Metaphysical Grounding: Annotated bibliography

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Annotated bibliography on metaphysical grounding

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Bibliography

1. "Grounding Relation(s)." 2013. *Essays in Philosophy* no. 14.
   Edited by Paul Hovda & Troy Cross.
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2. "Aristotelian Metaphysics: Essence and Ground." 2014. *Studia Philosophica Estonica* no. 7.2.
   Edited by Riin Sirkel and Tuomas E. Tahko.

3. "Special Issue on Ground, Essence, and Modality." 2021. *Synthese* no. 198.
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4. Aizawa, Ken. 2016. "Compositional Explanation: Dimensioned Realization, New Mechanism, and Ground." In *Scientific Composition and Metaphysical Ground* , edited by Aizawa, Ken and Gillett, Carl, 75-90. London: Palgrave-Macmillan.
   "The primary concern of this chapter is to bring Dimensioned realization to the attention of both New Mechanists and "Grounders." For both New Mechanists and Grounders, recognizing compositional explanations involving Dimensioned realization is an important step in the development of more descriptively adequate accounts of non-causal, compositional explanations. More specifically, Dimensioned realization shows how New Mechanists might embrace compositional explanatory relations among properties. Moreover, Dimensioned realization

suggests that, at least at times, one needs to move beyond bare grounding claims—claims such as "X Grounds Y"—in order to develop a (good) explanation. 3 In principle, the recognition of Dimensioned realization and its implications might be viewed as friendly additions to work on New Mechanism and Ground." (p. 79)

5.   Aizawa, Kenneth, and Gillett, Carl, eds. 2016. *Scientific Composition and Metaphysical Ground* . London: Palgrave Macmillan.
Contents: Steven French: Series Editor's Preface V-VI; 1. Kenneth Aizawa, Carl Gillett: Introduction: Vertical Relations in Science, Philosophy, and the World: Understanding the New Debates over Verticality 1;
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Index 301-310.
"Aizawa and Gillett's exciting new collection focused on those metaphysical tools designed to capture 'vertical' relations between entities and systems of different kinds. One such device is 'grounding' which has become a ubiquitous umbrella term, covering relations between a variety of entities from the scientific to the social." (From the Series Editor's Preface, p. V)

6.   Aizawa, Ken, and Gillett, Carl. 2016. "Introduction: Vertical Relations in Science, Philosophy, and the World: Understanding the New Debates over Verticality." In *Scientific Composition and Metaphysical Ground* , edited by Carl Gillett, Ken Aizawa, 1-38. London: Palgrave-Macmillan.
"Given our limited space, we cannot provide a detailed characterization of even one of the philosophical research traditions about verticality. Each of these traditions has a rich history, is sophisticated in its treatment of verticality, has numerous proponents off ering distinct variants, and includes a range of competing versions of the relevant type of V-framework. Our focus is therefore simply to provide a minimal characterization of each research tradition for our purposes here, which are twofold. We simply seek, first, to give the reader an initial sense of the research tradition and, second, we seek to highlight one or two distinctive features of verticality as it is characterized under the particular kind of account offered by the research tradition." (p. 9)

7.   Alvarado, José Tomas, and Tugby, Matthew. 2021. "A Problem for Natural-Kind Essentialism and Formal Causes." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 201-221. New York: Routledge.
"In the first section we will present some of the main characteristics of the relations of grounding and dependence, and what constraints must be respected when they interact. In the second section, we will introduce the main problem as it occurs in natural-kind essentialism. The third and fourth sections will discuss some alternatives that may be attempted by defenders of natural-kind ontologies to assuage the problem presented, in particular, a theory of 'substantial forms' and a structuralist stance towards the connection between kinds and essential properties. What appears through this examination is a significant concern for all those enthusiastic about the prospects of 'formal causes' in metaphysics. The function attributed to these causes should be treated carefully to avoid incoherent structures of ontological explanation." (pp. 201-202)

8.   Amijee, Fatema. 2021. "Explaining Contingent Facts." *Philosophical Studies* no. 178:1163-1181.
      Abstract: "I argue against a principle that is widely taken to govern metaphysical explanation. This is the principle that no necessary facts can, on their own, explain a contingent fact. I then show how this result makes available a response to a longstanding objection to the Principle of Sufficient Reason—the objection that the Principle of Sufficient Reason entails that the world could not have been otherwise (i.e. that all facts are necessary)."

9.   Assadian, Bahram, and Nassim, Jonathan. 2019. "Indeterminacy and Failure of Grounding." *Theoria* no. 85:276-288.
      Abstract: "Cases of grounding failure present a puzzle for fundamental metaphysics. Typically, solutions are thought to lie either in adding ontology such as haecceities or in re-describing the cases by means of the ideology of metaphysical indeterminacy. The controversial status of haecceities has led some to favour metaphysical indeterminacy as the way to solve the puzzle. We consider two further treatments of grounding failure each of which, we argue, is a more plausible alternative. As such, the initial dichotomy is a false one, and these alternative options deserve consideration before resorting to the heavyweight machinery of metaphysical indeterminacy."

10.   Atiq, Emad H. 2018. "On Ground as a Guide to Realism." *Ratio* no. 31:165-178.
      Abstract: "According to Fine (among others), a nonbasic factual proposition must be grounded in facts involving those of its constituents that are both real and fundamental. But the principle is vulnerable to several dialectically significant counterexamples. It entails, for example, that a logical Platonist cannot accept that true disjunctions are grounded in the truth of their disjuncts; that a Platonist about mathematical objects cannot accept that sets are grounded in their members; and that a colour primitivist cannot accept that an object's being scarlet grounds its not being chartreuse. The Finean might try to defend these implications, but it generates further problems. Instead, the principle should be rejected. An important upshot is that the principle cannot be relied on to distinguish robust realism from anti-realism about a propositional domain, for the principle obscures ways of taking features to be both real and fundamental."

11.   Audi, Paul. 2012. "Grounding: Toward a Theory of the *In-Virtue-of* Relation." *The Journal of Philosophy* no. 109:685-711.
      "The phrase 'in virtue of' is ubiquitous in philosophy. Nearly as pervasive are the protestations that it is poorly understood and in need of clarification. Far less common are sustained attempts to elucidate this phrase and its philosophical significance.
      I propose that it expresses a primitive, noncausal relation of determination, which I call *grounding* . Although my understanding of grounding fits well with many of the most interesting and important uses of the phrase 'in virtue of' (and related locutions), my account is not purely descriptive; my claim is that we should regiment our use of the phrase to achieve the best theoretical result." (pp. 685-686, notes omitted)

12.   ———. 2012. "A Clarification and Defense of the Notion of Grounding." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 101-121. Cambridge: Cambridge University Press.
      "This paper defends a particular version of the idea that there is a non-causal relation of determination, *grounding* , often expressed by the phrase "in virtue of ." This relation corresponds to certain non-causal explanations, including those philosophers give, e.g., in saying that a statue has its aesthetic properties in virtue of its physical properties, or that a thing has its dispositional features in virtue of its categorical features, or that a person has a reason to believe that *p* in virtue of her perceptual experiences. Indeed, it is the fact that there are such explanations,

together with the fact that their correctness cannot be underwritten by any causal relation, that makes it incumbent on us to recognize grounding." (p. 101)

13.   ———. 2016. "Property Identity." *Philosophy Compass* no. 11:829-840.
Abstract: "The question of how properties are individuated is extremely important. Consider the following proposals. To be in pain is to be in a certain neurological state. To be red is to appear red to normal observers in standard conditions. To be obligatory is to maximize the good. Each makes a claim of property identity. Each is a substantive metaphysical thesis of wide interest. None can be studied with due scrutiny in the absence of a general account of property identity. Here, I will survey existing accounts and suggest a new account in terms of grounding that has some advantages over the other candidates."

