approaches, according to

¹⁶See Liu *et al.* 2020, 44–5.

¹⁷See Fine 1994, 5.

¹⁸See Ásta 2018, 7.

¹⁹How to understand comparative fundamentality in light of the operative accounts of absolute fundamentality and metaphysical dependence is a further question, to which we’ll return down the line.

which the question of what makes it the case that some goings-on are fundamental is ill-posed (at least if it presupposes that an adequate answer must not advert to minds and their conceptions), and broadly realist approaches, according to which there is some or other (purely) metaphysical basis for such claims. Broadly anti-realist approaches include views on which fundamentality claims reflect or encode ...

- that certain pragmatic needs are in place;²⁰
- that certain linguistic conventions are in place;²¹
- that certain expressive aims are in place.²²

Broadly realist approaches include views on which—moving to the material mode—what makes it the case that some goings-on x are fundamental is ...

- that x does not metaphysically depend on anything else;²³
- that x is part of a minimal basis upon which everything metaphysically depends;²⁴
- that x is among the entities that jointly serve as a truthmaking basis for all truths;²⁵
- that not all facts about x metaphysically depend on facts about other goings-on;²⁶
- that x is ‘sparse’ or perfectly natural;²⁷
- primitive—is not analyzable in any other terms, including relations of (or facts about) metaphysical dependence or independence.²⁸

Accounts of metaphysical dependence may again be initially divided into broadly anti-realist and realist approaches. Broadly anti-realist approaches include views on which metaphysical dependence claims reflect ...

- that certain pragmatic needs or linguistic conventions are in place;²⁹
- that certain fundamental truthmakers for non-fundamental truths exist.³⁰

Broadly realist approaches include views on which—moving to the material mode—what makes it the case that (comparatively) non-fundamental goings-on in a domain D metaphysically depend on (absolutely or comparatively) fundamental goings-on in D is ...

- that certain modal correlations,³¹ certain modal existential relations,³² or certain conceptual entailments³³ are in place;

²⁰See, e.g., Carnap 1950.

²¹See, e.g., Thomasson 2015, Warren 2016.

²²See, e.g., Hofweber 2016, Williams 2010.

²³See, e.g., Schaffer 2009, Bennett 2017.

²⁴See, e.g., Tahko 2018*b*.

²⁵See, e.g., Heil 2003*a*, Cameron 2008.

²⁶See, e.g., Raven 2016.

²⁷See, e.g., Lewis 1986*a* and 2001, Sider 2011.

²⁸See, e.g., Fine 2001, Wilson 2014, Tahko 2018*b*.

²⁹See, e.g., Carnap 1950, Thomasson 2015, Sidelle 2019.

³⁰See, e.g., Heil 2003*b* and 2012, Cameron 2010, Morris 2018, Norton *et al.* 2018.

³¹See, e.g., Armstrong 1997, Lewis 1986*b*, Bailey 1999, Howell 2009.

³²See, e.g., Tahko and Lowe 2015.

³³See, e.g., Chalmers 1996 and 2012.

- that certain facts about essence,³⁴ ‘naturalness’,³⁵ or ‘ways of being’³⁶ are in place;
- the holding of a primitive generic relation or notion, ‘Ground’ or ‘Grounding’;³⁷
- that certain diverse metaphysical relations are instantiated, with candidate relations including (among others) type and/or token identity, property instantiation, set membership, classical mereological part-whole, functional realization, and the determinable-determinate relation.³⁸

In considering the rich suite of options for understanding the components of metaphysical structure, it is useful to keep in mind that, insofar as non-fundamental metaphysically depend on (comparative or absolute) fundamental, assessing either component requires some attention to how the other component is treated, and how the components interact. Hence it is that certain ‘package deal’ approaches to metaphysical structure have become salient, and will on occasion serve as foils in what follows, including

- *Deflationary* approaches coupling a deflationary (anti-realist or eliminativist) approach to metaphysical dependence with a truthmaking or other minimal basis account of fundamentality;³⁹
- *Grounding-based* approaches coupling a primitivist (Grounding-based) account of metaphysical dependence with either (i) an independence-based account of fundamentality, on which to be fundamental is to be un-Grounded,⁴⁰ or (ii) a primitivist account of fundamentality as tracking what is ‘real’;⁴¹
- *Building-based* approaches coupling a pluralist account of metaphysical dependence in terms of ‘building’ relations with an independence-based account of fundamentality, on which to be fundamental is to be un-built.⁴²

There are other salient package deal competitors to Fundamentality First.⁴³ Though my engagement with competitors here is both restricted and preliminary, I hope it will provide some indication of my reasons for thinking that Fundamentality First is a viable, and indeed quite attractive, contender.

³⁴See, e.g., Fine 1995, Koslicki 2012, Correia 2013. Also relevant here are accounts on which facts about essence are reduced to generalized identities (see, e.g., Correia and Skiles 2019, drawing on Dorr 2016).

³⁵See, e.g., Sider 2011.

³⁶See, e.g., McDaniel 2017.

³⁷See, e.g., Fine 2001, Rosen 2010, Schaffer 2009, Raven 2012, Audi 2012. Following my (2014), I capitalize the ‘g’ to distinguish references to the distinctive primitive from traditionally common schematic uses of ‘grounding’ as neutrally picking out some or other metaphysical dependence relation.

³⁸See, e.g., Wilson 2014, Bennett 2017.

³⁹As per Heil 2003*b*, Ney 2010, Cameron 2010, Thomasson 2015, Norton *et al.* 2018.

⁴⁰As per Schaffer 2009 and Rosen 2010.

⁴¹As per Fine 2001.

⁴²As per Bennett 2017.

⁴³These include approaches which are anti-realist or skeptical about both fundamentality and metaphysical dependence (as per Carnap 1950, Chalmers 2009, Clarke-Doane 2019, Segal 2020); approaches coupling a modal or conceptual entailment-based account of metaphysical dependence with a minimal-basis account of fundamentality (as per Davidson 1973, Lewis 1986*a*, and Chalmers 1996); approaches coupling a Grounding-based account of metaphysical dependence with an ineliminability account of fundamentality (as per Raven 2016 and deRosset 2023); and approaches coupling an essence-based, naturalness-based, or ways-of-being-based account of metaphysical dependence with some account of fundamentality (as per Fine 1995, Sider 2011, Correia and Skiles 2019, and McDaniel 2017).

1.3 Methodology

I now flag certain desiderata which will be operative in what follows. As usual, these are broadly ‘*ceteris paribus*’, and may need to be traded off against each other.

1.3.1 *Ecumenicality*

I assume that an account of metaphysical structure is better to the extent that it is suitably ecumenical, in not antecedently ruling out of court, any broadly intelligible first-order view presupposing metaphysical structure.⁴⁴ This desideratum applies not just to the hierarchical views surveyed above, but also to other views in which the notions of fundamentality and metaphysical dependence are operative (here is the anticipated expansion of the data set), including

- Views on which some fundamenta metaphysically depend on themselves, as on the view, associated with the Christian notion of ‘aseity’, according to which God is self-dependent;⁴⁵
- Views on which some fundamenta metaphysically depend on each other, as might be the case with quarks on the standard model of particle physics;⁴⁶
- Views on which some goings-on are both fundamental and *partly* metaphysically dependent on other fundamenta, as might be the case with Strongly emergent phenomena⁴⁷ and (perhaps relatedly) certain fundamental ‘configurational’ interactions, which come into play only at certain levels of complexity.⁴⁸

Why be ecumenical? My thought here is similar to that highlighted in Fine’s (1994) discussion of essence (see also Wilson 2016*a*, 2016/2020). There Fine argues that a modal account of essence (whereby, roughly, a property is essential to some object iff it is necessary that the object have the property) is subject to counterexamples, including that from the necessary coextensiveness of Socrates and Singleton Socrates it (intuitively incorrectly) follows that Socrates essentially belongs to his singleton, and that from the necessary distinctness of Socrates and the Eiffel Tower it (intuitively incorrectly) follows that it is essential to Socrates that he be so distinct. But what if one rejects the views underlying the seeming counterexamples? No matter, says Fine:

Nor is it critical to the example that the reader actually endorse the particular modal and essentialist claims to which I have made appeal. All that is necessary is that [the reader] should recognize the intelligibility of a position which makes such claims. For any reasonable account of essence should not be biased towards one metaphysical view rather than the other. It should not settle, as a matter of definition, any issue which we are inclined to regard as a matter of substance. (5)

⁴⁴Note that this desideratum is compatible with our coming to reject certain such first-order views, as a result of scientific, philosophical, or other investigation.

⁴⁵See Sauvage 1907.

⁴⁶See Tahko 2018*a* and Wilson 2016/2020.

⁴⁷See Wilson 2021.

⁴⁸See McLaughlin 1992 and Wilson 2002.

