Theory and History of Ontology (www.ontology.co)   by Raul Corazzon | e-mail: rc@ontology.co

Annotated bibliography on metaphysical fundamentality (A - Gia)

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Bibliography

1. Aguirre, Anthony, Foster, Brendan, and Merali, Zeeya, eds. 2019. *What is Fundamental?* Cham (Switzerland): Springer.
   Contents: Anthony Aguirre, Brendan Foster and Zeeya Merali: Introduction 1; Emily Adlam: Fundamental? 5; Matthew Leifer: Against Fundamentalism 13; Alyssa Ney: The Politics of Fundamentality 27; Dean Rickles: Of Lego and Layers (and Fundamentalism) 37;
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2. Amijee, Fatema. 2021. "Something from Nothing: Why Some Negative Existentials are Fundamental." In *Non-Being: New Essays on the Metaphysics of Nonexistence*, edited by Bernstein, Sara and Goldschmidt, Tyron, 50-68. Oxford: Oxford University Press.
   "I proceed as follows. In section 1, I discuss motivations and arguments for the view —a view that I ultimately reject—according to which there can be no negative existentials at the fundamental level. In section 2, I show that there is good reason to include a totality fact in the explanans for any contingent negative existential. But totality facts are themselves contingent negative existentials, which makes it difficult to see how we might be able to avoid positing at least some negative existentials at the fundamental level. As part of my argument for the claim that some negative existentials are fundamental, in section 3 I argue against candidate

alternative accounts for eliminating the tension between the claim that no negative existential is fundamental and the claim that every negative existential is partially explained by a negative existential. Finally, in section 4, I show that the arguments for not positing negative facts—and specifically totality facts—at the fundamental level are inadequate. This completes my case for the view that totality facts are fundamental." (pp. 52-53)

3.   Babic, Joshua, and Cocco, Lorenzo. 2020. "A note on Dasgupta's Generalism." *Philosophical Studies* no. 177:2153–2162.
Abstract: "Dasgupta (*Philos Stud Int J Philos Anal Tradit* 145(1):35–67, 2009) has argued that material individuals, such as particles and laptops, are metaphysically objectionable and must be eliminated from our fundamental theories of the world. He proposes to eliminate them by redescribing all the fundamental facts of the world in a variant of predicate functor logic. We study the status, on this theory, of a putative fact particularly recalcitrant to a formulation within predicate functor logic: his own claim that there are no fundamental or primitive material individuals. We consider three regimentations of the denial of primitive individuals and show that— under some plausible hypotheses about fundamental truths and the fundamentality operator—they cannot be consistently translated in predicate functor logic by Dasgupta's usual strategy. We conclude by discussing two approaches to salvage Generalism, in the absence of such a translation."
References
Dasgupta, S. (2009). Individuals: An essay in revisionary metaphysics. *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*, 145(1), 35–67.

4.   Bacon, Andrew. 2019. "Substitution Structures." *Journal of Philosophical Logic* no. 48:1017-1075.
"An increasing amount of twenty-first century metaphysics is couched in explicitly hyperintensional terms: concepts such as grounding, fundamentality and metaphysical priority can draw distinctions between necessarily equivalent propositions and properties.(1) While hyperintensionality in the philosophy of language is often taken to be merely a feature of our representations of the world, a prerequisite of hyperintensional metaphysics is that reality itself be hyperintensional. At the metaphysical level, propositions, properties, operators, and other elements of the type hierarchy, must be at least more fine-grained than functions from possible worlds to extensions. In this paper I develop, in the setting of type theory, a general framework for reasoning about the granularity of propositions and properties."
(1) 1See Nolan [27] for a helpful overview of this trend.
References
[27] Nolan, D. (2014). Hyperintensional metaphysics. *Philosophical Studies,* 171(1), 149–160.

5.   ———. 2020. "Logical Combinatorialism." *Philosophical Review* no. 129:537-589.
Abstract: "In explaining the notion of a fundamental property or relation, metaphysicians will often draw an analogy with languages. The fundamental properties and relations stand to reality as the primitive predicates and relations stand to a language: the smallest set of vocabulary God would need in order to write the `book of the world'. In this paper I attempt to make good on this metaphor. In order to do this I introduce a modality that, put informally, stands to propositions as logical truth stands to sentences. The resulting theory, formulated in higher-order logic, also vindicates the Humean idea that fundamental properties and relations are freely recombinable and a variant of the structural idea that propositions can be decomposed into their fundamental constituents via logical operations. Indeed, it is seen that, although these ideas are seemingly distinct, they are not independent, and fall out of a natural and general theory about the granularity of reality."

6.   Bader, Ralf M. 2020. "Fundamentality and Non-Symmetric Relations." In *The Foundation of Reality: Fundamentality, Space, and Time*, edited by Glick, David,

Darby, George and Marmodoro, Anna, 15-45. Oxford: Oxford University Press.
"The first part of this chapter argues that there are no non-symmetric relations at the fundamental level (Sections 1.2 and 1.2). The second part identifies different ways in which asymmetry and order can be introduced into a world that only contains symmetric but no non-symmetric fundamental relations (Section 1.4).
The third part develops an account of derivative relations and puts forward identity criteria that establish that derivative non-symmetric relations do not have distinct converses. Instead of a plurality of relations, there are only different ways of picking out the same relation (Section 1.5). The final part provides an account of how generative operations can induce order and argues for a reconceptualisation of grounding as an operation rather than as a relation (Section 1-6)." (p. 16)

7.   Barker, Jonathan. 2022. "Against Purity." *Ergo: An Open Access Journal of Philosophy*:1-43.
Not yet published, preprint available at PhilArchive.
Abstract: "A fundamental fact is "pure" just in case it contains no grounded entity—ex. entities like Tokyo, President Biden, the River Nile, {Socrates}, and so on—among its constituents. Purity is the thesis that every fundamental fact is pure. Purity is popular among defenders of ground. Indeed, an entire corner of the grounding literature is devoted to one of Purity's implication that every grounding fact has a ground. Nevertheless, I argue that Purity is false. I argue that if every grounding fact has a ground, then at least one fundamental fact has a grounded constituent. Thus, if Purity is true, then it is false. Purity's falsity therefore follows via reductio. Moreover, in seeing why Purity is false, we will also be uncovering a powerful reason to think that at least _some_ grounding facts are fundamental rather than grounded. I close by arguing that the facts about what grounds composition's occurrence are particularly good candidates for fundamental grounding facts."

8.   Barnes, Elizabeth. 2012. "Emergence and Fundamentality." *Mind* no. 121:873-901.
Abstract: "In this paper, I argue for a new way of characterizing ontological emergence.
I appeal to recent discussions in meta-ontology regarding fundamentality and dependence, and show how emergence can be simply and straightforwardly characterized using these notions. I then argue that many of the standard problems for emergence do not apply to this account: given a clearly specified meta-ontological background, emergence becomes much easier to explicate. If my arguments are successful, they show both a helpful way of thinking about emergence and the potential utility of discussions in meta-ontology when applied to first-order metaphysics."