14.   ———. 2020. "Why Truthmaking Is Not a Case of Grounding." *Philosophy and Phenomenological Research* no. 101:567-590.
Abstract: "Truthmaker theorists often express their core commitment by saying that truth is grounded in being, and grounding theorists often take truthmaking to be a paradigm case of grounding. But I will argue that truthmaking is not a case of grounding. What is crucial for understanding truthmaking is not grounding but rather meaning (in a broad sense including reference). Truth is still constrained by how things are, so even if (socalled) truthmakers don't play a role in grounding truths, the methodological program of truthmaker theory survives. Here I lay out my understanding of truth and truthmaking, and distinguish two conceptions of grounding. I argue that truthmaking is not plausibly seen as a case of grounding on either conception. I argue further that treating truthmaking as grounding threatens to violate a plausible irreflexivity principle, and makes trouble for the view that grounding is transitive. I then suggest that there is no genuine relation of truthmaking (which there would have to be if it were a true case of grounding). Finally, I show how the core insights of truthmaker theory are preserved by the understanding of truthmaking that I favor."

15.   Austin, Christopher J. 2021. "Form, Cause, and Explanation in Biology: A Neo-Aristotelian Perspective." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 238-268. New York: Routledge.
"Conclusion: In this chapter I have illustrated the ways in which the mechanization of the natural world in the aftermath of the Scientific Revolution was crystallised in the biological sciences with the formation of the Modern Synthesis-a conceptual framework for evolutionary theory in which the teleological prowess of formal causation is rendered both explanatorily impotent and ontologically otiose. I have argued, however, that the radical reframing of that theory implicit in the explanatory structure of evolutionary developmental biology suggests that the Aristotelian posit of a non-mechanistic ground of the modality of morphology need not be treated with suspicion. Form may yet prove a metaphysically and empirically powerful apparatus with which to comprehend the nature of organisms in the context of our post-Darwinian picture of the living world." (p. 258)

16.   Azzano, Lorenzo, and Carrara, Massimiliano. 2021. "The Grounding of Identities." *Philosophia* no. 49:1943-1962.
Abstract: "A popular stance amongst philosophers is one according to which, in Lewis' words, "identity is utterly simple and unproblematic".[*] Building from Lewis' famous passage on the matter, we reconstruct, and then criticize, an argument to the conclusion that identities cannot be grounded. With the help of relatively uncontroversial assumption concerning identity facts, we show that not all identities are equi-fundamental, and, on the contrary, some appear to be provided potential grounding bases using two-level identity criteria. Further potential grounding bases for identities are presented. Identity might be utterly simple and unproblematic, but this is not sufficient to conclude that identities are ungrounded, or fundamental."
[*] David Lewis, *On the Plurality of Worlds* , Oxford: Wiley-Blackwell, 1986, pp. 192-193.

17. Bader, Ralf. 2013. "Towards a Hyperintensional Theory of Intrinsicality." *The Journal of Philosophy* no. 110:525-563.
Abstract: "The distinction between intrinsic and extrinsic properties is an elusive distinction that has resisted precise formulation.
Some of the most promising accounts of this distinction take the form of combinatorial or duplication analyses. The former try to capture the patterns of independence amongst intrinsic and extrinsic properties in terms of logical, modal, mereological and spatiotemporal notions. The latter attempt to identify intrinsic properties as properties that never differ amongst duplicates. This paper argues in favour of a hyperintensional analysis of intrinsicality that appeals to 'in virtue of' claims. It will be shown that accounts of intrinsicality that appeal to combinatorial and duplication principles do not yield satisfactory results, even when they are supplemented with a notion of 'naturalness'. We need to appeal to 'in virtue of' claims rather than to 'naturalness' in order (i) to allow for cases whereby a property is possessed both intrinsically and extrinsically, (ii) to adequately classify modal properties when these are given a counterparttheoretic analysis, and (iii) to retain the idea that the set of intrinsic properties and the set of pure extrinsic properties are closed under Boolean operations. Moreover, the paper will argue in favour of treating the intrinsically/extrinsically distinction as more basic than the intrinsic/extrinsic distinction and explaining the latter in terms of the former."

18. ———. 2013. "Multiple-Domain Supervenience for Non-Classical Mereologies."
In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 347-367. Munich: Philosophia Verlag.
"Conclusion: Thus, we have seen that we can use co-ordinated multiple-domain supervenience relations to model determination and dependence relations between complex entities and their constituents. In particular, we developed two ways of making such supervenience claims, namely (i) by appealing to R -related pairs, and (ii) by making use of associated isomorphisms. Moreover, it was shown that suitable supervenience relations can be devised not only for classical mereological systems but also for non-classical ones, by modifying the domains and imposing various conditions on mappings that allow us to capture the additional structure of non-classical parthood relations. Additionally, we provided principles for cases in which wholes are taken to be prior to their parts that are applicable in settings in which one is dealing with dense parthood orderings and atomless gunk." (p. 366-367)

19. ———. 2017. "The Grounding Argument against Non-Reductive Moral Realism." *Oxford Studies in Metaethics: Vol. 12* :106-134.
Abstract: "Strong supervenience of normative properties on non-normative properties implies that for every normative property there is a necessarily co-extensive non-normative property, given that the set of non-normative properties is closed under infinitary disjunction and conjunction (cf. Kim 1993: chapter 3, Jackson 1998, Streumer 2008). This puts pressure on non-reductionist versions of moral realism, insofar as normative properties would seem to end up being identical to non-normative properties, thereby ruling out the existence of irreducibly normative properties." (Notes omitted)
References
Jackson, F. (1998) *From Metaphysics to Ethics* (Oxford: Oxford University Press).
Kim, J. (1993) *Supervenience and Mind* (Cambridge: Cambridge University Press).
Streumer, B. (2008) 'Are there irreducibly normative properties?' *Australasian Journal of Philosophy* 86(4): 537–61.