I similarly claim:

Nor is it critical to the examples that the reader actually endorse the claims constituting the case studies of metaphysical structure to which I have made appeal. All that is necessary is that the reader should recognize the intelligibility of a position which makes such claims. For any reasonable account of metaphysical structure should not be biased towards one metaphysical view rather than the other. It should not settle, as a matter of definition, any issue which we are inclined to regard as a matter of substance.

1.3.2 *Interpretive non-revision*

I assume that an account of metaphysical structure is better to the extent that it is (as I'll put it) 'interpretively non-revisionary', in that applications of the account to views presupposing metaphysical structure are generally capable of preserving the intended interpretations of the views. This desideratum indirectly pushes towards realist accounts of metaphysical structure, since the views constituting the relevant data are nearly all advanced in realist terms, as being about the structure of fundamental or non-fundamental reality. It also operates to generate certain other desiderata, reflecting, e.g., that the dependence relations at issue in these views are typically offered as illuminating the nature and ontological and causal status of dependent goings-on; as closing explanatory gaps between dependent goings-on and their (complete) dependence bases; and so on.

1.3.3 *Ontological parsimony*

I assume that an account of metaphysical structure is better to the extent that it is ontologically parsimonious as regards both primitive and non-primitive types and tokens—that is, to the extent that it does not posit more primitive or non-primitive types and/or tokens than are needed to accommodate the phenomena. Some (e.g., Schaffer 2009) suppose that only primitive types or tokens are relevant to assessments of ontological parsimony. Perhaps it is reasonable to suppose that primitive types or tokens count somewhat more than non-primitive types or tokens, so far as ontological parsimony is concerned; but as debates between reductionists and non-reductionists (e.g., reductive and non-reductive physicalists) suggest, non-primitive types or tokens also press on the scale of ontological parsimony.

1.3.4 *Methodological consonance*

I assume that an account of metaphysical structure is better to the extent that it is, as I'll put it, 'methodologically consonant', in making sense of the methodology of religious/cosmological, scientific, and especially philosophical investigations into such structure. In other words, an account of metaphysical structure should make sense of how investigations into metaphysical structure actually proceed, and relatedly (though again, it is no part of the present project to anticipate an answer to such first-order questions), of how we might go about determining what account(s) of metaphysical structure we should believe or otherwise take seriously.

1.3.5 *The unfixedness of priority*

In addition to the desiderata above, I will take it to be a virtue of an account of metaphysical structure that it accommodates an important datum about metaphysical dependence: namely, that many of the metaphysical relations appealed to in views presupposing metaphysical structure—e.g., parthood, functional realization, the determinable-determinate relation—*do not themselves fix a direction of priority between their relata*. Consider, for example, the debate between priority Monists and Pluralists:

- The Monist and the Pluralist agree that the Cosmos and the impartite ‘atoms’ stand in the mereological part-whole relation (‘parthood’, for short). As Schaffer (2010) puts it, “the debate is not over what exists. Both sides can and should agree that the world exists and has parts [...]. The debate is rather over what is basic—it is about how to answer the question of fundamental mereology” (44).
- The dispute here is not over which direction of priority should *always* be associated with parthood, for two reasons. First, the dispute is not pitched in such terms. Second, either disputant can maintain that different instances of parthood can point in different directions. For example, a Monist can maintain both that the Cosmos is prior to its parts, and that the parts of a table are prior to the table. As Schaffer (2010) observes, “none of the views as defined say anything about the relative priority ordering among derivative entities” (44).

Other examples abound. An Aristotelean and a materialist may agree that bodies are functionally realized by material states, but disagree over whether material states (‘matter’) are prior to functional characterizations (‘form’), or *vice versa*. There is disagreement over whether certain determinates are prior to their determinables,⁴⁹ or *vice versa*.⁵⁰ And so on. Indeed, attention to a sufficiently wide range of candidate scientific, broadly religious, and philosophical views and associated debates about metaphysical structure suggests that many and perhaps most specific metaphysical relations offered as metaphysical dependence relations don’t have a fixed (i.e., ‘built-in’) direction of priority.

I assume, then, that an account of metaphysical structure is better to the extent that it accommodates and makes sense of what I’ll call ‘the unfixedness of priority’, whereby instances of (at least some of) the relations appealed to in views presupposing metaphysical structure can point in different directions. As we’ll see, how a given package deal treats the unfixedness of priority has ramifications for comparative assessments of ontological parsimony, among other desiderata.

This concludes my survey of the desiderata that I take to be most important in assessing a given package deal account of metaphysical structure. My comparatively limited aim in what follows is to provide reasons for thinking that Fundamentality First does quite a good job at satisfying the operative desiderata, and moreover, on the face of it, a better job than certain salient competitors.

⁴⁹See, e.g., Lewis 1993, Armstrong 1997, and Gillett and Rives 2005.

⁵⁰See, e.g., French 2014 and Vetter 2015 on determinable laws of nature, Calosi and Wilson 2018 and Calosi and Mariani 2021 on fundamental quantum determinables, Kroll 2023 on determinable dispositions, and Wilson 2012 on the general viability of fundamental determinables.

2 Fundamentality First

I now put my preferred package deal approach to metaphysical structure on the table, coupling a primitivist approach to fundamentality with a pluralist account of metaphysical dependence. In what follows, I say a bit more to clarify, motivate, and defend each component of my account, discuss how the components interact so as to fix priority where appropriate, and offer some strategies for demarcating the relations capable of serving as metaphysical dependence relations.

2.1 Fundamentality

According to *Primitivist Fundamentality*:

Primitivist Fundamentality: What makes it the case that some goings-on at a world w are fundamental at w is metaphysically primitive.

On this account, what makes it the case that some goings-on are fundamental (at a world; henceforth I'll usually elide this qualification) is metaphysically primitive, by which I mean: is not metaphysically reducible to or otherwise metaphysically determined by other facts or goings-on, whatever these may be. *Primitivist Fundamentality* respects Fine's (2001) claim that one should "reject the idea that the absolute notion of fundamental reality is in need of a relational underpinning" (25), and so contrasts with approaches according to which what makes it the case that some goings-on are fundamental is metaphysically reducible to or analyzable in terms of, e.g., the failure to hold of certain metaphysical dependence relations (per independence-based accounts) or the holding of certain metaphysical dependence relations (per minimal basis accounts).

2.1.1 The primitivism at issue in *Primitivist Fundamentality*

I start with three clarificatory remarks about the primitivism at issue.

First, it is not the fundamental goings-on themselves, but *that some goings-on are fundamental*, which is (metaphysically) primitive on this account. Whether some fundamental goings-on are themselves primitive (not subject to further metaphysical analysis) is one thing, whether what makes it the case that some goings-on are fundamental is primitive (not subject to further metaphysical analysis) is another thing. To get a sense of the contrast, suppose that (as per Atomism) the atoms are the only fundamenta, and that these are primitive elements insofar as their existence and nature is not subject to further metaphysical analysis. Atomists might nonetheless disagree about *what makes it the case* that the atoms are fundamental: on an independence-based account this would be that the atoms are individually independent of all else, on a minimal-basis account this would be that the atoms being part of a minimal basis for all else, and on a primitivist account this would be primitive, not metaphysically analyzable in any other terms. Now, my own view is that, as per certain motivating case studies on which some (quark-theoretic, or Strongly emergent) fundamenta metaphysically depend on some others, it might be that some fundamental goings-on are themselves metaphysically non-primitive, in being at least partly metaphysically determined by,

and to that extent metaphysically analyzable in terms of, other fundamental goings-on. In any case, what is primitive on *Primitivist Fundamentality* is just *that some goings-on are fundamental*.⁵¹

Second, at issue in *Primitivist Fundamentality* is metaphysical, not conceptual, primitivity. My concern is with reality, not with how we represent reality. If representation and reality always went hand-in-hand, perhaps investigations into whether some phenomenon is metaphysically primitive could proceed by attention to whether the associated concept is conceptually primitive; but representation and reality can and often do come apart. Importantly for present purposes, a concept might encode aspects of a phenomenon that are necessary or even essential to the phenomenon, but which do not enter into a metaphysical account of the phenomenon. As Socrates would have pointed out to Euthyphro: even if our concept of a pious action is such that it is necessary and indeed essential to pious acts that they are loved by the Gods, it remains that what makes it the case that a given action is pious is metaphysically prior to the action's being loved by the Gods—and indeed, might well be metaphysically primitive. Relatedly, even granting (as seems to me plausible) that our concept of fundamentality is such that it is necessary and indeed essential to fundamenta that, taken together, they provide a complete minimal basis for everything at a world, it doesn't follow that what makes it the case that some goings-on are fundamental is that they play this role. Rather, on my view, what makes it the case that some goings-on are fundamental is metaphysically prior to their playing this or any other role—and indeed, is metaphysically primitive.