9.   ———. 2014. "Fundamental Indeterminacy." *Analytic Philosophy* no. 55:339–362.
"In what follows, I will argue that a defender of indeterminacy needs to show that indeterminacy can be fundamental, but that her standard arguments, even if they work, only establish derivative indeterminacy (§1). I then move on to the case for fundamental indeterminacy, first giving a brief explanation of different ways we might characterize the idea that there is fundamental indeterminacy (§2) and then examining arguments for indeterminacy which (unlike standard arguments) if successful can establish fundamental indeterminacy (§3). I argue that the best strategy for motivating fundamental indeterminacy is to focus on its ability to increase theoretical expressiveness." (pp. 339-340)

10.   Barnesm, Eric. 1994. "Explaining Brute Facts." *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association* no. 1:61-68.
Abstract: "I aim to show that one way of testing the mettle of a theory of scientific explanation is to inquire what that theory entails about the status of brute facts. Here I consider the nature of brute facts, and survey several contemporary accounts of explanation vis a vis this subject (the Friedman-Kitcher theory of explanatory unification, Humphreys' causal theory of explanation, and Lipton's notion of 'explanatory loveliness'). One problem with these accounts is that they seem to entail that brute facts represent a gap in scientific understanding. I argue that brute

facts are non-mysterious and indeed are even explainable by the lights of Salmon's ontic conception of explanation (which I endorse here). The plausibility of various models of explanation, I suggest, depends to some extent on the tendency of their proponents to focus on certain examples of explananda - I ponder brute facts qua explananda here as a way of helping us to recognize this dependency."

References

Friedman, M. (1974), "Explanation and Scientific Understanding", *Journal of Philosophy* 71: 5–19.

Humphreys, P. (1989), *The Chances of Explanation: Causal Explanations in the Social, Medical, and Physical Sciences*. Princeton: Princeton University Press.

Kitcher, P. (1981), "Explanatory Unification", *Philosophy of Science* 48: 507–531.

Kitcher, P. (1989), "Explanatory Unification and the Causal Structure of the World", in Kitcher, P. and Salmon, W.C., (eds.) *Minnesota Studies in the Philosophy of Science*, Vol. 13, S*cientific Explanation,* Minneapolis: University of Minnesota Press, pp. 410–505.

Lipton, P. (1991) *Inference to the Best Explanation*. London and New York: Routledge.

11.   Baron, Sam, and Le Bihan, Baptiste. 2022. "Composing Spacetime." *Journal of Philosophy* no. 119:33-54.
Abstract: "According to a number of approaches in theoretical physics, spacetime does not exist fundamentally. Rather, spacetime exists by depending on another, more fundamental, non-spatiotemporal structure. A prevalent opinion in the literature is that this dependence should not be analyzed in terms of composition. We should not say, that is, that spacetime depends on an ontology of non-spatiotemporal entities in virtue of having them as parts. But is that really right? On the contrary, we argue that a mereological approach to dependent spacetime is not only viable, but promises to enhance our understanding of the physical situation."

12.   Baron, Sam, and Tallant, Jonathan. 2016. "Monism: The Islands of Plurality." *Philosophy and Phenomenological Research* no. 93:583-606.
Abstract: "Priority monism (hereafter, 'monism') is the view that there exists one fundamental entity —the world—and that all other objects that exist (a set of objects typically taken to include tables, chairs, and the whole menagerie of everyday items) are merely derivative.
Jonathan Schaffer has defended monism in its current guise, across a range of papers.
Each paper looks to add something to the monistic picture of the world. In this paper we argue that monism—as Schaffer describes it—is false. To do so we develop an 'island universe' argument against Schaffer's monistic theory."

13.   Baysan, Umut. 2015. "Realization Relations in Metaphysics." *Minds and Machines* no. 25:247-260.
Abstract: " ''Realization'' is a technical term that is used by metaphysicians, philosophers of mind, and philosophers of science to denote some dependence relation that is thought to obtain between higher-level properties and lower-level properties. It is said that mental properties are realized by physical properties; functional and computational properties are realized by first-order properties that occupy certain causal/functional roles; dispositional properties are realized by categorical properties; so on and so forth.
Given this wide usage of the term ''realization'', it would be right to think that there might be different dependence relations that this term denotes in different cases. Any relation that is aptly picked out by this term can be taken to be a realization relation. The aim of this state-of-the-field article is to introduce the central questions about the concept of realization, and provide formulations of a number of realization relations. In doing so, I identify some theoretical roles realization relations should play, and discuss some theories of realization in relation to these theoretical roles."

14.   Bennett, Karen. 2011. "Construction Area (N0 Hard Hat Required)." *Philosophical Studies* no. 154:79-104.

Abstract: ""A variety of relations widely invoked by philosophers—composition, constitution, realization, micro-basing, emergence, and many others—are species of what I call 'building relations'. I argue that they are conceptually intertwined, articulate what it takes for a relation to count as a building relation, and argue that—contra appearances—it is an open possibility that these relations are all determinates of a common determinable, or even that there is really only one building relation."

15. ———. 2017. *Making Things Up*. New York: Oxford University Press.
Contents: 1. Introduction 1; 2. Building I: Breaking Ground 6; 3. Building II: Characterizing the Class 30; 4. Causing 67; 5. Absolute Fundamentality 102; 6. Relative Fundamentality 137; 7. Building Building? 187; 8. In Defense of the Nonfundamental 214; Appendix: Objections to the Second Grade of Causal Involvement 239; References 247; Name Index 257; Subject Index 259-260.
"In Chapters 5 and 6, I investigate the nature of fundamentality. In Chapter 5, I distinguish three different notions of absolute fundamentality in the contemporary literature, and argue that the primary notion is that of being unbuilt. In Chapter 6, I argue that relative fundamentality—relations like *being more fundamental than* and *being just as fundamental as*—must also be understood in terms of building. I further claim that this fact goes a long way towards demystifying fundamentality talk. Indeed, that is one of the central claims of the book: there is nothing more to relative fundamentality than the obtaining of certain patterns of building. Along the way, I investigate various related questions, such as whether anything is absolutely fundamental at all, and whether everything is comparable with respect to relative fundamentality." (p. 3)

16. ———. 2019. "Précis of *Making Things Up*." *Philosophy and Phenomenological Research* no. 98:478-481.
"The goal of *Making Things Up* is to get clearer about what building relations are, how they are related to each other, and how they are related to fundamentality and causation. More generally, the goal is to articulate a detailed picture of a structured world.
Soon, I will sketch the book chapter by chapter. But I want to start by flagging three core commitments that color the project in a variety of ways, and by frontloading what I suppose are the two biggest claims in the book. The first core commitment is agnosticism about whether there is a single most fundamental building relation. Throughout the book, I instead talk in terms of a plurality of building relations, and intend talk of 'building' in the singular as shorthand for quantificational or generic claims. The second core commitment is agnosticism about metaphysical foundationalism: agnosticism, that is, about the claim that the world has a bottom level, that all chains of building terminate in something fundamental. The third core commitment is what I hereby call 'content neutrality', though I do not use that label in the book. I do not intend to assert substantive claims about what in fact builds what, or what is in fact fundamental, if anything is. My goal is instead to sketch a kind of framework view that can be shared by people who disagree with me, and with each other, about particular building claims." (p. 478)

17. Benocci, Matteo. 2017. "Priority Monism and Essentiality of Fundamentality: A Reply to Steinberg." *Philosophical Studies* no. 174:1983-1990.
Abstract: "Steinberg has recently proposed an argument against Schaffer's priority monism. The argument assumes the principle of Necessity of Monism, which states that if priority monism is true, then it is necessarily true. In this paper, I argue that Steinberg's objection can be eluded by giving up Necessity of Monism for an alternative principle, that I call Essentiality of Fundamentality, and that such a principle is to be preferred to Necessity of Monism on other grounds as well."
References
Steinberg, A. (2015). Priority monism and part/whole dependence. *Philosophical Studies*, 172, 2025–2031.

18. Berker, Selim. 2019. "The Explanatory Ambitions of Moral Principles." *Noûs* no. 53:504-536.

Abstract: "Moral properties are explained by other properties. And moral principles tell us about moral properties. How are these two ideas related? In particular, is the truth of a given moral principle part of what explains why a given action has a given moral property? I argue "No." If moral principles are merely concerned with the extension of moral properties across all possible worlds, then they cannot be partial explainers of facts about the instantiation of those properties, since in general necessitation does not suffice for explanation. And if moral principles are themselves about what explains the moral properties under their purview, then by their own lights they are not needed in order to explain those moral properties' instantiation—unless, that is, the principles exhibit an objectionable form of metaphysical circularity. So moral principles cannot explain why individual actions have moral properties. Nor, I also argue, can they explain why certain other factors explain why those actions have the moral properties that they do, or in some other way govern or mediate such first-order explanations of particular moral facts. When it comes to the explanation of an individual action's specific moral features, moral principles are explanatorily idle."