20. Bailey, Andrew M. 2011. "The Incompatibility of Composition as Identity, Priority Pluralism, and Irreflexive Grounding." *Analytic Philosophy* no. 52:171-174.
"Some have it that wholes are, somehow, identical to their parts. This doctrine is as alluring as it is puzzling. But in this paper, I show that the doctrine is incompatible with two widely accepted theses. Something has to go." (p. 171)

(...)
"... composition as identity promises answers to the General and Special Composition Questions.(13) These are intriguing promissory notes; but if composition as identity is false, we cannot cash them. Those interested in these mereological questions had best look elsewhere for help." (p. 174)
(13) 13. But see Cameron (forthcoming) and McDaniel (forthcoming) for cautionary notes about the
latter claim.
References
R. Cameron, "Composition As Identity Doesn't Settle the Special Composition Question," *Philosophy*
and Phenomenological Research (forthcoming). [73, 97-100, 2010]
K. McDaniel, "Composition As Identity Does Not Imply Universalism," *Erkenntnis* (forthcoming). [84, 531-554. 2012]

21. Barker, Jonathan. 2021. "Grounding and the Myth of Ontological Innocence." *Australasian Journal of Philosophy* no. 99:303-318.
Abstract: "According to the Ontological Innocence Thesis (OIT), grounded entities are ontologically innocent relative to their full grounds. I argue that OIT entails a contradiction, and therefore must be discarded. My argument turns on the notion of 'groundmates', two or more numerically distinct entities that share at least one of their full grounds. I argue that, if OIT is true, then it is both the case that there are groundmates and that there are no groundmates. Therefore, I conclude, OIT is false. Moreover, in seeing why OIT is false, we will be left with three heterodox options about grounding and reality's structure. So this paper's second conclusion is that, even after we have discarded OIT, we are in for an additional surprise."

22. Barker, Stephen. 2012. "Expressivism about Making and Truth-Making." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 272-293. Cambridge: Cambridge University Press.
"The facts of truth are not primitive facts. Unless we accept the identity theory of truth – and equate truth and fact – the fact that a proposition is true must obtain in virtue of something: how things are with its subject matter.(1) We might express this thought as the idea that truth supervenes on, is asymmetrically determined by, being (see Bigelow 1988). But that would be misleading, since it suggests that truth is not part of being. The facts of truth, that certain propositions are true or false, are part of how things are, and so, are aspects of being. We should say rather that the facts of truth, the alethic facts, are made the case by non-alethic facts. (Still, as we shall see, that claim will need qualification.) Viewed in this way, the problem of truth-making reduces to the problem of making. What's making ?" (p. 272)
(1) Rodríguez-Pereyra 2005 presents this kind of argument for truth-making.
References
Beebee, H. and Dodd, J. (eds.) 2005. *Truthmakers: The Contemporary Debate.* Oxford: Clarendon Press
Bigelow, J. 1988. *The Reality of Numbers* . Oxford University Press
Rodríguez-Pereyra, G. 2005. 'Why Truthmakers', in Beebee and Dodd 2005, 17–31

23. Baron, Sam. 2015. "The Priority of the Now." *Pacific Philosophical Quarterly* no. 96:325-348.
Abstract: "This article motivates and develops a new theory of time: priority presentism. Priority presentism is the view according to which (i) only present entities exist fundamentally and (ii) past and future entities exist, but they are grounded in the present. The articulation of priority presentism is an exercise in applied grounding: it draws on concepts from the recent literature on ontological dependence and applies those concepts in a new way, to the philosophy of time. The result, as I will argue, is an attractive position that can do much of the same work in satisfying our intuitions about time as presentism, but without the ontological cost."

24.   Baron, Sam, Miller, Kristie, and Norton, James. 2014. "Groundless Truth." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 57:175-195.
Abstract: "We defend two claims: (1) if one is attracted to a strong non-maximalist view about truthmaking, then it is natural to construe this as the view that there exist fundamental truths; (2) despite considerable aversion to fundamental truths, there is as yet no viable independent argument against them. That is, there is no argument against the existence of fundamental truths that is independent of any more specific arguments against the ontology accepted by the strong non-maximalist. Thus there is no argument that the strong non-maximalist herself will find dialectically motivating."

25.   Baron, Sam, Miller, Kristie, and Tallant, Jonathan. 2020. "Grounding at a Distance." *Philosophical Studies* no. 177:3373-3390.
Abstract: "What distinguishes causation from grounding? One suggestion is that causation, but not grounding, occurs over time. Recently, however, counterexamples to this simple temporal criterion have been offered. In this paper, we situate the temporal criterion within a broader framework that focuses on two aspects: locational overlapping in space and time and the presence of intermediaries in space and time. We consider, and reject, the idea that the difference between grounding and causation is that grounding can occur without intermediaries. We go on to use the fact that grounding and causation both involve intermediaries to develop a better temporal criterion for distinguishing causation from grounding. The criterion is this: when a cause and effect are spatially disjoint, there is always a chain of causal intermediaries between the cause and the effect that are extended in time. By contrast, when the grounds and the grounded are spatially disjoint, there is always a chain of grounding intermediaries, but the chain need not be extended in time, it can be purely spatial. The difference between grounding and causation, then, is that causation requires time for chaining in a way that grounding does not."

26.   Baron, Samuel, Miller, Kristie, and Tallant, Jonathan. 2022. "The Harmony of Grounding." *Philosophical Studies* .
Not yet published, available philarchive.org.
Abstract: "Mereological harmony is the idea that the mereological structure of objects mirrors the mereological structure of locations. Grounding harmony is the idea that there is a similar mirroring between the grounding structure of objects and locations. Our goal in this paper is exploratory: we introduce and then explore two notions of grounding harmony: locative and structural. We outline potential locative and structural harmony principles for grounding, and show which of these principles may entail, or be entailed by, principles of mereological harmony. We then present a case study in grounding harmony, by applying it to Schaffer's (2010a) specific version of priority monism. We show that, given a strong form of grounding harmony, Schaffer-style monism is inconsistent, but that this inconsistency can be resolved by offering bespoke notions of grounding harmony. We use Schaffer's priority monism to demonstrate a broader tension within certain packages of metaphysical views, including versions of priority pluralism. We close by briefly considering the case against structural grounding harmony."

27.   Baron-Schmitt, Nathaniel. 2021. "Contingent Grounding." *Synthese* no. 199:4561-4580.
Abstract: "A popular principle about grounding, "Internality", says that if A grounds B, then necessarily, if A and B obtain, then A grounds B. I argue that Internality is false. Its falsity reveals a distinctive, new kind of explanation, which I call "ennobling". Its falsity also entails that every previously proposed theory of what grounds grounding facts is false. I construct a new theory."

28.   Batchelor, Roderick. 2010. "Grounds and Consequences." *Grazer Philosophische Studien* no. 80:65-77.
Summary: "We first introduce the intuitive idea of a relation of grounding between facts (§ 1).

Then we propose a definition of this idea, based on a certain theory of the structure of facts (§ 2, with formalization in an appendix). Finally we consider the idea of proofs of a special kind, namely proofs which follow the grounds of what is proved (§ 3)."

29.   Bennett, Karen. 2004. "Spatio-Temporal Coincidence and the Grounding Problem." *Philosophical Studies* no. 118:339-371.
Abstract: "A lot of people believe that distinct objects can occupy precisely the same place for the entire time during which they exist. Such people have to provide an answer to the 'grounding problem' – they have to explain how such things, alike in so many ways, nonetheless manage to fall under different sortals, or have different modal properties. I argue in detail that they cannot say that there is anything in virtue of which spatio-temporally coincident things have those properties. However, I also argue that this may not be as bad as it looks, and that there is a way to make sense of the claim that such properties are primitive."