Third, to say that some phenomenon is metaphysically primitive leaves open certain options concerning whether the primitivity at issue attaches to (members of) a specific ontological category (object, property, fact, . . .), or whether this primitivity rather carves at the metaphysical joints in a way not involving any such ontological posit. It is no part of *Primitivist Fundamentality* that the primitivity of fundamentality is located in a primitive ontological posit—e.g., in certain goings-on having a primitive property (*being fundamental*) or entering into a primitive fact encoding their being fundamental. Once again, the Euthyphro moral applies: if, e.g., it makes sense to attribute the property *being fundamental* to some goings-on, so be it; but according to *Primitivist Fundamentality* the having of this property is not what *makes it the case* that the goings-on are fundamental; rather, what makes it the case that the goings-on are fundamental is metaphysically primitive, and the having of the property *being fundamental* (the entering into certain facts encoding the fundamentality of the goings-on, etc.) follows therefrom.⁵²

⁵¹Some have complained that in saying that “The fundamental should not be characterized . . . in other terms. The fundamental is, well, fundamental” (Wilson 2014, 560), I conflate the supposed primitivity of the fundamental goings-on themselves with the primitivity of what makes it the case that some goings-on are fundamental (see Cameron 2016, Mehta 2017, Raven 2017, and Bennett 2017). I think it's clear in context that I'm not making this conflation, not least because there I explicitly highlight that fundamental goings-on might themselves *not* be primitive, again reflecting case studies involving fundamenta which mutually metaphysically determine or depend on each other. Perhaps the complaints are best read as expressing perplexity about what the motivations for primitivism about fundamentality might be, if not such as to rest on a conflation with the purported primitivism of fundamenta themselves. One aim of the present paper is to answer this question.

⁵²The intended metaphysical import is along lines of that encoded in Wang's (2018) description of modal primitivism ('modalism') according to which “Acceptance of a primitive notion does not require thinking that the primitive corresponds to some entity in one's ontology. The modalist may say that if some proposition or sentence *P* is possible, this means that the world is such that Possibly *P*, and that the world's being this way is not subject to further analysis or explanation”. Similarly, I maintain, for the primitivism at issue in *Primitivist Fundamentality*.

2.1.2 Three preliminary motivations for *Primitivist Fundamentalism*

Why be primitivist about fundamentality? The ultimate answer rests on which package deal approach to metaphysical structure is overall best; but by way of filling in my own leanings (or ‘vision’) I here offer three preliminary considerations which strike me as advantageous.

First, *Primitivist Fundamentalism* appears to be maximally ecumenical as regards what fundamenta there might be: if what makes it the case that some goings-on at a world are fundamental is metaphysically primitive, no antecedent restrictions are placed on which goings-on might or might not be fundamental, beyond restrictions imposed on any such posits (say, that they not give rise to some sort of problematic inconsistency; henceforth I’ll take such restrictions as read). By way of contrast, at least some non-primitivist accounts of fundamentality do place antecedent restrictions on which goings-on might or might not be fundamental. For example, a conception on which what makes it the case that a given entity is fundamental is that the entity is metaphysically independent of all else rules out views on which God is both fundamental and self-dependent, on which quarks are both fundamental and mutually dependent, and on which Strongly emergent phenomena are both fundamental and partly dependent on lower-level fundamental physical phenomena.

Second, there’s a natural analogy between the axioms of a theoretical system and the fundamenta at a world, which seems to me to support *Primitivist Fundamentalism*, via what I’ll call ‘the argument from primitivity’. The general idea, to start, is that axioms stand to propositions in a theoretical system in something like the way fundamenta stand to goings-on at a world. The axioms generate, somehow or other, all the non-axiomatic (derivative) propositions in the system; the fundamenta generate, somehow or other, all the non-fundamental (derivative) goings-on in the world. So far, I think, most realists about metaphysical structure would agree. Now recall Lewis’s observation: every system has its primitives, but primitives can be better or worse. So ask: where is the primitivity in an axiomatic system best located? Not in the content of the axioms, for in the general mathematical case there is no sense in which this content is primitive (consider Euclid’s or Peano’s axioms—their content is built up from more basic concepts and notions). Not in the content of the non-axiomatic propositions, for that content is derived, not primitive. And not in failure of the axioms to be derivable—for in a different system they might well be derivable (consider different axiomatizations of propositional logic). There’s only one clear locus of primitivity in a theoretical system: namely, in the specification of what is axiomatic. Similarly, I maintain, when it comes to metaphysical structure (and for the same reasons, *mutatis mutandis*): there’s really only one natural locus for primitivity—that is, in the specification of what is fundamental. And in each case, this locus makes good sense; for where better to locate the primitivity at issue than in what makes it the case that certain goings-on are axiomatic/fundamental—that is, in these being *primitively given* as the basis for the theoretical or worldly system at issue?

Third, *Primitivist Fundamentalism* is consonant with certain intuitive and heuristic characterizations of the fundamental goings-on. Related to the analogy to axioms, there is an intuitive and common characterization of the fundamenta according to which they are *starting points* for all else (at a world). In taking the fundamenta to be primitively specified, not metaphysically

determined or analyzable in terms of anything else, *Primitivist Fundamentality* straightforwardly accommodates the starting points intuition. By way of contrast, it is not immediately clear how non-primitivist accounts can make sense of the starting points intuition. For if what makes it the case that some *F*s are fundamental at a world is determined by some *other* goings-on at the world—call these the *FD*s, for ‘fundamentality determiners’—then—one might naturally assume—the *FD*s, not the *F*s, are the *real* starting points at the world. Similarly for a frequently invoked heuristic characterization of fundamentality, according to which the fundamental goings-on at a world are ‘all God had to do, or create’.⁵³ Per this heuristic, in order to create a world *w*, God doesn’t (in the usual case) have to create *everything* at *w*; having created the fundamenta, God is off the hook so far as creating the non-fundamenta is concerned (presumably because these result from the fundamenta via some or other metaphysical dependence relations). *Primitivist Fundamentality* can easily accommodate this aspect of the heuristic, as reflecting that (in the usual case) some but not all goings-on at a world are primitively specified as fundamental. By way of contrast, it is not immediately clear how standard non-primitivist accounts can do so. If the fundamental goings-on are those that do not metaphysically depend on *any other* goings-on, wouldn’t God have to create *all* the goings-on before there would be a fact of the matter about which goings-on failed to depend on any others? And if the fundamental goings-on are those in a minimal set upon which *all else* metaphysically depends, wouldn’t God have to create *all* the goings-on before there would be a fact of the matter about what minimal basis they all metaphysically depended upon? It may be that non-primitivists can think of some way of accommodating these intuitive and heuristic characterizations, or they may reject these characterizations as misguided. My present point is just that *Primitivist Fundamentality* doesn’t face even a *prima facie* difficulty accommodating these characterizations.

2.2 Metaphysical dependence

The understanding of metaphysical dependence operative in Fundamentality First is a pluralist account, taking the following form:

Pluralist Metaphysical Dependence: What makes it the case that some goings-on at a world *w* metaphysically depend on other goings-on at *w* is a matter of the holding of diverse metaphysical relations, which against the backdrop specification of what is fundamental at *w* serve as metaphysical dependence relations.

The initial and specifically pluralist suggestion here is that metaphysical dependence is a matter of the holding of various metaphysical relations—parthood, determinable-determinate, functional realization, and so on. Key to the view, however, is that with few exceptions (set-membership, perhaps), these relations do not come with a fixed or ‘built-in’ direction of priority: different instantiations may be associated with different directions of priority (or with no direction at all).

⁵³Two among many expressions: “To speak metaphorically, “all God had to do” was to create the primarily real” (Schaffer 2004, 99–100); “We often explain the notion of fundamental reality in intuitive terms by saying that all God had to do in order to create the world was fix the fundamental facts” (Glazier 2016, 35).

Rather, what (if any) direction of priority is associated with a metaphysical relation entering into *Pluralist Metaphysical Dependence* is ultimately a matter of which goings-on are primitively specified as fundamental. Instantiated against such a backdrop, the relations at issue serve as (or, as Dana Goswick aptly put it, play the role of) metaphysical dependence relations. Hence in contrast with most accounts of metaphysical structure on offer, on my view metaphysical dependence is (the few exceptions aside) not *just* a matter of the holding of any specific metaphysical relation (e.g., Grounding) or relations (e.g., building relations). In my (2014), I called metaphysical relations understood as operative against a backdrop specification of what is fundamental ‘small-g grounding relations’ or just ‘small-g relations’. Here I’ll continue to speak of ‘small-g’ relations as a way of referring to the ‘metaphysical dependence’ relations at issue in *Pluralist Metaphysical Dependence*.

2.2.1 Fixing priority

I will later say more about how to demarcate the metaphysical relations entering into *Pluralist Metaphysical Dependence*. But to see how the two components of Fundamentality First jointly enter into determining metaphysical structure, it will suffice to keep in mind the usual suspects.