19.   Bernstein, Sara. 2014. "Two Problems for Proportionality about Omissions." *Dialectica* no. 68:429-441.
       "Theories of causation grounded in counterfactual dependence face the *problem of profligate omissions:* numerous irrelevant omissions count as causes of an outcome. A recent purported solution to this problem is *proportionality*, which selects one omission among many candidates as the cause of an outcome. This paper argues that proportionality cannot solve the problem of profligate omissions for two reasons. First: the determinate/determinable relationship that holds between properties like aqua and blue does not hold between negative properties like *not aqua* and *not blue*. Negative properties are those at stake in omissive causation. Second: proportionality misconstrues the nature of the problem to be solved."

20.   ———. 2021. "Could a Middle Level Be the Most Fundamental?" *Philosophical Studies* no. 178:1065-1078.
       Abstract: "Debates over what is fundamental assume that what is most fundamental must be either a "top" level (roughly, the biggest or highest-level thing), or a "bottom" level (roughly, the smallest or lowest-level things). Here I sketch an alternative to top-ism and bottom-ism, the view that a middle level could be the most fundamental, and argue for its plausibility. I then suggest that this view satisfies the desiderata of asymmetry, irreflexivity, transitivity, and well-foundedness of fundamentality, that the view has explanatory power on par with that of top-ism and bottom-ism, and that it has a unique connection to the Principle of Sufficient Reason."

21.   Bertrand, Michael. 2017. "Fundamental Ontological Structure: An Argument Against Pluralism." *Philosophical Studies* no. 174:1277-1297.
       Abstract: "In recent years, a hierarchical view of reality has become extremely influential. In order to understand the world as a whole, on this view, we need to understand the nature of the fundamental constituents of the world. We also need to understand the relations that build the world up from these fundamental constituents.
       Building pluralism is the view that there are at least two equally fundamental relations that together build the world. It has been widely, though tacitly, assumed in a variety of important metaphysical debates. However, my primary aim in this paper is to argue that this has been a mistake. I will show that serious problems concerning the relationship between building and fundamentality afflict pluralism and are likely fatal to it. I claim that, for better or worse, our best hope is building singularism, the view that there is a single most fundamental building relation. I conclude by examining the advantage that singularist accounts enjoy over their pluralist rivals."

22.   Bliss, Ricki. 2019. "What Work the Fundamental?" *Erkenntnis* no. 84:359-379.
       Abstract: "Although it is very often taken for granted that there is something fundamental, the literature appears to have developed with little to no careful

consideration of what exactly it is that the fundamentalia are supposed to do. If we are to have a good reason to believe that there is something fundamental, we need not only to know what exactly it is that the fundamentalia are invoked for, but why it is that nothing else is available for the task to hand. A good argument in defense of fundamentality, then, will contain an assumption that stipulates an explanatory target; along with a second, crucial, assumption that tells us that no dependent entity is available to do the work that needs to be done. In this paper, I explore both of these assumptions."

23.   ———. 2020. "Fundamentality." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 336-347. New York: Routledge.
"The notion of fundamentality has, in more recent times, come not only to be associated with the thought that there is something ultimate, basic or at the bottom, but also with the thought that some things are nearer or further from or equidistant with that bottom. Thus, we have at our disposal, in fact, not only a notion of absolute fundamentality but also one of relative fundamentality.
This chapter is focused largely upon absolute fundamentality. Although the notion of relative fundamentality is an important one, it is commonly thought to be captured by the asymmetry, transitivity and irreflexivity of the grounding relation to which it is intimately related.Although, as we will see, this supposition is questionable, our discussion of relative fundamentality will be relegated to a cursory and brief portion of the chapter—§1. More extensive discussions of relative fundamentality can be found in Saenz [Chapter 25],Tahko [Chapter 27] and Thompson [Chapter 17] in this volume. In §2, I move onto a discussion of absolute fundamentality proper. In §2.1, I consider the common ways in which the notion has been captured, and in §2.2, the ways in which it has been characterised. In §3, I present what the most common arguments in defence of the view are.And in §4, I offer a brief discussion of whether we need grounding in order to cash out accounts of fundamentality." (p. 337)

24.   Bliss, Ricki, and Priest, Graham, eds. 2018. *Reality and its Structure: Essays in Fundamentality*. Oxford: Oxford University Press.
Contents: List of Contributors VII; 0. Ricki Bliss and Graham Priest: The Geography of Fundamentality: An Overview;
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25.   ———. 2018. "The Geography of Fundamentality." In *Reality and its Structure: Essays in Fundamentality*, edited by Bliss, Ricki and Priest, Graham, 1-33. New York: Oxford University Press.
"The kind of view, or cluster of views, that appear to dominate the contemporary analytic debate can be thought of broadly as, or as species of, metaphysical foundationalism.

As will become clearer in due course, there are, in fact, a variety of ways in which one can be a metaphysical foundationalist; with different species of foundationalism involving different core commitments. Although this list is by no means exhaustive, we assume the following to be amongst the core commitments of metaphysical foundationalism as commonly endorsed in the contemporary literature.

1. The hierarchy thesis: Reality is hierarchically structured by metaphysical dependence relations that are anti-symmetric, transitive, and anti-reflexive.

2. The fundamentality thesis:There is some thing(s) which is fundamental.

3. The contingency thesis: Whatever is fundamental is merely contingently existent.

4. The consistency thesis: The dependence structure has consistent structural properties.

Strictly speaking, in order to be considered a species of foundationalism, a view needs only commit to the the fundamentality thesis: 2., then, is both necessary and sufficient for a view to count as a kind of foundationalism. For proponents of what we can think of as the standard view, however, all four theses are necessary, with no one of them being sufficient.(3)

(3) The idea that the world is ontologically 'flat', with everything being fundamental—a rejection of 1—has been described by Bennett 2011 as 'crazy pants', for example. Just as many philosophers baulk at the suggestion that the fundamentalia are necessary beings.

References

Bennett, K. (2011), 'By our Bootstraps', *Philosophical Papers*, vol. 25, pp. 27–41.

26. Borghini, Andrea, and Lando, Giorgio. 2016. "Mereological Monism and Humean Supervenience." *Synthese* no. 197:4745-4765.
Abstract: "According to Lewis, mereology is the general and exhaustive theory of ontological composition (mereological monism), and every contingent feature of the world supervenes upon some fundamental properties instantiated by minimal entities (Humean supervenience). A profound analogy can be drawn between these two basic contentions of his metaphysics, namely that both can be intended as a denial of emergentism. In this essay, we study the relationships between Humean supervenience and two philosophical spin-offs of mereological monism: the possibility of gunk and the thesis of composition as identity. In a gunky scenario, there are no atoms and, thus, some criteria alternative to mereological atomicity must be introduced in order to identify the bearers of fundamental properties; this introduction creates a precedent, which renders the restriction of the additional criteria to gunky scenarios arbitrary. On the other hand, composition as identity either extends the principle of indiscernibility of identicals to composition or is forced to replace indiscernibility with a surrogate; both alternatives lead to the postulation of a symmetric kind of supervenience which, in contrast to Humean supervenience, does not countenance a privileged level. Both gunk and composition as identity, thus, display a tension with Humean supervenience."