30.   ———. 2011. "By Our Bootstraps." *Philosophical Perspectives* no. 25:27-41.
"Conclusion: I admit that the superinternality solution is occasionally hard to articulate, but that does not make it wrong. The regresses are suprisingly hard to articulate, too, but that does not make them nonsense.
The grounding dilemma is hard. On pain of flatworldism, we must solve it.
To solve it, we must either claim that both the grounding facts and the grounding relation are fundamental, or else claim that they are grounded, or else wave a magic wand and find some way between the horns. I have not argued that the first and third options are hopeless. I have simply argued that the second is definitely not. Grounding is not fundamental." (p. 41)

31.   ———. 2021. "Why I Am Not a Dualist." *Oxford Studies in Philosophy of Mind* no. 1:208-231.
"I am not a dualist. I do not think there are any nonphysical properties, substances, or facts. I think that the entire nature of the world is grounded in—determined or settled by—its fundamental physical nature.
But why do I think this? In the bright light of day, I take physicalism to be almost obvious. But in the dark of night, I have to admit to myself that it is not entirely clear why exactly I dislike dualism. Are there good arguments against it? That is, set aside whether there are good objections to the arguments *for* dualism, or against physicalism. Are there good arguments against the view itself?
In what follows, I will take up that question. After more carefully spelling out what I take dualism and physicalism to be, I will suggest that the most frequently heard arguments against dualism are more problematic than we physicalists like to admit. I will then offer a new argument against dualism.
In broad strokes, it is this: dualists do not dodge all demands for explanation by denying that consciousness can be explained in physical terms. I will articulate what exactly it is that they must explain, and offer two independent arguments for thinking that they cannot do so. The basic upshot is that moving to dualism because of a perceived explanatory failure of physicalism simply does not help." (p. 208)

32.   Benovsky, Jiri. 2012. "Aesthetic Supervenience vs. Aesthetic Grounding." *Estetika* no. 49:166-178.
Abstract: "The claim that having aesthetic properties supervenes on having non-aesthetic properties has been widely discussed and, in various ways, defended. In this article, I aim to demonstrate that even if it is sometimes true that a supervenience relation holds between aesthetic properties and 'subvenient' non-aesthetic ones, it is not the interesting relation in the neighbourhood. As we shall see, a richer, asymmetric, and irreflexive relation is required, and I shall defend the claim that the increasingly popular relation of grounding does amuch better job than supervenience."

33.   Berker, Selim. 2018. "The Unity of Grounding." *Mind* no. 127:729-777.

Abstract: "I argue—contra moderate grounding pluralists such as Kit Fine and more extreme grounding pluralists such as Jessica Wilson—that there is fundamentally only one grounding/in-virtue-of relation. I also argue that this single relation is indispensable for normative theorizing—that we can't make sense of, for example, the debate over consequentialism without it. It follows from what I argue that there is no metaethically-pure normative ethics (in contrast to Ronald Dworkin's claim that there is no normatively-pure metaethics)."

34.　　Bernstein, Sara. 2016. "Grounding Is Not Causation." *Philosophical Perspectives* no. 30:21-38.
"Grounding is not causation, and is not *like* causation, *contra* its contemporary characterizers. Apparent similarities between causation and grounding are mostly superficial, and utilizing causation as a way to illuminate ground glosses over their important dissimilarities while failing to untangle distinct, subtle problems that both grounding and causation face. Or so I will argue." (p. 21)
(...)
"In the following discussion, I set these claims in my sights. I target two distinct but similar theses: what Schaffer (2016) calls "grounding-causation unity", the thesis that grounding and causation are only nominally distinct relations, and what I will call "grounding-causation comparison", the methodological process of illuminating ground by appealing to similar features of causation. I call proponents of either of these two theses Grinders, or those who meld together the notions of causation and grounding literally or metaphorically." (p. 22)
(...)
"Conclusion
Grounding skepticism has largely focused on challenging the univocality, usefulness, and explanatory power of grounding. Here I have issued a new challenge to grounding: that it cannot be illuminated by appeal to the familiar notion of causation. Perhaps groundhogs will find a new notion to which to appeal in order to illuminate ground, or perhaps grounding skeptics will be satisfied with another methodological route to securing a transparent notion of ground. But attempting to use causation as a guide to ground emphasizes similarities that turn out to be superficial, while ignoring the intricacies that genuinely characterize each notion. Groundhogs [*] should not be Grinders: they need another path forward." (p. 35)
[*] I owe thanks to Kit Fine's "Essential Glossary of Ground" for this term.
References
Schaffer, J. (2016). "Grounding in the Image of Causation", *Philosophical Studies* 173(1): 49–100.

35.　　———. 2018. "Causal Idealism." In *Idealism: New Essays in Metaphysics* , edited by Goldschmidt, Tyron and Pearce, Kenneth L., 217-230. New York: Oxford University Press.
"A quick disclaimer: as a causal realist, I am invested in discovering an objective, mind-independent causal relation. Thus I will not make it my goal in this discussion to defend causal idealism against general objections or broader criticism. Rather, my goal will be to give causal idealism a fair shake by articulating it clearly and fairly, and to explain why the view should be considered a viable alternative to the mixed views I have mentioned.
Roadmap: In section 1, I articulate the thesis of causal idealism, and apply it to some contemporary problems for causal theories. In section 2, I give an overview of a family of views that incorporates human thought and agency into the causal relation. In section 3, I weigh causal idealism against the discussed mixed views, and argue that causal idealism is a viable alternative." (p. 218)

36.　　Bertrand, Michael. 2020. "We Need Non-factive Metaphysical Explanation." *Erkenntnis* :1-21.
First online 7 February 2020.

Abstract: "Suppose that A explains B. Do A and B need to be true? Provided that we have metaphysical explanation in mind, orthodoxy answers "yes:" metaphysical explanation is factive. This article introduces and defends a non-factive notion of metaphysical explanation. I argue that we need a non-factive notion of explanation in order to make sense of explanationist arguments where we motivate a view by claiming that it offers better explanations than its competitors. After presenting and rejecting some initially plausible rivals, I account for non-factive metaphysical explanation by drawing on existing applications of structural equation models to metaphysical grounding."

37.   Bianchi, Silvia, and Giannotti, Joaquim. 2021. "Grounding Ontic Structuralism." *Synthese* no. 199:5205-5223.
Abstract: "A respectable assessment of priority-based ontic structuralism demands an elucidation of its metaphysical backbone. Here we focus on two theses that stand in need of clarification: (1) the Fundamentality Thesis states that structures are fundamental, and (2) the Priority Thesis states that these structures are prior to putative fundamental objects, if these exist. Candidate notions to illuminate (1) and (2) such as supervenience and ontological dependence failed at this task. Our purpose is to show that grounding is the best competitor to articulate (1) and (2), and regiment such theses in a desirable unified way. Our strategy is two-fold. First, we make the case that grounding does better than ontological dependence and supervenience. Second, we show that the distinction between partial and full grounds permits us to respond to an objection raised by Kerry McKenzie against the proposal of interpreting priority-based Ontic Structuralism in the idiom of metaphysical determination. Our conclusion is that priority ontic structuralists have compelling reasons for adopting a grounding-based approach."