Recall that attention to the debate between priority Monists and (say, Atomist) Pluralists, and to many other debates, suggests that the metaphysical relations typically appealed to as serving as metaphysical dependence relations—parthood, determinable-determinate, functional realization, and so on—do not come with a fixed or ‘built-in’ direction of priority. Correspondingly, the following crucial question arises: what more is needed for instances of such metaphysical relations to be associated (or not) with (perhaps different) directions of priority—that is, for instances of these relations to count as instances of a metaphysical dependence relation? As I’ll now set out, on Fundamentality First, the direction of priority (if there is one) associated with an instance of a metaphysical relation capable of serving as a metaphysical dependence relation is, either directly or indirectly, a function of what is antecedently primitively specified as fundamental. (Note that once the metaphysical relation is understood as instanced against the backdrop specification of what is fundamental, it is thereby deemed a metaphysical dependence relation, whether or not the instance is associated with a direction of priority.) There are two cases to consider:

1. *Cases where at least one ‘argument’ of the instance of the metaphysical dependence relation is occupied by fundamenta.*

If all the relata of the instance of the relation are fundamenta, the instance of the relation is not associated with any direction of priority: all fundamenta are on a par, so far as priority is concerned.

If the instance of the relation connects some fundamenta with some non-fundamenta (i.e., some goings-on which are not part of the primitively specified fundamental base), then priority will run from the fundamenta to the non-fundamenta. For example:

- *Given* that the Cosmos is the only fundamental entity, then instances of parthood holding between the Cosmos and its proper parts point from whole to part, so that “every proper

part of the cosmos depends on the cosmos”.

- *Given* that the atoms are the only fundamental entities, then instances of parthood holding between the atoms and mereological fusions of the atoms, including the Cosmos, point from parts to whole, so that “the cosmos depends on some of its proper parts”.

Similarly for features (properties, relations, and other ways for entities to be):

- *Given* that the fundamental properties are exclusively maximal determinates, then instances of the determinable-determinate relation holding between these determinates and their determinables will point from determinate to determinable.
- *Given* that among the fundamental properties are determinables whose determinates are not among the primitively specified base, then instances of the determinable-determinate relation holding between these determinables and their determinates will point from determinable to determinate.

2. *Cases where the ‘arguments’ of the instance of the metaphysical dependence relation are occupied only by non-fundamenta.*

Here the direction of priority (if there is one) of the instance of the metaphysical dependence relation holding between the non-fundamenta is fixed indirectly. In the past, I maintained that for better or worse, no algorithm generating answers to this sort of question could be expected; rather, substantive metaphysics would have to be done. I now think that there may be something akin to an algorithm, after all: namely, to consider how each of the non-fundamenta are small-g generated by the fundamenta, and see whether, and if so how, the holding of these instances of metaphysical dependence associate a specific direction of priority with the instance of whatever small-g relation holds between the non-fundamenta.

By way of Atomist illustration: suppose that the only fundamental entities are atoms, that non-fundamentum A is a fusion of fundamental atoms, non-fundamentum B is a fusion of fundamental atoms, and A stands in the (proper) parthood relation to B. Is A prior to B, B prior to A, or neither? The holding of the parthood relation between the atoms and A does not require the holding of the parthood relation between the atoms and B; in fact, the holding of the parthood relation between the atoms and A is compatible with B’s not existing at all, and so with there being, a fortiori, no instance of the parthood relation between A and B. By way of contrast, the holding of the parthood relation between the atoms and B does require the holding of the parthood relation between the atoms and A. The holding of the parthood relation between the atoms and B is thus posterior to the holding of the parthood relation between the atoms and A, and so the holding of the small-g relations between A and the fundamenta, and B and the fundamenta, associates a specific direction of priority with the parthood relation between A and B—namely, as running from part A to whole B. That said, variations on the atomist theme could allow for some non-fundamental wholes to be prior to (or on a priority par with) non-fundamental parts—if, say, the small-g generated

nature of the non-fundamental parts were (as per Aristotle’s eye, which is an eye ‘in name only’ unless it is part of a human body) such as to essentially refer to an associated whole.

By way of Monist illustration: suppose that the only fundamental entity is the Cosmos, that non-fundamentum A is a proper part of the Cosmos, non-fundamentum B is a proper part of the Cosmos, and A stands in the (proper) parthood relation to B. Is A prior to B, B prior to A, or neither? Before we can answer this question, we need to look more closely at how A and B are small-g generated from the Cosmos. The Cosmos is a whole with parts, but it is also an “entangled system”, and as such its parts are “dependent abstractions from their whole” rather than (as on atomism) a “derivative construction from its parts” (Schaffer 2010, 31–2). Now, is B also an entangled system? If so, then its parts, including A, would also be ‘dependent abstractions from their whole’ (that is, B), whereas B would not be either a dependent abstraction from (or for that matter, a derivative construction from) A. In that case the small-g relations generating the non-fundamenta associate a specific direction of priority with the parthood relation between A and B—namely, as running from whole B to part A. But are B and A qua dependent abstractions from the Cosmos required to be integrated wholes? If not, then perhaps one could run the same line as in the atomist case, according to which the priority of the parthood relation between A and B runs from part A to whole B. I say ‘perhaps’ since it’s not completely clear to me that, even if A and B are non-integrated parts of an integrated whole, the holding of the parthood relation between A and the Cosmos is compatible with B’s not existing at all. Maybe it isn’t, in which case perhaps the thing to say would be that A and B are on a par, priority speaking. So my suggested somewhat-algorithmic strategy doesn’t get one off the hook from doing substantive metaphysics; it just serves (I hope) to bring some order to the project.

These cases exhaust the possibilities for fixing priority. In each case, the direction of priority (if there is one) associated with an instance of a metaphysical dependence (small-g) relation, and hence *what metaphysically depends on what* (parts on wholes, *vice versa*, or neither? determinables on determinates, *vice versa*, or neither?), is directly or indirectly a function of what is fundamental.⁵⁴ Hence it is that fundamentality really is ‘first’ so far as metaphysical structure is concerned.

2.3 Priority in a world with no fundamental level?

Before continuing on, I want to register and respond to a concern with this account of priority fixing. On Fundamentality First, what (if any) direction of priority is associated with an instance of a metaphysical dependence relation is fixed, directly or indirectly, by the primitive specification of what is fundamental. But then, one might think, a proponent of this view must either reject the seeming possibility of worlds with no fundamental level,⁵⁵ or accept that in such worlds, there are

⁵⁴Is ‘a function of’ a metaphysical dependence relation? I’m inclined to say no, but I can grant that it is such a relation, so long as it has a fixed direction of priority—as is compatible with my supposition that many or most metaphysical dependence relations do not have a fixed direction of priority.

⁵⁵It is worth registering that fundamenta do not in general need to occupy the same ‘level’, however construed. For example, strongly emergent phenomena are fundamental but exist at a ‘level’ different from the fundamental

no priority relations (besides those with built-in directions of priority—set membership, perhaps; I henceforth put these aside). As Schaffer (2016) puts it:

[The need for fundamentality] makes trouble for Wilson in scenarios in which there is no fundamental level at all, but just a limitless descent of every deeper structure. If such a scenario is metaphysically possible, it is trouble for Wilson, for Wilson can attribute no metaphysical structure to it—when nothing is [...] fundamental, Wilson’s primitive gives no guidance. (196)

Now as stated, the scenario is compatible with a Monist view, in which case there’s no difficulty here—it’s just that the fundamenta entering into the fixing of priority on my account would be Cosmic rather than atomic. But suppose that no alternative fundamental level is available; what then? My favoured response appeals to a ‘convergence’ strategy (one of two offered in Wilson 2016b) for making sense of priority in the absence of a fundamental level. As I previously put it:

The suggestion here extends Montero’s (2006) observation that “even successive decompositions can still bottom out into something fundamental. For example, just as the infinite decreasing sequence of numbers $1/2, 1/3, 1/4 \dots$ is still bounded below by zero, there could be infinite descending sequences of decompositions, with fundamental entities below them all” (179). What I furthermore add (or take away) from Montero’s line of thought is that even if the goings-on in the limit do not exist, the valence of priority may still be established by reference to goings-on in this limit, much as the thermodynamic properties and behavior of a gas are properly modeled as non-fundamental features of statistical mechanical collections in the “thermodynamic limit”, as the number of particles and the volume each approach infinity. In other words, goings-on in the limit may act as a fundamental level. (187)

Even though the thermodynamic limit is never reached—the number of particles or volume in a given case is never actually infinite—the convergence to the associated limit is taken to establish that thermodynamic features depend on statistical mechanical features, rather than *vice versa*. So, I suggest, might also be the case in worlds converging on a fundamental level ‘in the limit’.