27. Brenner, Andrew. 2022. "Metaphysical Foundationalism and Theoretical Unification." *Erkenntnis*:1-21.
First online 21 July 2021.
Abstract: "Some facts ground other facts. Some fact is fundamental iff there are no other facts which partially or fully ground that fact. According to metaphysical foundationalism, every non-fundamental fact is fully grounded by some fundamental fact(s).
In this paper I examine and defend some neglected considerations which might be made in favor of metaphysical foundationalism. Building off of work by Ross Cameron, I suggest that foundationalist theories are more unified than, and so in one important respect simpler than, non-foundationalist theories, insofar as foundationalist theories allow us to derive all non-fundamental facts from some fundamental fact(s). Non-foundationalist theories can enjoy a similar sort of theoretical unification only by taking on objectionable metaphysical laws."

28.   Brown, Christopher. 2017. "Minds Within Minds: An Infinite Descent of Mentality in a Physical World." *Erkenntnis* no. 82:1339-1350.

Abstract: "Physicalism is frequently understood as the thesis that everything depends upon a fundamental physical level. This standard formulation of physicalism has a rarely noted and arguably unacceptable consequence—it makes physicalism come out false in worlds which have no fundamental level, for instance worlds containing things which can infinitely decompose into smaller and smaller parts. If physicalism is false, it should not be for this reason. Thus far, there is only one proposed solution to this problem, and it comes from the so-called via negativa account of physicalism. Via negativa physicalism identifies the physical with the non-mental, such that if everything in the world ultimately depends only on nonmental things, then physicalism is true. To deal with the possibility of worlds without a fundamental level, this account says that physicalism is false in worlds with either a fundamental mental level or an infinite descent of mental levels. Here I argue that there could be a world with an infinite descent of all-mental levels, yet in which physicalism might plausibly be true—thus contradicting the sufficient-for false condition meant to save physicalism from the threat of infinitely decomposable worlds. This leaves the need for a new dependence-based account of physicalism."

29.   ———. 2021. "Fundamental Mentality in a Physical World." *Synthese* no. 199:2841-2860.
Correction in *Synthese*, 199, 2021, p. 2861.

Abstract: "Regardless of whatever else physicalism requires, nearly all philosophers agree that physicalism cannot be true in a world which contains fundamental mentality. I challenge this widely held attitude, and describe aworld which is plausibly all-physical, yet which may contain fundamental mentality. This is a world in which priority monism is true—which is the view that the whole of the cosmos is fundamental, with dependence relations directed from the whole to the parts—and which contains only a single mental system, like a brain or computer. Because some properties of the whole are fundamental under priority monism, it follows that that the mental properties of a cosmos-encompassing brain or computer system may be fundamental in a priority monist world. Yet such a world need not contain anything physically unacceptable: the mental properties of the cosmos-encompassing brain or computer can be characterized in a physicalism-friendly functionalist or identity-theoretic way. Thus, as I see it, physicalism need not be false in such a world. This constitutes a challenge to those who hold the view that physicalism is inconsistent with the existence of fundamental mentality."

30.   Brown, Joshua D. K. 2016. "Natural Objects." *Journal of the American Philosophical Association* no. 2:254-271.

Abstract: "This paper introduces a framework for thinking about ontological questions—in particular, the Special Composition Question—and shows how the framework might help support something like an account of restricted composition. The framework takes the form of an account of natural objects, in analogy with David Lewis's account of natural properties. Objects, like properties, come in various metaphysical grades, from the fundamental, fully objective, perfectly natural objects to the nomologically otiose, maximally gerrymandered, perfectly non-natural objects. The perfectly natural objects, I argue, are the mereological simples, and (roughly) a collection composes an object of degree-n naturalness if and only if its members are arranged F-wise, for some property F that appears in the degree-n natural laws. Arbitrary composites turn out to be perfectly non-natural objects and are metaphysical bystanders.
Ordinary composite objects fall in between. Some—e.g., atoms—are very (though not perfectly) natural; others—e.g., tables—are highly non-natural."

31.   Brown, Robin, and Ladyman, James. 2009. "Physicalism, Supervenience and the Fundamental Level." *Philosophical Quarterly* no. 59:20-38.

Abstract: "We provide a formulation of physicalism, and show that this is to be favoured over alternative formulations. Much of the literature on physicalism

assumes without argument that there is a fundamental level to reality, and we show that a consideration of the levels problem and its implications for physicalism tells in favour of the form of physicalism proposed here. Its key elements are, first, that the empirical and substantive part of physicalism amounts to a prediction that physics will not posit new entities solely for the purpose of accounting for mental phenomena, nor new entities with essentially mental characteristics such as propositional attitudes or intentions; secondly, that physicalism can safely make do with no more than a weak global formulation of supervenience."

32.   Brzozowski, Jacek. 2008. "On Locating Composite Objects." *Oxford Studies in Metaphysics* no. 4:193-222.
"Composite objects (at least some of them, in our world) are located in space-time. The question I will pose is the following: does the location of a composite object derive from the location of its proper parts, or not? I will argue that either way, there are unappealing consequences. We face a dilemma. Either:
1. If the location of composite objects is derived from their proper parts, we must deny the possibility of spatio-temporal gunk objects: composite objects each of whose parts is itself composite, or,
2. If the location of composite objects is not derived from their proper parts, we must posit brute metaphysical necessities connecting the location of composite objects with the locations of their proper parts." (p. 193, a note omitted)

33.   ———. 2016. "Monism and Gunk." In *Reality Making*, edited by Jago, Mark, 57-74. Oxford: Oxford University Press.
"One of the main arguments put forward in favour of monism is that it can accommodate the possibility of gunk worlds—worlds where each part divides into further parts without end—while the view of their pluralist opponents cannot.
It's argued that as gunk worlds are possible, and that as a pluralist metaphysics does not allow for the possibility of such worlds while a monist metaphysics does, monism has an important advantage over pluralism.(4)
While I do think that the possibility of gunkworlds (if they are indeed possible) is a problem for the pluralist, I aim to show that the possibility of gunk worlds is similarly problematic for the monist.
(...)
I conclude that the argument from the possibility of gunk does not offer the monist the clear cut advantage over the pluralist that one may have originally thought it had." (pp. 57-58)
(4) The argument from the possibility of gunk is put forward by Schaffer (2007, 2010).
References
Schaffer, J. (2007). 'From Nihilism to Monism'. *Australasian Journal of Philosophy*, 85(2), 175-91.
Schaffer, J. (2010). 'Monism: The Priority of the Whole'. *Philosophical Review*, 119(1), 31-76.

34.   Builes, David. 2019. "Pluralism and the Problem of Purity." *Analysis* no. 79:394-402.
"Does everything exist in the same way as everything else? *Monists about being* (or 'Monists' for short) say 'yes', and *Pluralists about being* (or 'Pluralists' for short) say 'no'.
(...)
Trenton Merricks (forthcoming) presents a dilemma against Pluralism. He argues that both horns of the dilemma are unacceptable, and so Pluralism must be false. The purpose of this paper is two-fold. First, I will argue that one particular horn of Merricks's dilemma is unproblematic for the contemporary version of Pluralism defended by Turner (2010) and McDaniel (2009, 2010, 2017), and so Merricks's argument against Pluralism, as stated, is unsound. However, my second task is to provide a new dilemma against Pluralism, which, when combined with Merricks's

arguments, constitutes a powerful new challenge to every form of Pluralism." (p. 394)

References

McDaniel, K. 2009. Ways of being. In *Metametaphysics: New Essays on the Foundations of Ontology*, eds. D.J. Chalmers, D. Manley and R. Wasserman, 290–319. Oxford: Oxford University Press.

McDaniel, K. 2010. A return to the analogy of being. *Philosophy and Phenomenological Research* 81: 688–717.

McDaniel, K. 2017. *The Fragmentation of Being*. Oxford: Oxford University Press.

Merricks, T. forthcoming. The only way to be. Noûs, [53, 2019, 593-612]

Turner, J. 2010. Ontological pluralism. *Journal of Philosophy* 107: 5–34.