38.   Bliss, Ricki. 2013. "Viciousness and the Structure of Reality." *Philosophical Studies* no. 166:399-418.
Abstract: "Given the centrality of arguments from vicious infinite regress to our philosophical reasoning, it is little wonder that they should also appear on the catalogue of arguments offered in defense of theses that pertain to the fundamental structure of reality. In particular, the metaphysical foundationalist will argue that, on pain of vicious infinite regress, there must be something fundamental. But why think that infinite regresses of grounds are vicious? I explore existing proposed accounts of viciousness cast in terms of contradictions, dependence, failed reductive theories and parsimony. I argue that no one of these accounts adequately captures the conditions under which an infinite regress—any infinite regress—is vicious as opposed to benign. In their place, I suggest an account of viciousness in terms of explanatory failure. If this account is correct, infinite grounding regresses are not necessarily vicious; and we must be much more careful employing such arguments to the conclusion that there has to be something fundamental."

39.   ———. 2014. "Viciousness and Circles of Ground." *Metaphilosophy* no. 45:245-256.
Abstract: "Metaphysicians of a certain stripe are almost unanimously of the view that grounding is necessarily irreflexive, asymmetric, transitive, and well-founded. They deny the possibility of circles of ground and, therewith, the possibility of species of metaphysical coherentism. But what's so bad about circles of ground? One problem for coherentism might be that it ushers in anti-foundationalism: grounding loops give rise to infinite regresses. And this is bad because infinite grounding regresses are vicious. This article argues that circles of ground do not necessarily give rise to infinite regresses, and where they do, those regresses are not necessarily vicious."

40.   ———. 2018. "Grounding and Reflexivity." In *Reality and its Structure: Essays in Fundamentality* , edited by Bliss, Ricki and Priest, Graham, 70-90. New York: Oxford University Press.
"This paper aims to focus the reasons for which we might find reflexive instances of dependence unacceptable: a task that necessitates an investigation into what it even

means for a fact to ground itself. In §1, I introduce the notion of ground along with the kinds of circles of ground I will be considering. In §2, I present several different reasons to motivate the need to think about circles of ground more seriously. In §3, I discuss possible metaphysically substantive reasons to deny that anything can be self-dependent. Both historically and contemporarily, philosophers have expressed worries over the ontological priority ordering, bootstrapping, and the connection between self-dependence and the necessary and the divine. In §4, I turn to a consideration of explanatory reasons to avoid circles of ground. I discuss connections between circularity, non-well-foundedness, and viciousness, along with the thought that circles of ground are unacceptable for the more (deceptively) humdrum reason that they give rise to trivial and uninformative explanations. I conclude that the most salient reasons we have for supposing grounding is irreflexive are explanatory rather than metaphysical, and that reasons to reject or accept instances of reflexivity need to be assessed with a greater eye to other of our commitments." (p. 71)

41. Block, Ned. 2014. "The Canberra Plan Neglects Ground." In *Qualia and Mental Causation in a Physical World: Themes from the Philosophy of Jaegwon Kim* , edited by Horgan, Terence, Sabates, Marcelo and Sosa, David, 105-133. Cambridge: Cambridge University Press.
"According to the Canberra Plan, the first step in a reductive physicalist enterprise is to functionally define the property to be reduced, and the second step is to find the physical property that fills that functional role.
Reductive physicalism is true for the mind if both steps can always be carried out for mental properties.
(...)
This chapter will argue that the point of view of the Canberra Plan neglects ground. I will consider a few attempts to graft an account of the physical/functional ground of mind onto the Canberra Plan, arguing that such attempts lead nowhere." (p. 105)

42. Bohn, Einar Duenger. 2018. "Indefinitely Descending Ground." In *Reality and its Structure: Essays in Fundamentality* , edited by Bliss, Ricki and Priest, Graham, 167-181. New York: Oxford University Press.
"We often say that some facts obtain in virtue of others, for example that semantic facts obtain in virtue of facts about language-use, or that normative facts obtain in virtue of descriptive facts, or that mental facts obtain in virtue of physical facts. The question I'm interested in is: must such in-virtue-of chains eventually end in some facts that don't obtain in virtue of any other facts? Or can they go on indefinitely without end?(1)
In other words (to be clarified below), must the in-virtue-of relation be well-founded?
In what follows, I argue that it must not, and point to some reasons for it even actually not being so. More specifically, in Section l, I introduce what is perhaps the closest we get to a standard notion of the in-virtue-of relation, namely a relation of grounding; in Section 2, I argue that there is no good reason to think that this relation of grounding must be well-founded; and in Section 3, I argue more directly that it's not necessarily well-founded, and further that there are reasons to think it's actually non-well-founded." (p. 167)
(1) Note that there can be infinite chains that are limited, but I wish to talk about infinite chains that are unlimited; I here and throughout use the term 'indefinite' for that purpose. This should not be confused with the way 'indefinite' is sometimes used in the philosophy of mathematics, where there is a constructional or potential aspect to it, nor should it be confused with the way 'indefinite' is sometimes used in debates over vagueness, where there is an aspect of, well, vagueness to it.

43. Braver, Lee. 2012. *Groundless Grounds: A Study of Wittgenstein and Heidegger* . Cambridge, MA: MIT Press.
"As we have seen, Wittgenstein and Heidegger challenge a number of the assumptions and aspirations that have guided philosophy since its inception.

One of these, foundationalism, is the attempt to trace all knowledge back to a source or set of claims that, as necessarily true, secure the truth of all that is derived from them. Just as a valid argument produces only true conclusions from true premises, so a properly built system insulates the circulation of truth throughout its entirety. As Descartes argues, if we don't know that we know what we think we know, then we may not know it after all.

The problem, which has been with us nearly as long as philosophy itself, is that a base–superstructure organization requires an ultimate level which itself has no justifying foundation underneath it. Absent the troubled notion of self-justifying beliefs, we have either a bottom level hovering over the abyss or, as they say, it's turtles all the way down. Wittgenstein and Heidegger accept the first horn of this perennial dilemma. Stopping at an unjustified level only seems worrisome to a mindset conditioned by foundationalism to expect a transcendent ground which, more than being right, cannot be wrong, an idea which is incompatible with finite creatures like us. Freed from this incoherent demand, we can accept the grounding afforded by human nature and cultural norms as both all that is possible and all that is needed. Once we are weaned off millennia-old cravings for the transcendent, we can learn to live with the human." (pp. 173-174)

44.   Brenner, Andrew. 2020. "Explaining Why There is Something Rather than Nothing." *Erkenntnis* :1-17.
First online 7 June 2020.
Abstract: "It is sometimes supposed that, in principle, we cannot offer an explanation for why there is something rather than nothing. I argue that this supposition is a mistake, and stems from a needlessly myopic conception of the form explanations can legitimately take. After making this more general point, I proceed to offer a speculative suggestion regarding one sort of explanation which can in principle serve as an answer to the question "why is there something rather than nothing?" The suggestion is that there may be something rather than nothing in virtue of the truth of certain sorts of subjunctive conditionals."