The availability of the convergence strategy indicates that fixing priority on Fundamentality First does not require that there be an absolutely fundamental level. But what about worlds with no fundamental level and moreover no associated fundamental ‘joint’? In such worlds, my account predicts that there are no priority relations. But do such worlds in fact make trouble for me? On the contrary, it seems to me that this is just what one should expect. Indeed, even Schaffer (2010) himself appears to agree that priority requires a fundamental level:

There must be a ground of being. If one thing exists only in virtue of another, then there must be something from which the reality of the derivative entities ultimately derives. (37)

For recall the ‘all God had to do’ heuristic: in the envisioned circumstances where nothing whatsoever serves as a fundamental level, God would have to bring *everything* into being. But then, physical goings-on upon which they partly depend. This point noted, I’ll stick with talk of a ‘fundamental level’ for continuity with previous literature.

according to the heuristic, everything would be on a par, priority-wise. By lights of the heuristic, the supposition that there are priority relations in worlds without a fundamental level (or corresponding metaphysical joint) makes no sense. But in that case, ruling out priority relations in such worlds is an advantage, not a cost, of my view.

2.4 Demarcating the relations at issue in *Pluralist Metaphysical Dependence*

Which metaphysical relations are suitable for entering into *Pluralist Metaphysical Dependence*—that is, for serving as metaphysical dependence relations? An initial, broadly ostensive answer reflects the motivations for this account—namely, the appeal, in views presupposing metaphysical structure, to diverse metaphysical relations, whose instances (against a backdrop supposition of what goings-on are fundamental) are frequently (though not universally, as in cases of mutually dependent fundamenta) associated with a direction of priority. These metaphysical relations include type/token identity, the parthood relation, the property instantiation relation, functional and other forms of realization, mechanistic or causal varieties of composition, the constitution relation, the determinable/determinate relation, the set membership relation, and so on.

Such a broadly ostensive demarcation of the relations capable of serving as metaphysical dependence relations in my account—for simplicity henceforth: just the metaphysical dependence relations—is useful to get the ball rolling so far as applying the account, but it would be advantageous from a theoretical point of view if something more systematic could be said. Here I’ll start by saying what I think can’t be said—namely, that the metaphysical dependence relations at issue are formally unified (see Wilson 2014 and 2018). Type and token identity are reflexive and symmetric; determinable-determinate is irreflexive and asymmetric; parthood is transitive whereas set membership is not.⁵⁶ But these are all paradigmatic metaphysical dependence relations—that is, relations which against a backdrop supposition of what is fundamental are plausibly offered as establishing that some goings-on not in the fundamental base are non-fundamental—not just historically, but in ongoing debates over the status of physicalism. So to my mind there’s no hope of formally unifying the metaphysical dependence relations, either directly or indirectly.⁵⁷

The lack of any formal or related unity among the metaphysical dependence relations informs (among other things) my rejection of the supposition that there is a generic relation or notion—

⁵⁶There’s a large literature registering counterexamples along these lines; see, e.g., Bliss 2014, Wilson 2014, Barnes 2018, Rodriguez-Pereyra 2016, and many others. Other purported common features of metaphysical dependence are also subject to counterexample; see, e.g., Skiles 2015 against the supposition that grounding relations are necessitating, and Wilson 2016*b* against the supposition that metaphysical dependence relations are unified as apt for being modeled using structural equations.

⁵⁷Raven (2017) suggests that I may be talking past those who take Grounding to result from ‘abstracting from *in virtue of* questions’ rather than metaphysical dependence relations. I don’t see how this helps, though, however the abstraction from such questions proceeds. If one wants to motivate generic causation via causal questions, presumably this would involve abstracting from the specific forms of causation offered as answers to such questions. On this model, since the formally disunified relations are offered as answers to *in virtue of* questions, formal disunity remains. If the idea is rather that Grounding is abstracted from answers to such questions qua explanations, where the latter are supposed to be formally unified, then I reply that, first, to posit Grounding as a kind of ‘metaphysical explanation’ conflates (I insist) metaphysics and epistemology, and second, in any case explanations also fail to be formally unified (in particular, as a partial order), since there can be coherentist, non-viciously circular, and self-evident or self-justificatory explanations (see Bliss 2014 for related remarks).

primitive or not—of metaphysical dependence, of the sort that might serve to unify such relations. But in that case, one might wonder, how can I distinguish relations clearly not suited to serve as metaphysical dependence relations from those which are capable of doing so? For example, my laptop bears the relation *is less than a mile from* to a fundamental particle in the next room, but presumably there is no metaphysical dependence between the two. But why not?

The question of how the domain of metaphysical dependence relations is to be demarcated is a good one. Here I register three options for doing so, each of which strikes me as promising. I'm not settled on any one; this seems to me to be a choice point so far as implementing *Pluralist Metaphysical Dependence* is concerned. In any case that there are various promising options indicates that there's no in-principle difficulty here for Fundamentality First.

The first option is that metaphysical dependence relations are those capable of playing a certain role according to which, roughly speaking, the existence or instantiation of some goings-on (e.g., entity or feature), on a given occasion, is partially or entirely constituted by the existence or instantiation of some (in the usual case, other) goings-on. A few points to note:

- Insofar as (on my view) x might metaphysically depend on y but x and y be equally fundamental, the role here is not to be understood as necessarily tied to capturing what it is for some goings-on to be less fundamental than some others. Relatedly, it's not an option for me to demarcate the set of metaphysical dependence relations as being those that (always, much less uniformly) induce a relation of relative fundamentality (compare McDaniel 2017, 242).
- In general, the triggering of the capability of metaphysical relations to play the role in question requires some or other primitive specification of what is fundamental, as per the operative account of priority-fixing on Fundamentality First.
- The notion of 'constitution' at issue in this characterization of the role that metaphysical dependence relations play is intuitive, and in particular is not intended to refer (only) to whatever relation is supposed to be operative in debates over material constitution. The intuitive conception is broad enough (unlike, e.g., the notion of containment) to make room for the diverse forms of metaphysical dependence.
- The role at issue is in a certain respect narrowly specified, in concerning the partial or entire constitution of some goings-on on some (typically other) goings-on on a given occasion, as opposed to concerning something more encompassing—e.g., the constitution of 'being F' or F's 'essence' by 'being G' or G's 'essence'. This restriction is useful in making room for some metaphysically dependent goings-on to have different dependence bases on different occasions, as in cases of multiple realizability.

The second option is that the metaphysical relations apt for serving as metaphysical dependence relations are internal relations. Some suggest (e.g., Schaffer, as discussed in McDaniel 2017, 231) that grounding is an internal relation in the Lewisian sense according to which the relation does not differ between duplicate pairs. And in my (1999), I argue that what is key to a supervenience

(more generally: realization) relation’s preserving physical acceptability is that it entail the holding of a certain internal relation:

For empirical properties, it suffices to ensure the physicalistic acceptability of properties supervening on physicalistically acceptable base properties (where the properties are instantiated in the same individuals) that the sets of causal powers associated with supervenient and base properties stand in an appropriately formulated *internal* relation. In particular, each individual causal power in the set associated with a given supervenient property must be numerically identical with a causal power in the set associated with its base property. Satisfying this constraint on causal powers is all that is needed to render supervenience superduper. (34–5)

Following Armstrong’s discussion, an internal relation is one that is dictated solely by the natures of the relata, and is such that, given certain entities with certain natures, the relation must hold between the entities. (45)

In this discussion, I contrasted the kind of intimate relation required for (a physicalist variety of) metaphysical dependence with the sort of non-dependence relation above:

Self-identity is the paradigmatic case of an internal relation; given any existent, then the simple fact of its existing guarantees that the relation holds. In contrast, spatiotemporal relations and causal relations are paradigmatically external relations. Given my nature and the nature of my bookcase, I might or might not stand in the relation of being six feet from my bookcase; given the nature of these chemicals and the nature of that explosion, the first might or might not have caused the second. (46)

Generalizing, a second promising strategy would be to take the metaphysical relations entering into *Pluralist Metaphysical Dependence* to be internal relations, so that, e.g., on Lewis’s conception of internality (which might fit better with my focus on occasions of metaphysical dependence), duplicates of parts and wholes would stand in the parthood relation. Two things to note:

- Contra Schaffer, I would not maintain that any given direction of priority associated with such a relation would be thereby preserved, since the world of the duplicates might be one with a different primitive specification of the fundamentum or fundamenta.
- The strategy of taking the relations covered by *Pluralist Metaphysical Dependence* to be internal relations is open to me, notwithstanding that identity is an internal relation, since I maintain and elsewhere argue (see Wilson 2014, 2019) that identity can serve as a metaphysical dependence relation—indeed, one capable of being associated with a direction of priority.

The third option is that metaphysical dependence relations are what McDaniel (2017) calls ‘analogous’ relations, where “analogous features are something akin to disjunctive properties, but they aren’t merely disjunctive. Analogous features enjoy a kind of unity that merely disjunctive features lack: their specifications are, to put it in medieval terms, unified by analogy” (51). Indeed, McDaniel suggests that “the thick pluralist [who maintains that each specific relation of grounding

just is one of the small-g relations] should probably say that [specific grounding relations] are analogue instances of the generic” (250).