35.   Callender, Craig. 2001. Why Be a Fundamentalist: Reply to Schaffer. Unpublished, available at PhilSci Archive.
      Abstract: "This is my commentary on Jonathan Schaffer's paper "Evidence for Fundamentality?"; both the paper and comments were presented at the Pacific APA, San Francisco, March 2001. Schaffer argues against the view that there is an ultimate fundamental level to the world. Seeing that quarks and leptons may have an infinite hierarchy of constituents, he claims, empowers and dignifies the whole of nature (15). Like Kant he holds that there are as good reasons for believing matter infinitely divisible as composed of fundamental simples. I'm afraid that Schaffer's provocative arguments have not convinced me. In the paper, I criticize the idea that fundamentalism 'weakens' and 'denigrates' the whole of nature and try to show that an infinite hierarchy can not do the work Schaffer needs it to. I then argue that we should not in fact be agnostic between the two rival hypotheses."

36.   Calosi, Claudio. 2020. "Priority Monism, Dependence and Fundamentality." *Philosophical Studies* no. 177:1-20.
      Abstract: "Priority monism (PM) is roughly the view that the universe is the only fundamental object, that is, a concrete object that does not *depend* on any other concrete object. Schaffer, the main advocate of PM, claims that PM is compatible with dependence having two different directions: from parts to wholes for subcosmic wholes, and from whole to parts for the cosmic whole. Recently it has been argued that this position is untenable. Given plausible assumptions about dependence, PM entails that dependence has only one direction, it always goes from wholes to parts. One such plausible assumption is a principle of Isolation. I argue that, given all extant accounts of dependence on the market, PM entails No Isolation.
      The argument depends upon a particular feature of the dependence relation, namely, *necessitation* and *its direction*. In the light of this, I contend that the argument is important, insofar as it suggests that we should distinguish dependence from other cognate notions, e.g. grounding. Once this distinction is made, I suggest we should also distinguish between two different notions of fundamentality that might turn out to be not-coextensive."

37.   Cameron, Ross P. 2008. "Turtles All the Way Down: Regress, Priority and Fundamentality in Metaphysics." *The Philosophical Quarterly* no. 58:1-14.
      Abstract: "I address an intuition commonly endorsed by metaphysicians, that there must be a fundamental layer of reality, i.e., that chains of ontological dependence must terminate: there cannot be turtles all the way down. I discuss applications of this intuition with reference to Bradley's regress, composition, realism about the mental and the cosmological argument. I discuss some arguments for the intuition, but argue that they are unconvincing. I conclude by making some suggestions for how the intuition should be argued for, and discussing the ramifications of giving the justification I think best."

38.   ———. 2010. "From Humean Truthmaker Theory to Priority Monism." *Noûs* no. 44:178-198.
      "The Humean is a resister of mysterious brute necessity; when there is necessity, she claims, we must be able to give an explanation of the necessity.

(...)
Connections have been drawn between truthmaker theory and priority monism. Jonathan Schaffer—who has been largely responsible for the recent resurgence of interest in priority monism—has argued that one of the benefits of priority monism is that it allows for a neat and parsimonious theory of truthmakers which solves the problem of negative facts.(3) That gives us one way of arguing from truthmaker theory to priority monism: priority monism affords an advantageous theory of truthmaking, so the truthmaker theorist has good reason to be a priority monist. In this paper I intend to offer a different argument from truthmaker theory to priority monism: the truthmaker theorist has to be a priority monist, provided she doesn't want to be committed to objectionable necessary connections between distinct contingent existents." (p. 178)
(3) Jonathan Schaffer, 'The Least Discerning and Most Promiscuous Truthmaker', forthcoming in *The Philosophical Quarterly* [60, 2010, 307-324]

39.   ———. 2012. "Composition as Identity Doesn't Settle the Special Composition Question." *Philosophy and Phenomenological Research* no. 84:531-554.
Abstract: "Orthodoxy says that the thesis that composition is identity (CAI) entails universalism: the claim that any collection of entities has a sum. If this is true it counts in favour of CAI, since a thesis about the nature of composition that settles the otherwise intractable special composition question (SCQ) is desirable. But I argue that it is false: CAI is compatible with the many forms of restricted composition, and SCQ is no easier to answer given CAI than otherwise. Furthermore, in seeing why this is the case we reveal an objection to CAI: that it allows for the facts concerning what there is to be settled whilst leaving open the question about what is identical to what."

40.   ———. 2019. "Comments on Karen Bennett's *Making Things Up*." *Philosophy and Phenomenological Research* no. 98:482-488.
"Karen Bennett's original and intriguing book *Making Things Up* is about building relations: relations by which you get some things from others. Relations such as composition, where you get a whole from some parts; set formation, where you get a set from some members; grounding, where you get a derivative fact from a more fundamental one; realization, where you get a higher-level state from a lower-level one; etc.
Philosophers like the smallest toolbox possible, so it's tempting to try to reduce some building relations to others. David Lewis, e.g., attempts to reduce class-formation to composition: the class of Xs is simply the mereological sum of all of X's subclasses.(2) We might hope, indeed, that there is ultimately only one building relation, to which all others can be reduced. Bennett thinks not. She is a building pluralist.(3) I'm going to tackle her case for this, and argue that monism remains a contender." (p. 482)
(2) Lewis (1991).
(3) More carefully, she prefers building pluralism because she takes her arguments to show not that monism is false but rather that we shouldn't gamble on it being true (p24). I will argue that the arguments don't even make the case for preferring pluralism.
References
Lewis, David, (1991), *Parts of Classes*, Oxford: Blackwell

41.   Chen, Gang. 2009. "Hierarchy, form, and Reality." *Frontiers of Philosophy in China* no. 4:437-453.
Abstract: "Scientific progress in the 20th century has shown that the structure the world is hierarchical. A philosophical analysis of the hierarchy will obvious significance for metaphysics and philosophy in general. Jonathan Schaffer's paper, "Is There a Fundamental Level?", provides a systematic of the works in the field, the difficulties for various versions of fundamentalism, and the prospect for the third option, i.e., to treat each level as ontologically equal. The purpose of this paper is to provide an argument for the third option. The author will apply Aristotle's theory of

matter and form to the discussion of the hierarchy and develop a theory of form realism, which will grant every level with "full citizenship in the republic of being." It constitutes an argument against ontological and epistemological reductionism. A non-reductive theory of causation is also developed against the fundamental theory of causation."

42.   Correia, Fabrice. 2021. "The Logic of Relative Fundamentality." *Synthese* no. 198:1279-1301.
Abstract: "I introduce a proof system for the logic of relative fundamentality, as well as a natural semantics with respect to which the system is both sound and complete. I then "modalise" the logic, and finally I discuss the properties of grounding given a suggested account of this notion in terms of necessity and relative fundamentality."

43.   ———. 2021. "A Kind Route from Grounding to Fundamentality." *Synthese* no. 199:8299-8315.
Abstract: "I offer an account of fundamentality for facts in terms of metaphysical grounding.
The account does justice to the idea that whether a fact is absolutely fundamental, and whether a fact is more fundamental than, or as fundamental as, another fact, are a matter of where in a grounding-induced hierarchy of kinds of facts these facts appear."

44.   ———. 2021. "Fundamentality from Grounding Trees." *Synthese* no. 199:5965-5994.
Abstract: "I provide and defend two natural accounts of (both relative and absolute) fundamentality for facts that do justice to the idea that the "degree of fundamentality" enjoyed by a fact is a matter of how far, from a ground-theoretic perspective, the fact is from the ungrounded facts."