45.   ———. 2021. "How Does God Know That $2 + 2 = 4$?" *Religious Studies* no. 57:301-316.
Abstract: "Sometimes theists wonder how God's beliefs track particular portions of reality, e.g. contingent states of affairs, or facts regarding future free actions. In this article I sketch a general model for how God's beliefs track reality. God's beliefs track reality in much the same way that propositions track reality, namely via grounding. Just as the truth values of true propositions are generally or always grounded in their truthmakers, so too God's true beliefs are grounded in the subject matters of those beliefs (i.e. God believes that p in virtue of the fact that p).
This is not idle speculation, since my proposal allows the theist to account for God's true beliefs regarding causally inert portions of reality."

46.   Brewer, Bill. 2019. "Basic Objects as Grounds: A Metaphysical Manifesto." In *The Nature of Ordinary Objects* , edited by Cumpa, Javier and Brewer, Bill, 48-62. Cambridge: Cambridge University Press.
"Introduction: According to our commonsense world-view, macroscopic material objects endure, are never precisely collocated with each other, and may survive the loss of at least some of their parts. But these commitments are notoriously difficult to reconcile. My project in what follows is to elaborate an account that succeeds in reconciling them in the most basic cases, of what I call Natural Continuants, and to explore its potential as an adequate overall theory by explaining how such basic objects may serve as the grounds for various other material things." (p. 48)

47.   Bryant, Amanda. 2018. "Naturalizing Grounding: How Theories of Ground Can Engage Science." *Philosophy Compass* no. 13:1-12.
Abstract: "This paper surveys some of the grounding literature searching for points of contact between theories of ground and science. I find that there are some places where a would-be naturalistic grounding theorist can draw inspiration. I synthesize

a list of recommendations for how science may be put to use in theories of ground. I conclude that the prospects for naturalizing the metaphysics of ground are bright."

48.   ———. 2020. "Physicalism." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 484-500. New York: Routledge.
"Before determining whether grounding may be fruitfully applied to physicalism, we will need some sense of what physicalism is supposed to be. To that end, Section 1 will lay out some key metaphysical physicalist theses. Section 2 will discuss supervenience and some central challenges to supervenience physicalism (see also Kovacs, Chapter 24, this volume). Section 3 will introduce the notion of grounding and use it to formulate physicalism. Finally, Section 4 will consider the relative merits and demerits of grounding physicalism.We will see that while grounding physicalism arguably improves on supervenience physicalism in some respects, serious work remains if grounding is to enable a clearly viable formulation of physicalism." (p. 484)

49.   ———. 2022. "Grounding Interventionism: Conceptual and Epistemological Challenges." *Metaphilosophy* .
First on line 18 February 2022.
Abstract: "Philosophers have recently highlighted substantial affinities between causation and grounding, which have inclined some to import the conceptual and formal resources of causal interventionism into the metaphysics of grounding. The prospect of grounding interventionism raises two important questions: What exactly are grounding interventions, and why should we think they enable knowledge of grounding? This paper approaches these questions by examining how causal interventionists have addressed (or might address) analogous questions and then comparing the available options for grounding interventionism. The paper argues that grounding interventions must be understood in worldly terms, as adding something to or deleting something from the roster of entities, or making some fact obtain or fail to obtain. It considers three bases for counterfactual assessment: imagination, structural equation models, and background theory. The paper concludes that grounding interventionism requires firmer epistemological foundations, without which the interventionist's epistemology of grounding is incomplete and ineffectually rationalist."

50.   Busck Gundersen, Eline. 2013. "Response-Dependence and Conditional Fallacy Problems." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 369-392. Munich: Philosophia Verlag.
"Response-dependence theses seem vulnerable to conditional fallacy problems like those that afflict the simple conditional analysis of dispositions.
This paper is an attempt to clear response-dependence theses of these charges. I discuss what the counterexamples show, and how they might be resisted. I consider three suggested solutions from the literature on response-dependence: Johnston's construal of response-dependence theses in explicitly dispositional terms, Blackburn's 'elasticity' approach, and \Vright's provisional equations. I develop a fourth strategy based on relativisation of the 'favourable conditions' that play a central role in response-dependence theses. I also table, but do not discuss in detail, a fifth suggestion inspired by Lewis's revised conditional analysis of dispositions. I conclude that the resources can be found to defend response-dependence theses against conditional fallacy problems." (p. 369)

51.   Cameron, Margaret. 2014. "Is Ground Said-in-Many-Ways?" *Studia Philosophica Estonica* no. 7.2:29-55.
Abstract: "Proponents of ground, which is used to indicate relations of ontological fundamentality, insist that ground is a unified phenomenon, but this thesis has recently been criticized. I will first review the proponents' claims for ground's unicity, as well as the criticisms that ground is too heterogeneous to do the philosophical work it is supposed to do. By drawing on Aristotle's notion of homonymy, I explore whether ground's metaphysical heterogeneity can be

theoretically accommodated while at the same time preserving its proponents' desideratum that it be a unified phenomenon."

52. Cameron, Ross P. 2016. "Do We Need Grounding?" *Inquiry: An Interdisciplinary Journal of Philosophy* no. 59:382-397.
     Abstract: "Many have been tempted to invoke a primitive notion of grounding to describe the way in which some features of reality give rise to others. Jessica Wilson argues that such a notion is unnecessary to describe the structure of the world: that we can make do with specific dependence relations such as the part–whole relation or the determinate–determinable relation, together with a notion of absolute fundamentality. In this paper I argue that such resources are inadequate to describe the particular ways in which some parts of reality give rise to others, and thus that we do in fact need grounding."
     References
     Wilson, Jessica. 2014. "No Work for a Theory of Grounding." *Inquiry* 57 (5–6): 535–579.

53. Caputo, Stefano. 2013. "The Dependence of Truth on Being: Is There a Problem for Minimalism?" In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 297-323. Munich: Philosophia Verlag.
     "Conclusions: I hope to have vindicated the following claims: first, TDB [asymmetrical dependence of truth on being] truth; second, TDB isue in virtue of facts concerning the nature of our linguistic competence with the truth-predicate; third, a minimalist can perfectly explain, in his framework, these facts and thereb,· why TDB true" (p. 321)

54. Carmichael, Chad. 2016. "Deep Platonism." *Philosophy and Phenomenological Research* no. 92:307–328.
     "According to the bundle theory, particulars are bundles of universals. For example, this blue cup is a bundle of universals including blueness, cuphood, etc. The elements of a bundle are said to be compresent, which distinguishes genuine bundles from arbitrary groupings of unrelated universals. Every particular, on this view, is a bundle of compresent universals. Given the plausible claim that all the facts about bundles are grounded in facts about their members, the bundle theory entails the thesis that all the facts about particulars are grounded in facts purely about universals. This thesis is what I call deep platonism."
     (...)
     "For a variety of reasons, I reject the bundle theory. But I accept deep platonism. I begin by showing how to meet the main objection to deep platonism (which is also the main objection to the bundle theory): that it is inconsistent with the possibility of distinct qualitative indiscernibles (section 1). The key to my reply is a non-standard theory of haecceities as non-well-founded properties of a certain sort. Then I will respond to several objections (section 2). Finally, I will argue that we should accept deep platonism on the basis of considerations of parsimony about the fundamental (section 3)." (pp. 307-308, notes omitted)