So there are some promising strategies here—promising in particular in not entailing that there is a core, much less primitive, generic metaphysical relation of the sort that proponents of primitive Grounding advance. For example, that various relations satisfy the role above would not entail that there is a generic (much less primitive) such relation, any more than the existence of diverse wine-bottle-openers entails that there is a generic (much less primitive) such opener.

2.4.1 Two preliminary motivations for *Pluralist Metaphysical Dependence*

Here I offer two preliminary motivations for *Pluralist Metaphysical Dependence*, again by way of filling in my own leanings.

First, *Pluralist Metaphysical Dependence* is highly ecumenical as regards what metaphysical dependence relations there might be. As above, in the first instance there is here a kind of ostension to the views presupposing metaphysical structure, as providing a working collection of metaphysical relations capable of serving as metaphysical dependence relations, and I have offered various promising strategies for more precisely demarcating the set of metaphysical relations apt for serving as metaphysical dependence relations. Most crucially, since *Pluralist Metaphysical Dependence* does not impose any specific formal features on metaphysical dependence relations, it does not rule out of court any currently live views adverting to this or that specific relation of metaphysical dependence. By way of contrast, deflationary and anti-realist accounts of metaphysical dependence⁵⁸ rule all such relations out of court. Grounding-based approaches commonly stipulate that Grounding, along with any specific dependence relations with which it is associated, is a partial order (irreflexive, asymmetric, and transitive) that is moreover hyperintensional; and Bennett maintains the same for the building relations entering into her account. But as above, even these fairly weak constraints (weak in being also satisfied by relations, like causation, which are traditionally supposed to contrast with metaphysical dependence relations) are strong enough to rule out many of the views constituting our data. What this all comes to for the accounts imposing such constraints is still very much up in the air. In any case, since *Pluralist Metaphysical Dependence* doesn’t impose any such constraints, it doesn’t rule out any metaphysical relations which fail to conform to them; and as such is highly ecumenical.

A second motivation for *Pluralist Metaphysical Dependence* is that (as I argue in Wilson 2014, 2018 and elsewhere) appeal to such specific metaphysical relations is required in order for investigations into metaphysical dependence to proceed. As attention to these investigations (whether in religion/cosmology, science, or philosophy) reveals, which metaphysical relation is posited as holding in a given case is crucial to assessing an associated dependence claim. And this is because different dependence relations will often make a difference to the ontological, metaphysical, and causal status of the dependent goings on—to whether dependent goings-on are (type or token) distinct from dependence base goings-on; to whether dependent goings-on are efficacious, and if so

⁵⁸At least of the sort generating (broadly hierarchical) metaphysical structure; see §3.3 for discussion.

to whether they are distinctively efficacious as compared to dependence base goings-on; to whether dependent goings-on may depend on different base goings-on; and so on. The identification and assessment of specific metaphysical dependence relations as potentially operative (or not) in a given case is indispensable for investigations into what depends on what; and so it makes good sense to acknowledge and incorporate this diversity, as *Pluralist Metaphysical Dependence* does.

3 Accommodating the desiderata

With Fundamentality First on the table, I am now in position to argue that the approach nicely satisfies the operative desiderata on an account of metaphysical structure, including *ecumenicality*, *interpretive non-revision*, *ontological parsimony*, *methodological consonance*, and the *unfixedness of priority*. Along the way, I will suggest that the *Deflationist*, *Grounding-based*, *Building-based* package deals serving as my foils do not do as well. But again, my primary goal is to establish that Fundamentality First is a live and indeed quite attractive contender, by certain reasonable methodological lights.

3.1 Fundamentality First is ecumenical

Fundamentality First is highly ecumenical, in not ruling out as a matter of definition any of the seemingly intelligible views presupposing metaphysical structure which serve as our data. This follows from the fact that each component of Fundamentality First is highly ecumenical as regards the goings-on within its purview. As above, *Primitivist Fundamentality* is highly ecumenical as regards accommodating diverse views of which goings-on are or might be fundamental: if what makes it the case that some goings-on at a world are fundamental is metaphysically primitive, no antecedent restrictions are placed on which goings-on might or might not be fundamental, beyond those which would attach to any fundamental base. And as above, *Pluralist Metaphysical Dependence* is highly ecumenical as regards accommodating diverse views of which goings-on metaphysically depend on which others, placing no antecedent formal restrictions on which relations might potentially serve as metaphysical dependence relations, while at the same time (via one of the three aforementioned strategies) properly demarcating relations that are suited to serve as metaphysical dependence relations from those that are not. Of the realist package deals which are my foils, neither *Grounding-based* nor *Building-based* approaches are as ecumenical as *Fundamentality First*, for reasons already discussed. (I leave aside *Deflationary* accounts here, since the question of accommodation is in a sense moot—or postponed to the question of interpretive revisability.)

3.2 Fundamentality First is interpretively non-revisionary

Fundamentality First is interpretively non-revisionary, in the sense that applications of the account to views presupposing metaphysical structure are generally capable of preserving the intended interpretations of the views at issue. I noted above that this desideratum indirectly pushes towards realist accounts of metaphysical structure, since the views constituting the relevant data are nearly

all advanced in realist terms, as being about the structure of fundamental or non-fundamental reality. Correspondingly, Fundamentality First does better at satisfying this desideratum than any *Deflationist* account of metaphysical structure. For even if such a deflationary approach is capable of preserving the truth values of claims about what is fundamental, or about what metaphysically depends on what, it remains that from the perspective of accommodating the intended interpretation of the claims at issue, deflationary approaches are to some extent revisionary. For example, a package deal coupling a truth-making account of fundamentality with an anti-realist account of metaphysical dependence will not be able to accommodate the non-reductive physicalist’s intended conception of broadly scientific reality as exhibiting a leveled structure, corresponding roughly to the special and more fundamental sciences. Fundamentality First also does better at accommodating the desideratum than my realist foils; for as per the previous section, *Grounding-based* and *Building-based* approaches each antecedently rule out certain views presupposing metaphysical structure, and so a fortiori cannot accommodate any such views on their own terms.⁵⁹

3.3 Fundamentality First is ontologically parsimonious

The components of my package deal are (a) primitive fundamentality and (b) various ‘off the shelf’ metaphysical relations, which against the backdrop specification of what is fundamental serve as metaphysical dependence (small-g) relations. Recall that the notion of metaphysical primitivity at issue in *Primitivist Fundamentality* is not one corresponding to any specific ontological posit; even so, I’m happy to grant that the primitive aspect of *Primitivist Fundamentality* constitutes an ontological cost of some sort. As such, is my preferred package deal at any ontological disadvantage as compared to my foils? I’ll now argue that it is not—in part for reasons having to do with the need to accommodate *the unfixedness of priority*.

First consider *Deflationary* package deals, coupling a minimal basis (e.g., truth-making) account of fundamentality with general skepticism about dependence or determination relations. The views at issue (see especially Heil 2003*b* and Norton *et al.* 2018) typically target higher-level goings-on of the sort that, e.g., non-reductive physicalists endorse as metaphysically dependent, one way or another, on lower-level fundamental physical goings-on. And the usual suggestion is that talk of purportedly higher-level goings-on can be accommodated, not as expressing the existence of any distinctive higher-level goings-on, but rather as a pragmatically or conventionally motivated way of expressing the holding of certain inexact similarities between the lower-level physical goings-on that the deflationist takes to exist.

Now, what are the ontological commitments associated with such a *Deflationist* approach to

⁵⁹There is much more to say about this desideratum, which as previously noted encodes other desiderata, reflecting that the metaphysical dependence relations at issue in views presupposing (broadly hierarchical) metaphysical structure are typically offered as illuminating the nature and ontological status (e.g., as causally efficacious, or not) of dependent goings-on; as closing explanatory gaps between dependence base and dependent goings-on; and so on. I believe, but cannot substantiate here, that there are further advantages here for Fundamentality First over certain package deals. For example (as I’ve argued elsewhere; see especially Wilson 2014 and 2018), the specific relations posited by *Pluralist Metaphysical Dependence* can, while a generic primitive Grounding relation or notion can’t, close explanatory gaps.

metaphysical structure? As proponents present their view, it requires no commitment to any of the metaphysical relations usually offered as serving as metaphysical dependence relations; hence Norton *et al.* (2018) describe what they call ‘Flatland’ as the view that “there exist neither determination nor dependence relations”. Supposing so, then it would seem that such a deflationary package deal is committed only to whatever commitments eventuate from the operative account of fundamentality. If one maintains that dependence relations do not exist, then one will presumably not endorse accounts of fundamentality cashed in independence-based or in minimal dependence base terms, since these views presuppose that dependence relations exist (and can hold or not hold, as the case may be). This may explain why proponents of deflationary accounts most commonly take the fundamenta serving as truthmakers for claims about purportedly higher-level goings-on to be simply given, in line with *Primitivist Fundamentality*. As such, Deflationist package deals might appear to be ontologically less costly than Fundamentality First, according to which accommodating metaphysical structure also involves, besides the primitive specification of what is fundamental, the further posit of metaphysical relations serving as metaphysical dependence relations.