45.   Cowling, Sam. 2014. "Instantiation as Location." *Philosophical Studies* no. 167:667-682.
Abstract: "Abstract Many familiar forms of property realism identify properties with *sui generis* ontological categories like universals or tropes and posit a fundamental *instantiation* relation that unifies objects with their properties. In this paper, I develop and defend locationism, which identifies properties with locations and holds that the occupation relation that unifies objects with their locations also unifies objects with their properties. Along with the theoretical parsimony that locationism enjoys, I argue that locationism resolves a puzzle for actualists regarding the ontological status of uninstantiated properties. I also note some promising applications of the locationist framework to the metaphysics of quantities and possible worlds."

46.   Crowther, Karen. 2019. "When Do We Stop Digging? Conditions on a Fundamental Theory of Physics." In *What is Fundamental?*, edited by Aguirre, Anthony, Foster, Brendan and Merali, Zeeya, 123-133. Cham (Switzerland): Springer.
Abstract: "In seeking an answer to the question of what it means for a theory to be fundamental, it is enlightening to ask why the current best theories of physics are not generally believed to be fundamental. This reveals a set of conditions that a theory of physics must satisfy in order to be considered fundamental. Physics aspires to describe ever deeper levels of reality, which may be without end. Ultimately, at any stage we may not be able to tell whether we've reached rock bottom, or even if there is a base level—nevertheless, I draft a checklist to help us identifywhen to stop digging, in the case where we may have reached a candidate for a final theory. Given that the list is—according to (current) mainstream belief in high-energy physics—complete, and each criterion well-motivated, I argue that a physical theory that satisfies all the criteria can be assumed to be fundamental in the absence of evidence to the contrary."

47.   Cuffaro, Michael E., and Hartmann, Stephan. 2021. "The Open System View."1-61.
Preprint available at https://arxiv.org/abs/2112.11095

Abstract: "There is a deeply entrenched view in philosophy and physics, the closed systems view, according to which isolated systems are conceived of as fundamental. On this view, when a system is under the influence of its environment this is described in terms of a coupling between it and a separate system which taken together are isolated. We argue against this view, and in favor of the alternative open systems view, for which systems interacting with their environment are conceived of as fundamental, and the environment's influence is represented via the dynamical equations that govern the system's evolution. Taking quantum theories of closed and open systems as our case study, and considering three alternative notions of fundamentality: (i) ontic fundamentality, (ii) epistemic fundamentality, and (iii) explanatory fundamentality, we argue that the open systems view is fundamental, and that this has important implications for the philosophy of physics, the philosophy of science, and for metaphysics."

48. Dasgupta, Shamik. 2009. "Individuals: An Eessay in Revisionary Metaphysics." *Philosophical Studies* no. 145:35-67.
Abstract: "We naturally think of the material world as being populated by a large number of *individuals*. These are things, such as my laptop and the particles that compose it, that we describe as being propertied and related in various ways when we describe the material world around us. In this paper I argue that, fundamentally speaking at least, there are no such things as material individuals. I then propose and defend an individual-less view of the material world I call ''generalism''."

49. ———. 2013. "Absolutism vs Comparativism about Quantity." *Oxford Studies in Metaphysics* no. 8:105-148.
"In this paper I discuss a question that arises for all quantities but which is best illustrated by the case of mass. The property of having mass is a determinable that appears to have two kinds of determinates. On the one hand, we naturally think that something with mass has a determinate intrinsic property, a property it has independently of its relationships with other material bodies.
But we also think that things with mass stand in various determinate mass relationships with one another, such as x being more massive than y or x being twice as massive as y. My question is: of the intrinsic masses and the mass relationships, which are fundamental?" (p. 105)
(...)
"Conclusion: The question of absolutism vs comparativism has received relatively little discussion, and I consider this a significant lacuna in our understanding of what the natural world fundamentally consists in. In this paper, I have tried to clarify what the issue amounts to and describe where I see the major battle lines as lying. I believe that comparativism is probably the correct view for mass, but if I have not convinced you of that I hope to have shown that the issue is important and that there is interesting further work to do in the area." (pp. 145-146)

50. De Rizzo, Julio. 2019. "How (not) to Argue Against Brute Fundamentalism." *Dialectica* no. 73:395-410.
Abstract: "This paper is a response to McKenzie (2017). I argue that the case she presents is not a genuine counterexample to the thesis she labels *Brute Fundamentalism*. My response consists of two main points. First, that the support she presents for considering her case a *metaphysical* explanation is misguided. Second, that there are principled reasons for doubting that partial explanations in Hempel's sense, of which her case is an instance, are genuinely explanatory in the first place.
Thus McKenzie's attack on Brute Fundamentalism fails."
References
McKenzie, K. 2017, "Against Brute Fundamentalism", *Dialectica*, 71, 2, pp. 231–261.

51. Dorr, Cian. 2013. "Reading 'Writing the Book of the World'." *Philosophy and Phenomenological Research* no. 87:717-724.

"Analytic philosophy is suspicious of jargon words unless introduced by explicit definitions or for purposes of disambiguation. But this healthy suspicion must not be allowed to degenerate into a knee-jerk refusal to admit any conceptual innovations. The heart of *Writing the Book of the World* [by Ted Sider] is an extended plea for the intelligibility, and importance, of a certain technical use of 'structural' (a close cousin of Lewis's technical use of 'natural'). In this central aim, the book is in my view almost entirely successful. Setting aside certain exotic constructions involving 'S' (the formal counterpart of 'structural') which even Sider recognises as straining intelligibility 'to the breaking point' (p. 257), I am convinced that 'structural' is not only intelligible, but a fruitful addition to the philosopher's idiolect, which allows us to raise questions that are interesting both intrinsically and for their bearing on other topics." (p. 717)

52.   ———. 2016. "To Be F Is To Be G." *Philosophical Perspectives* no. 30:39-134.
"I am interested in a certain way of understanding claims of the form 'To be F is to be G', which I take to have played a central role in philosophy from its inception. Here are some examples where the target reading is natural:
(1) a. To be a vixen is to be a female fox.
b. To be square is to be rectangular and equilateral.
c. To be just is to be such that each part of one's soul does its own proper work.
d. To be a human being is to be a rational animal.
e. To be a hydrogen atom is to be an atom whose nucleus contains exactly one proton.
As (1c) and (1d) illustrate, questions whose answers can be given in the form 'To be F is to be G' have been of central interest to philosophers since the beginning. (1e) illustrates that we cannot always tell whether to be F is to be G using "armchair" methods: sometimes, we need to do experiments. But notalways, as witness (1b)."

53.   Dorr, Cian, and Hawthorne, John. 2013. "Naturalness." *Oxford Studies in Metaphysics* no. 8:3-77.
"In the wake of David Lewis's seminal paper 'New Work for a Theory of Universals' (Lewis 1983b), a certain use of the word 'natural' has become widespread in metaphysics and beyond. In this usage, properties can be classifi ed as more or less natural, with perfectly natural properties as a limiting case. For example, Lewis would claim that being *negatively charged* is much more natural than being either *negatively charged or part of a spoon*, and may even be perfectly natural." (p. 3, a note omitted)
(...)
"Our aim in this paper is not to take sides in the debate between naturalness enthusiasts and naturalness sceptics, but to bring some structure to the terrain, replacing displays of contrasting nebulous attitudes with a range of relatively precise and independently debatable questions."
References
Lewis, David (1983b) 'New Work for a Theory of Universals', *Australasian Journal of Philosophy* 61: 343–77. Reprinted in Lewis 1999: 8–55.
—— (1999) *Papers in Metaphysics and Epistemology*. Cambridge: Cambridge University Press.