55. Carnino, Pablo. 2014. "On the Reduction of Grounding to Essence." *Studia Philosophica Estonica* no. 7:56-71.
     Abstract: "In a recent article, Fabrice Correia explores the project of reducing the notion of grounding to that of essence. He then goes on to provide several candidate definitions and test each of them against a number of objections. His final take on the situation is, roughly, that two of the definitions can handle all of the considered objections.
     The aim of this paper is to re-evaluate Correia's conclusions in the light of two sources of insights: Firstly, I will argue that one of the objections treated by Correia has been somewhat underestimated, and that it still constitutes a threat against definitions of grounding in terms of essence. Secondly, there are at least two further objections that should be considered by the advocate of such definitions. As I will

show, one of them can be neutralized; but the other one is more serious and suggests a clear dialectical edge to an operationalist definition."
References
Correia, F. Metaphysical grounds and essence, in M. Hoeltje, B. Schnieder and A. Steinberg (eds), *Varieties of Dependence. Ontological Dependence, Grounding, Supervenience, Response-Dependence* , Basic Philosophical Concepts Series, Philosophia, München, pp. 271-296.

56.   ———. 2017. "Grounding Is Not Superinternal." *Thought: A Journal of Philosophy* no. 6:24-32.
Abstract: "Whenever a fact P grounds another fact Q, one may ask why that is so. Karen Bennett (2011) and Louis deRosset (2013) independently argue that grounding facts—such as the fact that P grounds Q—are always grounded in their grounds-part (what stands in P's position). Bennett calls this the view that grounding is superinternal. My aim in this paper is to argue that grounding is not superinternal. I will do so by showing that superinternality, together with some widely accepted formal features of grounding—namely, transitivity and necessitation—yield implausible claims about how necessities are explained. Then, I will discuss how my argument compares with Dasgupta's (2014) argument against superinternality."
References
Bennett, K. "By Our Bootstraps." *Philosophical Perspectives* 25.1 (2011): 27–41.
Dasgupta, S. "The Possibility of Physicalism." *Journal of Philosophy* 111.9/10 (2014): 557–592.
deRosset, L. "Grounding Explanations." *Philosophers' Imprint* 13.7 (2013): 1–26.

57.   Carrara, Massimiliano, and Martino, Enrico. 2015. "Grounding Megethology on Plural Reference." *Studia Logica* no. 103:697-711.
Abstract: "In *Mathematics is megethology* (Lewis, *Philos Math* 1:3–23, 1993) Lewis reconstructs set theory combining mereology with plural quantification. He introduces megethology, a powerful framework in which one can formulate strong assumptions about the size of the universe of individuals. Within this framework, Lewis develops a structuralist class theory, in which the role of classes is played by individuals. Thus, if mereology and plural quantification are ontologically innocent, as Lewis maintains, he achieves an ontological reduction of classes to individuals. Lewis'work is very attractive. However, the alleged innocence of mereology and plural quantification is highly controversial and has been criticized by several authors. In the present paper we propose a new approach to megethology based on the theory of plural reference developed in To be is to be the object of a possible act of choice (Carrara, *Stud Log* 96: 289–313, 2010). Our approach shows how megethology can be grounded on plural reference without the help of mereology."
References
Carrara, M., and E. Martino, To be is to be the object of a possible act of choice, *Studia Logica* 96:289–313, 2010.
Lewis, D., Mathematics is megethology, *Philosophia Mathematica* 1:3–23, 1993. [Reprinted as Chapter 17 in D. Lewis, *Papers in Philosophical Logic* , Cambridge: Cambridge University Press 1998, pp. 203-229.]

58.   Chilovi, Samuele. 2020. "Grounding-based Formulations of Legal Positivism." *Philosophical Studies* no. 177:3283-3302.
Abstract: "The goal of this paper is to provide an accurate grounding-based formulation of positivism in the philosophy of law. I start off by discussing some simple formulations, based on the ideas that social facts are always either full or partial grounds of legal facts. I then raise a number of objections against these definitions: the full grounding proposal rules out possibilities that are compatible with positivism; the partial grounding proposal fails, on its own, to vindicate the distinctive role that is played by social facts within positivist accounts of law. Then, I present a more adequate and insightful formulation capable of solving their problems, which crucially relies on a robust notion of a social enabler. Finally, I

model inclusive and exclusive positivism on the resulting template, and set out the advantages of the ground-enablers proposal."

59.   ———. 2021. "Grounding Entails Supervenience." *Synthese* no. 198:1317-1334.
Abstract: "Do grounding claims entail corresponding supervenience claims? The question matters, as a positive answer would help grounding theorists address worries that their hyperintensional primitive is obscure, and also increase the argumentative strategies that are available within ground-theoretic frameworks for metaphysical inquiry. Stephan Leuenberger („From Grounding to Supervenience?", 2014a) argues for a negative response, by specifying some candidate principles of entailment and then claiming that each of them is subject to counterexamples. In this paper, I critically assess those principles and the objections he raises against them, and advocate a novel entailment principle that overcomes all the problems suffered by those other principles. The principle I defend places a supervenience-based constraint on grounding claims, and secures a substantive connection between grounding and modality, weaker than necessitation."
References
Leuenberger, S. (2014a) „From Grounding to Supervenience?", *Erkenntnis* 79: 227-240.

60.   Chilovi, Samuele, and Pavlakos, George. 2019. "Law-Determination as Grounding: A Common Grounding Framework for Jurisprudence." *Legal Ethics* no. 25:53-76.
Abstract: "Law being a derivative feature of reality, it exists in virtue of more fundamental things, upon which it depends. This raises the question of what is the relation of dependence that holds between law and its more basic determinants. The primary aim of this paper is to argue that grounding is that relation. We first make a positive case for this claim, and then we defend it from the potential objection that the relevant relation is rather rational determination.(1) Against this challenge, we argue that the apparent objection is really no objection, for on its best understanding, rational determination turns out to actually be grounding. Finally, we clarify the framework for theories on law-determination that results from embracing our view; by way of illustration, we offer a ground-theoretic interpretation of Hartian positivism, and show how it can defuse an influential challenge to simple positivist accounts of law."
(1) Greenberg, M. (2004) 'How Facts Make Law', *Legal Theory* 10:157-198.