The ontological calculation is more complicated than this, however. For even if one *grants* that the appearances of higher-level structure can be given a deflationary treatment, this much does not show that metaphysical dependence relations are not needed on a *Deflationist* approach to metaphysical structure. For even eliminativists about metaphysically dependent higher-level goings-on are committed to there being metaphysical dependence relations, which moreover are associated with directions of priority, at the one ‘level’ that they think exists. Consider how Heil goes about justifying the truth of claims purportedly about higher-level goings-on:

I am inclined to think that ‘this is a statue’ can be, and often is, literally true. What makes it true is a complex, dynamic, arrangement of particles. [...] We deploy predicates like ‘is a statue’ to mark off salient features of the world. These features are grounded in properties and arrangements of the fundamental constituents. (2003a, 217)

For Heil, truths about seemingly higher-level goings-on are made true by “complex, dynamic, arrangement[s] of particles”, and by “properties and arrangements of the fundamental constituents”. But presumably Heil will agree, *qua* physicalist, that these arrangements are *less* fundamental, and metaphysically dependent on, the physical particles and (spatial, mereological, causal) relations constituting the arrangement. So even though Heil is not (on his view) committed to there being *higher-level* metaphysically dependent goings-on, he is nonetheless committed to metaphysical structure as operative within the level he accepts, as are Norton *et al.* (2018), who offer a similar story about the basis for higher-level truths. The same will be true for higher-level deflationists that reduce rather than eliminate higher-level goings-on (e.g., Ney, 2010), taking seemingly higher-level goings-on to be identical with some or other (typically massively complex) configurations of physical goings-on. For example, a reductionist will typically suppose that any given table, statue, or tree is identical to some massively complex micro-configuration (plurality or a structural aggregate), or to some further ‘ontologically lightweight’ (e.g., disjunctive) combination of such

micro-configurations.⁶⁰ But though the reductionist will maintain that any such configurations are properly placed at the one ‘level’ that they think exists, they distinguish between the (absolutely) fundamental or ‘basic’ physical goings-on, and those (comparatively) non-fundamental configurations that are completely metaphysically dependent on their more fundamental constituents.

A moral of the preceding discussion is that we must not confuse skepticism about ‘higher levels’ with skepticism about metaphysical structure; for whether eliminativist or reductionist, those rejecting higher levels are clearly committed to there being metaphysical structure as relevant to the complex configurations that they take to serve as the truth-making or metaphysical basis for claims about or appearances of higher-level reality. Hence a *Deflationist* approach *is* committed to there being metaphysical relations serving as metaphysical dependence relations, as part of their package deal. Given that they are plausibly (at least as stated) also committed to a primitivist account of fundamentality, such accounts are ontologically on a par with Fundamentality First.

Next, consider *Grounding-based* package deals, cashing metaphysical dependence in terms of primitive generic Grounding.⁶¹ As I have previously argued (in Wilson 2014, 2018, and elsewhere), proponents of Grounding must also countenance the metaphysical relations serving as metaphysical dependence (small-g) relations; for (bracketing concerns that the stipulated features of Grounding antecedently rule out seeming forms of metaphysical dependence) Grounding qua generic cannot distinguish between the importantly different dependence relations that do fall under its rubric. After all, metaphysical investigations do not stop just with bare claims of dependence (as in the schematic formulation of physicalism as the doctrine that all broadly scientific goings-on are ‘nothing over and above’ lower-level physical goings-on), but rather take such claims as the (working, hypothetical, or antagonistic) starting point of investigations into and associated debates about what more specific forms of metaphysical dependence—functional or other forms of realization? the determinable-determinate relation? mereological composition? mechanistic constitution? and so on—might or might not be in place. Indeed, independent of my arguments to this effect, no proponents of Grounding of whom I am aware deny that there are specific metaphysical relations serving as metaphysical dependence (small-g) relations. Indeed, as above, proponents of Grounding typically offer as a primary motivation for their primitive posit that Grounding in some sense unifies the specific metaphysical dependence relations. So it is reasonable to assume that proponents of the second package deal are also committed to small-g relations.

Now, if a *Grounding-based* package deal takes not just Grounding but also fundamentality to be primitive (as Fine appears to do in his 2001), then it is less ontologically parsimonious than Fundamentality First, since it countenances all the components of my package deal, plus an additional primitive (Grounding). More commonly, however, a *Grounding-based* package deal couples primitive Grounding with an independence-based account of fundamentality (as per, e.g., Schaffer 2009 and Rosen 2010). Indeed, a stated advantage of a Grounding-based approach to

⁶⁰Or something yet more fundamental, as per Ney’s (2021) wave function realism.

⁶¹Since Grounding was first introduced, the notion or relation has multiplied, with different proponents endorsing one or more variations on the theme (associated, e.g., with different formal constraints). If anything, this diversity will add to the primitive type-level costs of a Grounding-based package deal, so it is safely ignored.

metaphysical structure is that it provides the basis for a reductive independence-based account of fundamentality, on which what makes it the case that some goings-on are fundamental is that they are un-Grounded.⁶² On the face of it, one might think, such a *Grounding-based* package deal is on an ontological par with Fundamentality First (see Schaffer 2016 for discussion); for both package deals countenance certain specific metaphysical relations serving as metaphysical dependence (small-g) relations, and in addition each has one primitive: Grounding in their case, fundamentality in mine. In that case, Fundamentality First, and a *Grounding-based* view analyzing fundamentality as the un-Grounded, would seem to be on a par as regards ontological parsimony (as Schaffer suggests in his Schaffer 2016).

But attention to the unfixedness of priority reveals that ontologically speaking, matters are far worse for any *Grounding-based* package deal. Recall the debate between Monists and (Atomist) Pluralists: each accepts that the Cosmos and the atomic parts stand in the parthood relation, but they disagree over which is prior to which. More specifically, they disagree over whether the specific instance of the relation between the atomic parts and the Cosmic whole points from parts to whole, or *vice versa*; for as previously, the Monist and the Pluralist can each allow that different instances of the parthood relation, holding between non-fundamenta (e.g., tables and table-parts), point in a different direction than that between the atomic parts and the Cosmic whole. As such, proponents of Grounding are sensitive to the unfixedness of priority; moreover, they have an answer to the question of what fixes the direction of priority (where such exists) between different instances of small-g relations, such as parthood: it is Grounding that does so, in any given case. Effectively, Grounding is a primitive priority-fixer.

But now observe that insofar as the direction of priority that Grounding bestows on a given instance of a small-g relation such as parthood (say, holding between atomic parts and Cosmic whole) does not constrain the direction of priority that Grounding bestows on any different instance of that relation (say, holding between the table and the table-parts), each such bestowal is unconnected to any other, and so constitutes a new primitive fact. Hence any package deal on which priority is fixed by Grounding is committed not just to one primitive but to indefinitely many: one for each case where an instance of a small-g relation is associated with a direction of priority. *Grounding-based* package deals thus turn out to be massively more ontologically unparsimonious than Fundamentality First, since on the latter package deal, there is just one primitive specification (that involved in specifying which goings-on are fundamental), not indefinitely many (one for each instance of a metaphysical dependence relation involving a difference in priority).

Finally, what about a *Building-based* package deal, coupling building relations with an independence-based account of fundamentality as the un-built, as developed in Bennett 2017? Bennett's package deal might appear to be more ontologically parsimonious than mine, since both package deals countenance a plurality of metaphysical dependence relations, but her package deal analyzes fundamentality in terms of an absence of building, and so unlike mine appears not to incur an additional

⁶²Alternatively, a proponent of Grounding might offer a reductive minimal-basis analysis of fundamentality, on which to be fundamental is to be part of a minimal basis upon which everything is Grounded. The remarks to follow would also attach to this package deal.

ontological cost so far as accommodating fundamentality is concerned. As I'll now argue, however, attention to the unfixedness of priority reveals that the impression of advantage here for Bennett's *Building-based* package deal is illusory.

Again, the metaphysical relations serving as dependence relations, and which Bennett cognizes as 'building' relations, do not come with fixed directions of priority. Something more is needed to fix the direction of priority (where it exists) of instances of these relations. What does so, on a *Building-based* account, understood as involving a commitment to an independence-based account of fundamentality?

Three options are salient. The first is to posit Grounding as a primitive priority-pointer; but Bennett is inclined to reject Grounding, and in any case to introduce Grounding as fixing the priority of instances of building relations would render her *Building-based* package deal massively unparsimonious, for the reasons just discussed.