54.   Duncan, Michael, Miller, Kristie, and Norton, James. 2021. "Ditching Dependence and Determination: Or, How to Wear the Crazy Trousers." *Synthese* no. 198:395-418.
Abstract: "This paper defends Flatland—the view that there exist neither determination nor dependence relations, and that everything is therefore fundamental—from the objection from explanatory inefficacy. According to that objection, Flatland is unattractive because it is unable to explain either the appearance as of there being determination relations, or the appearance as of there being dependence relations. We show how the Flatlander can meet the first challenge by offering four strategies—reducing, eliminating, untangling and omnizing—which, jointly, explain the appearance as of determination relations

where no such relations obtain. Since, plausibly, dependence relations just are asymmetric determination relations, we argue that once we come mistakenly to believe that there exist determination relations, the existence of other asymmetries (conceptual and temporal) explains why it appears that there are dependence relations.""

55. ———. 2022. "Ontology without Hierarchy." In *The Question of Ontology: The Contemporary Debate*, edited by Cumpa, Javier. New York: Oxford University Press.
Not yet publkished; preprint available at PhilPapers.org
Abstract: "It has recently become popular to suggest that questions of ontology ought be settled by determining, first, which fundamental things exist, and second, which derivative things depend on, or are grounded by, those fundamental things. This methodology typically leads to a hierarchical view of ontology according to which there are chains of entities, each dependent on the next, all the way down to a fundamental base. In this paper we defend an alternative ontological picture according to which there is no ontological hierarchy. Such a picture appears counterintuitive (at least to many), in part because in the absence of a hierarchical structure to our world, there would be no structure apt to back metaphysical explanations. There are two reasons to suppose this is so. First, there would be no structure apt to back metaphysical explanations because there would be a fatal mismatch between the formal features of metaphysical explanation, on the one hand, and the structure of the world, on the other hand. Second, in the absence of an ontological hierarchy there would be no structure apt to back metaphysical explanations because the only connections that would obtain between relevant facts are mere correlational connections. But mere correlations are not the right kinds of relations to back metaphysical explanations: explanation requires something more. This paper aims to show that neither of these is a good reason to prefer a hierarchical view of ontology."

56. Eddon, Maya. 2013. "Fundamental Properties of Fundamental Properties." *Oxford Studies in Metaphysics* no. 8:78-104.
"*Two grams mass* and *3 coulombs charge* are examples of *quantitative properties*. Such properties have certain structural features that other sorts of properties lack. How should we account for the distinctive structure of quantity? The answer to this question will depend, in large part, on one's other metaphysical commitments. In this paper I focus on the metaphysical framework offered by David Lewis."
(...)
"This paper proceeds as follows. In sections 2 and 3, I lay out some background assumptions, and sketch some of the structural features of quantity. In section 4, I assess several accounts of quantity, and argue that the one best suited to a Lewisian framework posits perfectly natural second-order relations. In section 5, I address worries that an account of the structural features of quantity, in terms of the perfectly natural, is not required. If such an account is not provided, I argue, then many accounts that make use of perfectly natural properties and relations are untenable. In section 6, I use the results of the previous sections to argue that the perfectly natural properties and relations do not comprise a minimal supervenience base." (pp. 78-79)

57. ———. 2017. "Parthood and Naturalness." *Philosophical Studies* no. 174:3163-3180.
Abstract: "Is *part of* a perfectly natural, or fundamental, relation? Philosophers have been hesitant to take a stand on this issue. One reason for this hesitancy is the worry that, if parthood is perfectly natural, then the perfectly natural properties and relations are not suitably ''independent'' of one another. (Roughly, the perfectly natural properties are not suitably independent if there are necessary connections among them.) In this paper, I argue that parthood is a perfectly natural relation. In so doing, I argue that this ''independence'' worry is unfounded. I conclude by noting some consequences of the naturalness of parthood."

58. Fahrbach, Ludwig. 2005. "Understanding Brute Facts." *Synthese* no. 145:449-466.
Abstract: "Brute facts are facts that have no explanation. If we come to know that a
fact is brute, we obviously don't get an explanation of that fact. Nevertheless, we do
make some sort of epistemic gain. In this essay, I give an account of that epistemic
gain, and suggest that the idea of brute facts allows us to distinguish between the
notion of explanation and the notion of understanding.
I also discuss Eric Barnes' (1994) attack on Friedman's (1974) version of the
unification theory of explanation. The unification theory asserts that scientific
understanding results from minimizing the number of brute facts that we have to
accept in our view of the world. Barnes claims that the unification theory cannot do
justice to the notion of being a brute fact, because it implies that brute facts are gaps
in our understanding of the world. I defend Friedman's theory against Barnes'
critique."
References
Barnes, E.: 1994, 'Explaining Brute Facts', *Proceedings of the Philosophy of
Science Association* 199, Vol. 1, pp. 61–68.
Friedman, M.: 1974, 'Explanation and Scientific Understanding', *Journal of
Philosophy* 71, 5–19.

59. Fine, Kit. 2013. "Fundamental Truth and Fundamental Terms." *Philosophy and
Phenomenological Research* no. 87:725-732.
Comments on Siders' 'Writing the Book of the World' [New York: Oxford
University Press, 2011.]
"Ted Sider's 'Writing the Book of the World' is a bold and ambitious work, offering
original and provocative answers to a wide range of questions within metaphysics
and meta-metaphysics. The book is focused on the topic of fundamentality—of what
is fundamental and of what it is to be fundamental and, although Sider is largely
concerned to develop his own positive views on the topic, he does devote a couple
of sections (§§8.1-2) to my views, as laid out in the paper, 'The Question of
Realism'. (1) I hope I may therefore be forgiven for devoting my attention to some
of the more critical points that he makes in these sections." (p. 725)
(1) *Imprint*, vol. 1, no. 1, 2001, reprinted in '*Individuals, Essence and Identity:
Themes of Analytic Philosophy*' (ed. A. Bottani, M Carrara, P. Giaretta), Dordrecht:
Kluwer 2002, 3-41.

60. Fiocco, M. Oreste. 2019. "What Is a Thing?" *Metaphilosophy* no. 50:649-669.
Abstract: "Thing" in the titular question of this paper should be construed as having
the utmost generality. In the relevant sense, a *thing* just is an *entity*, an *existent*, a
being. The present task is to say what a thing *of any category* is. This task is the
primary one of any comprehensive and systematic metaphysics. Indeed, an answer
provides the means for resolving perennial disputes concerning the *integrity* of the
structure in reality—whether some of the relations among things are *necessary*
merely given those relata themselves—and the *intricacy* of this structure—whether
some things are more or less *fundamental* than others. After considering some
reasons for thinking the generality of the titular question makes it unanswerable, the
paper propounds the methodology, *original inquiry*, required to answer it. The key
to this methodology is adopting a singular perspective; confronting the world as
merely the *impetus to inquiry*, one can attain an account of what a thing must be.
Radical ontology is a systematic metaphysics—broadly Aristotelian, essentialist,
and nonhierarchical—that develops the consequences of this account. With it, it is
possible to move past stalemate in metaphysics by revealing the grounds of a
principled choice between seemingly incommensurable worldviews."

61. ———. 2019. "Each Thing Is Fundamental: Against Hylomorphism and
Hierarchical Structure." *American Philosophical Quarterly* no. 56:289-301.
Abstract: "Each thing is fundamental. Not only is no thing any more or less *real*
than any other, but no thing is *prior* to another in any robust ontological sense.
Thus, no thing can explain the very existence of another, nor account for how
another is what it is. This surprising conclusion is reached by undermining two

important positions in contemporary metaphysics: *hylomorphism* and *hierarchical views* employing so-called building relations, such as *grounding*. The paper has three main parts.

First, it is observed that hylomorphism is alleged by its proponents to solve various philosophical problems. However, it is demonstrated, in light of a compelling account of explanation, that these problems are actually demands to explain what cannot be but inexplicable. Second, it is shown how the argument against hylomorphism illuminates an account of the *essence* of a thing, thereby providing insight into what it is to exist. This indicates what a thing, in the most general sense, must be and a correlative account of the structure in reality. Third, it is argued that this account of *structure* is incompatible not only with hylomorphism, but also with any hierarchical view of reality. Although hylomorphism and the latter views are quite different, representing distinct philosophical traditions, it is maintained that they share untenable accounts of structure and fundamentality and so should be rejected on the same grounds."