The second is to take the priority associated with instances of building relations to be fixed by convention. Bennett suggests such an answer in explicating her third, 'generative', requirement on building relations "in terms of what we can correctly *say*" (58). There she notes that this requirement leaves open what underpins the correctness of generative talk, and registers being inclined to take this underpinning to be "a matter of convention" (59). As she later fills in: "The world (presumably) decides which relations are asymmetric, irreflexive necessitation relations; but *we* conventionally choose which subset are generative, and these are the building relations" (185). Insofar as conventions are not (relevantly) additional metaphysical posits, this understanding of a *Building-based* package deal might in principle be more ontologically parsimonious than Fundamentality First. But a conventionalist approach is unsatisfactory (even apart from the *Deflationist* implications). For there is no agreement, conventional or otherwise, about which direction of priority is associated with relations such as parthood (nor, relatedly, about what 'generates' what). Conventionalism is even less plausible as a means of making sense of how different instances of building relations may point in different directions. So ultimately there is no hope of appealing to conventions as a means of fixing instances of small-g/building relations.

The third is to double the number of types of building relations, and associate each type with a different, but fixed, direction of priority. Hence the debate between Monists and Pluralists would turn out, after all, to be about *which* mereological relation was at issue as holding between the Cosmos and its atomic parts, with the Monist claiming that the relevant relation is 'decomposition' (which always points from whole to part), and the Pluralist claiming that the relevant relation is 'composition' (which always points from parts to whole). This strikes me as Bennett's best option. But then, it seems to me, Fundamentality First and a *Building-based* approach to metaphysical structure are on an ontological par: on the one hand, I have one primitive (fundamentality), and Bennett has none; but on the other hand, I have half as many types of metaphysical relations entering into my account of metaphysical dependence as she has types of building relations.⁶³ Even

⁶³Moreover (though this isn't immediately relevant to the question of ontology), the doubling strategy requires a revisionary interpretation of these sort of disputes about metaphysical structure, as about which relation is at issue as opposed to about (as usually presented) what direction of priority should be associated with the one relation all

if primitive posits count for somewhat more than non-primitive posits, and metaphysical relations turn out all to be non-fundamental, the ontological weight of the many metaphysical relations would (one might reasonably maintain) add up to more than my one primitive posit; moreover, for all that has been so far discussed, the metaphysical relations might well be primitive, in which case Fundamentality First would definitely come out ahead.

The upshot is that Fundamentality First is as or more ontologically parsimonious as the comparatively standard foils at issue here.

3.4 Fundamentality First is methodologically consonant

Investigations into global metaphysical structure typically instantiate a common pattern. Consider, to cite just a few examples drawn from our data set:

- *Democritan atomism*. Assume, as a working hypothesis, that the fundamental base consists in a “simple ontology of atoms and void alone”; go on to develop “a systematic and comprehensive natural philosophy accounting for the origins of everything from the interaction of indivisible bodies, as these atoms—which have only a few intrinsic properties like size and shape—strike against one another, rebound and interlock in an infinite void”.
- *Physicalism*. Assume, as a working hypothesis, that the fundamental base consists only in lower-level physical goings-on; go on to argue that higher-level special scientific goings-on stand in various relations of metaphysical dependence—identity, functional realization, the determinable-determinate relation, and so on—to lower-level physical goings-on.
- *British Emergentism*. Assume, as an antagonistic hypothesis, that the fundamental base consists only in lower-level physical goings-on; go on to argue that certain higher-level special scientific goings-on cannot be seen as standing in any relation of (complete) metaphysical dependence to lower-level physical goings-on, and hence must be added to the stock of fundamenta.
- *Humean supervenience*. Assume, as a speculative hypothesis, that the fundamental goings-on are (non-dispositional) intrinsic properties of space-time points, along with spatio-temporal relations. Go on to argue that laws of nature, counterfactuals, and other phenomena supervene on (hence on the intended understanding, completely metaphysically depend on) the distribution of fundamental intrinsic qualities.

The characteristic methodological pattern, in these and other case studies, involves first taking as a starting point some (working, speculative, or antagonistic) specification of the fundamental base, and then exploring whether and how goings-on not clearly in the base metaphysically depend on goings-on in the base.

Fundamentality First is consonant with this approach: here, the specification of the fundamenta comes first in the order of metaphysical investigation and explanation, followed by consideration

parties agree is instantiated.

of the status of other goings-on as small-g related (or not) to goings-on in the base. By way of preliminary contrast, accounts of metaphysical structure on which fundamentality is a non-primitive matter, reflecting what does or does not metaphysically depend on what, do not make as clear sense of this common methodological pattern; for on such accounts, one would expect investigations into metaphysical structure to take as their starting point some (working, speculative, or antagonistic) specification of what does or does not metaphysically depend on what. For example, on a *Grounding-based* package deal on which fundamentality is analyzed as the un-Grounded, one would expect metaphysical investigations to take as their starting point suppositions about what is or is not Grounded in what. But this is not how investigations into metaphysical structure usually proceed. And indeed, it is hard to see how they could do so, given that (as noted in the previous section) the direction of priority associated with an instance of a metaphysical dependence relation is, on a *Grounding-based approach*, a primitive matter, in-principle unconnected to the direction of priority associated with any other instance of that relation.

A *Building-based* package deal may do somewhat better; it depends on how the approach goes about fixing instances of building relations in light of the unfixedness of priority. As above, the most attractive strategy involves doubling the number of building relations. Perhaps then the methodological story would involve taking as a starting point (as a working, speculative, or antagonistic hypothesis) that, e.g., this instance of a relation between some parts and a given whole is composition rather than decomposition, and that instance of a relation between some parts and a given whole is decomposition rather than composition, and so on for every instance of every building relation. Perhaps this strategy is methodologically more principled than one on which the priority of each instance of a metaphysical dependence relation is a primitive matter; but it remains that investigations into global metaphysical structure do not actually proceed in this complicated way, and it is hard to see how they could do so.

All this said, one might wonder whether ‘dependence-first’ approaches to metaphysical structure have an advantage over Fundamentality First, so far as making sense of investigations into priority relations between non-fundamenta is concerned. For Fundamentality First requires—implausibly and sometimes unworkably, one might think—that one settle questions of fundamental structure, as small-g generating the non-fundamenta and their associated natures (as, e.g., non-fundamental fusions), before one can settle questions of non-fundamental structure. By way of contrast, on ‘dependence-first’ package deals, investigations into non-fundamental structure can proceed without any attention to fundamental structure.

I think the appearance of advantage here for my foils is illusory, however; for investigations into non-fundamental structure per Fundamentality First don’t require antecedently settling questions of fundamental structure. To be sure, as a metaphysical matter of fact, what is primitively fundamental will be determinative of the natures of non-fundamenta, in ways that will bear on priority relations between non-fundamenta. But in cases where there is uncertainty about what is fundamental or about how non-fundamenta stand to fundamenta, investigations into non-fundamental structure can proceed by specifying, as a working, speculative, or antagonistic hypothesis, that such-and-such goings-on in a domain D are comparatively fundamental in D , and going on to con-

sider whether and how other goings-on in D metaphysically depend, in one or other small-g way, on those in the comparatively fundamental base—and if not, whether the initial specification of what is comparatively fundamental requires revision. Indeed, it may be that such investigations into non-fundamental structure serve as crucial input into what we should think, at the end of the day, about global metaphysical structure. Whether fundamental (global) or non-fundamental (local) metaphysical structure is at issue, on Fundamentality First what comes first in the order of methodological investigation is what is taken to be (as a working, speculative, or antagonistic hypothesis) either absolutely or comparatively fundamental—consonant, it seems to me, with how such investigations actually proceed.

3.5 Fundamentality First accommodates the unfixedness of priority

Fundamentality First makes room, as desired, for the unfixedness of priority, in making room for different instances of a relation to be associated with different directions of priority (as is endorsed by different views, and even within a given view, as when an Atomist allows that some fusions are prior to their non-fundamental parts, or the Monist allows that some parts are prior to their fusions), and in providing a story about how priority gets fixed in any given instance.

4 Concluding remarks

I have had three main aims in this paper: first, to highlight the importance of metaphysical structure as presupposed by a wide range of views in religion/cosmology, science, and philosophy; second, to put my preferred Fundamentality First approach to such structure, coupling *Primitivist Fundamentality* with *Pluralist Metaphysical Dependence* on the table; and third, to argue that, by certain reasonable methodological lights, Fundamentality First offers a viable and indeed, quite attractive package deal. This much still leaves a great deal to do.

Perhaps most saliently, here I have only been able to briefly and superficially engage with a limited set of competing package deal approaches (my ‘foils’), and even these comparisons have only considered a limited range of theoretical desiderata. A full defense and development of Fundamentality First ultimately requires broader and more detailed engagement with my competitors—some of which, I expect, will emerge in conversation with my commentators.

Other items on my to-do list include consideration of the bearing of various package deal approaches to metaphysical structure on questions such as: Should fundamentality be taken to be relative to specific dependence relations? Is there a generic notion of metaphysical dependence? Can we make sense of identity as a relation capable of tracking relative fundamentality, as (e.g.) reductive physicalists seem to suppose? Is fundamentality status contingent? Must dependence base goings-on necessitate dependent goings-on? Must fundamenta be modally recombinable? Must they be maximally determinate? For answers to these and other interesting questions: stay tuned!

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