62.   Fisher, A. R. J. 2016. "Truthmaking and Fundamentality." *Pacific Philosophical Quarterly* no. 97:448-473.
Abstract: "I apply the notion of truthmaking to the topic of fundamentality by articulating a truthmaker theory of fundamentality according to which some truths are truth-grounded in certain entities while the ones that don't stand in a metaphysical-semantic relation to the truths that do. I motivate this view by critically discussing two problems with Ross Cameron's truthmaker theory of fundamentality. I then defend this view against Theodore Sider's objection that the truthmaking approach to fundamentality violates the *purity constraint*. Truthmaker theorists can have a trouble-free theory of fundamentality."

63.   French, Steven. 2022. "Fundamentality." In *The Routledge Companion to the Philosophy of Physics*, edited by Knox, Eleanor and Wilson, Alastair, 679-688. New York: Routledge.
"The idea that there is some fundamental "level" or "ground" where our description of the world bottoms out has acquired the status of 'the received view' in metaphysics (a classic statement of this view can be found in Oppenheim and Putnam (1958); for a more recent critical defense, see Cameron, 2008). Typically this view is cashed out in terms of some set of 'basic building blocks' populating this level, which sits at the bottom of a hierarchy ordered according to some set of compositional principles. These fundamental building blocks are thus taken to have some form of "ultimate" ontological priority with regard to everything else in the hierarchy. In this chapter I shall consider two kinds of threats to this view: the first comes from arguments against the idea of such a level in general, whereas the second concerns the nature of these occupants. As we 'll see, both these threats become entwined in the context of modern physics but I 'll conclude with a suggestion as to how this "received view" may be maintained in this context. (...)
In what follows the broad framework that I shall adopt with regard to this relationship will be that set out in (French and McKenzie, 2012, 2015): on the one hand, if metaphysics is to be understood as saying some thing about reality, then the implications of modern science and, in particular, physics need to be properly appreciated and this in turn will impact on certain "paradigmatic" metaphysical accounts, such as the received view, above; on the other, one does not have to accept that non-naturalistic metaphysics should be dismissed or even "discontinued" as some have pressed (Ladyman et al., op. cit.), since it can still serve as a kind of "toolbox" from which various devices and maneuvers can be extracted and put to use.In what follows I hope to illustrate both as aspects of this framework." (p. 679)
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Oppenheim, P. and Putnam, H. (1958). Unity of science as a working hypothesis. In H. Feigl et al. (eds.), Minnesota Studies in the Philosophy of Science, Vol. 2,

Minneapolis: Minnesota University Press; also in The Philosophy of Science, R. Boyd, P. Gasper, and J.D. Trout (eds.). London: MIT Press, pp. 405–427, 1991.
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French, S. and McKenzie, K. (2015). 'Rethinking outside the toolbox: Reflecting again on the relationship between philosophy of science and metaphysics', with K. McKenzie. In T. Bigaj and C. Wuthrich (eds.), Metaphysics in Contemporary Physics, Poznan Studies in the Philosophy of the Sciences and the Humanities, Rodopi, pp. 145–174.
Ladyman, J., Ross, D., et al. (2007). Every Thing Must Go: Metaphysics Naturalized. Oxford: Oxford University Press.

64. Frugé, Christopher. 2021. "Joints and Basic Ways." *Inquiry: An Interdisciplinary Journal of Philosophy*.
First online 4 March 2021.
Abstract: "Metaphysicians often distinguish between *joints* and *basic ways.* Joints are the unified and joint-carving properties that trace the structure of the world. They are theorized under the ideology of *structural, perfectly natural*, or *sparse* properties. Basic ways are the ultimate and independent properties that give rise to all others. They are theorized under the ideology of *grounding*, where the ungrounded properties are the basic ways. While these notions are often seen as rivals, I argue that we need both, because the *joints* and the *basic ways* crosscut. For the sake being exhaustive and ecumenical, I distinguish between *natural* and *normative* sorts of joints and basic ways. I argue that, for either sort, *if* there is such a sort of joint and basic way, then there are joints that are not basic ways and there are basic ways that are not joints."

65. Funkhauser, Eric. 2022. "The Natural, the Fundamental, and the Perfectly Similar: Unraveling a Metaphysical Braid." *Metaphilosophy* no. 53:85-99.
Abstract: "Some of our most prominent metaphysicians have argued for a notion of naturalness that combines the roles of joint-carving, fundamentality, and perfect similarity. This paper argues that it is a mistake to think that there are select properties fulfilling all these roles. Toward this end, epistemologically tractable diagnostic markers for naturalness are presented. From these it follows that there can be perfect naturalness and similarity at nonfundamental levels; and the fundamental need not be perfectly natural or yield perfect similarities. Metaphysicians of naturalness are encouraged to attend to insights from metaphysical property theory and the interdisciplinary study of patterns and complexity, both of which support these conclusions. Distinct metaphysical projects are distinguished."

66. Gang, Chen. 2009. "Hierarchy, Form, and Reality." *Frontiers of Philosophy in China* no. 4:437-453.
Abstract: "Scientific progress in the 20th century has shown that the structure the world is hierarchical. A philosophical analysis of the hierarchy will obvious significance for metaphysics and philosophy in general. Jonathan Schaffer's paper, "Is There a Fundamental Level?", provides a systematic of the works in the field, the difficulties for various versions of fundamentalism, and the prospect for the third option, i.e., to treat each level as ontologically equal. The purpose of this paper is to provide an argument for the third option. The author will apply Aristotle's theory of matter and form to the discussion of the hierarchy and develop a theory of form realism, which will grant every level with "full citizenship in the republic of being." It constitutes an argument against ontological and epistemological reductionism. A non-reductive theory of causation is also developed against the fundamental theory of causation"

67. Giannotti, Joaquim. 2021. "Fundamental Yet Grounded." *Theoria* no. 87:578-599.
Abstract: "Grounding is claimed to offer a promising characterization of the fundamental as that which is ungrounded. Detractors of this view argue that there

can be fundamental and yet mutually grounded entities. Such a possibility undermines the definition of the fundamental as the ungrounded. I aim to show, however, that the possibility of fundamental mutually grounded entities does not force us to renounce the prospects of characterizing fundamentality in terms of grounding.

To accomplish this aim, I defend a grounding-based view that accommodates fundamental mutually grounded entities straightforwardly. My definition of fundamentality is similar to, but importantly different from, one that Karen Bennett discusses. I conclude by resisting two objections raised by Jessica Wilson against the Bennettian framework that also target the proposed view."

68.   ———. 2021. "The Fundamentality of Fundamental Powers." *Acta Analytica* no. 36:589-613.

Abstract: "Dispositional essentialism is the view that all or many fundamental properties are essentially dispositional, or *powers*. The literature on the dispositional essence of powers is abundant. In contrast, the question of how to understand the fundamentality of fundamental powers has received scarce interest. Therefore, the fundamentality of powers stands in need of clarification. There are four main conceptions of the fundamental, namely as that which is (i) *metaphysically independent*; or (ii) *belonging to a minimally complete basis*; or (iii) *perfectly natural*; or (iv) *metaphysically primitive*. Here, I present and discuss each of these approaches from the viewpoint of dispositional essentialism. I show that (i) is incompatible with the metaphysics of powers and (ii)–(iv) have more drawbacks than merits. Therefore, my conclusion is that the dispositional essentialist should seek an alternative. Although I offer no positive account, I pave the way to more fruitful views by identifying the shortcoming of these unpromising options."