61.   ———. 2021. "The Explanatory Demands of Grounding in Law." *Pacific Philosophical Quarterly* .
First online 8 November 2021.
Abstract: "A new strategy in philosophy of law appeals to explanatory gap arguments to attack legal positivism. We argue that the strategy faces a dilemma, which derives from two available readings of the constraint it places on legal grounding. To this end, we elaborate the most promising ways of spelling out the epistemic constraints governing law-determination and show that each of the arguments based on them has problems. Throughout the paper, we evaluate a number of explanatory requirements, ultimately with a view to shedding light on the explanatory nature of both grounding in general and legal grounding in particular."

62.   Christensen, Ryan. 2014. "Essence, Essence and Essence." *Studia Philosophica Estonica* no. 7:72-87.
Abstract: "I argue that three different notions of essence—temporal, definitional, and modal— are all distinct notions, and are all philosophically useful. After defining the different notions, I discuss the philosophical problems each addresses."

63.   Claas, Jan. 2021. "The Grounds and the Components of Concepts." *Erkenntnis* :1-21.
"In this paper I investigate the idea that in conceptual analysis we are in a substantialway concerned with revealing metaphysical grounds. I argue that a recent

proposal fails, according to which we aim to reveal what complex concepts are grounded in.
The notion of *composition* , rather than that of *grounding* , is the best way to understand the intuitive hierarchy of concepts. In an analysis we reveal the *components* or *parts* of complex concepts and their structure. Finally, I propose an alternative role for grounding in our accounts of analysis: in analyses we reveal truths about the composition of concepts that serve as grounds for truths about their *functions* , which are what we want to understand."

64. Clark, Michael J. 2018. "What Grounds What Grounds What." *The Philosophical Quarterly* no. 68:38-59.
Abstract: "If there are facts about what grounds what, are there any grounding relations between them? This paper suggests so, arguing that transitivity and amalgamation principles in the logic of grounding yield facts of grounding that are grounded by others. I develop and defend this view and note that combining it with extant accounts of iterated grounding commits us to seemingly problematic instances of ground-theoretic overdetermination. Taking the superinternality thesis as a case study, I discuss how defenders of this thesis should respond. It emerges that our discussion puts pressure on superinternalists to make an interesting qualification to their view: to only regard as a fundamental metaphysical law a version of the superinternality thesis that is restricted to minimal and immediate grounding."

65. Clark, Michael J., and Liggins, David. 2012. "Recent Work on Grounding." *Analysis* no. 72:812-823.
"'In virtue of' is a mainstay of philosophical discourse. So are similar expressions, such as 'depends on', 'is prior to', and 'is determined by'. It is reasonable to suppose that these expressions are all used to express claims of non-causal dependence, or – as is becoming the standard term – 'grounding'.
Whilst causation has been studied extensively, it is only in recent years that grounding has become established as a major concern of metaphysics. In this article, we will take stock by bringing together some of the main themes to have emerged in the recent debate. We begin by introducing the notion of grounding (Section 1). Then we discuss scepticism about grounding (Section 2) before setting out some of the main questions about grounding under current investigation (Section 3). The final section introduces further avenues for future research." (p. 812)

66. Clark, Michael J., and Wildman, Nathan. 2018. "Grounding, Mental Causation, and Overdetermination." *Synthese* no. 195:3723-3733.
Abstract: "Recently, Kroedel and Schulz have argued that the exclusion problem—which states that certain forms of non-reductive physicalism about the mental are committed to systematic and objectionable causal overdetermination—can be solved by appealing to grounding. Specifically, they defend a principle that links the causal relations of grounded mental events to those of grounding physical events, arguing that this renders mental–physical causal overdetermination unproblematic. Here, we contest Kroedel and Schulz's result. We argue that their causal-grounding principle is undermotivated, if not outright false. In particular, we contend that the principle has plausible counterexamples, resulting from the fact that some mental states are not fully grounded by goings on 'in our heads' but also require external factors to be included in their full grounds. We draw the sceptical conclusion that it remains unclear whether non-reductive physicalists can plausibly respond to the exclusion argument by appealing to considerations of grounding."
References
Kroedel, T., & Schulz, M. (2016). Grounding mental causation. *Synthese* , 193, 1909–1923.

67. Colomina-Almiñana, Juan J. 2018. *Formal Approach to the Metaphysics of Perspectives: Points of View as Access* . Cham (Switzerland): Springer.

"To summarize then, this book deals with the place that perspectives must occupy in the world. Besides that I will attend to some of these cases later, this book is not particularly interested in establishing whether some of these perspectives are better understood as mere ways of speech. Think, for instance, of uncontroversial cases regarding whether you are late for an appointment or not, or what actually is nearby, or some political and partisan opinions about events, or which scientific paradigm better accounts for gravity, or whether Secretariat (a horse) is an "athlete." These are, with no doubt, very interesting disputes. However, the core of this book must analyze in depth substantial ontological arguments regarding the existence of what I call metaphysical points of view." (p. VIII)

68.   Correia, Fabrice. 2000. "Propositional Logic of Essence." *Journal of Philosophical Logic* no. 29:295-311.

"Introdcution: The present paper can be considered as a companion to Kit Fine's papers 'The Logic of Essence' and 'Semantics for the Logic of Essence'.(1) In the first paper Fine presents a logical system for quantified essentialist statements, E5. (2) In the second he presents a semantics for a variant of the system, and proves this system adequate (i.e. sound and complete) with espect to that semantics. I propose here a Kripke-style semantics for E5π, a propositional counterpart of E5, and prove the adequacy of the latter with respect to the former.

There are many, more or less natural, more or less interesting, ways to extend E5 (or one of its cousins) to a system of quantified logic of essence. E5π, together with its semantics, is intended to constitute the core of subsequent, more expressive, logics of essence. So, the study of E5π per se, regardless of possible quantificational extensions, is of great interest.

Another interesting point about the present study lies in the fact that the completeness proof given here is much simpler than the one Fine gives for his quantificational system.

The reader is strongly urged to take a look at Fine's papers on the logic of essence, if only because no detailed comparison between Fine's material and mine will be offred." (p. 295)

69.   ———. 2005. *Existential Dependence and Cognate Notions* . Munich: Philosophia Verlag.

"The use of notions of existential dependence pervades the whole history of philosophy, and as the above remarks suggest there are good reasons to consider them as notions of central philosophical importance. Yet they have never been a topic of philosophical research of their own—at least in the contemporary period— a few exceptions aside. The first notable exception is Husserl with his third *Logical Investigation* on modal mereology. Yet even if in this work Husserl not only uses, but also spends time to define some notions of existential dependence, the result is quite imprecise, and how exactly Husserl's views should be understood is still a matter of controversy.

The remaining exceptions are three. There is first and foremost the work of the Manchester triad which, at least at the beginning, to a certain extent tries to dig up the Husserlian investigations. Kevin Mulligan, Peter Simons and Barry Smith are responsible for "introducing" existential dependence to the analytic world, and two approaches to dependence pervade an important amount of their work, namely the

modal-existential approach and the essentialist-existential approach. The second exception is E. J. Lowe and his purely essentialist approach, and finally the third is Kit Fine, to whom I shall also attribute the essentialist-existential approach." (p. 12) (...)

"My plan is the following. In the Preamble, I introduce notions and principles that will be useful in the rest of this work. After a short break, chapter 2 introduces the simplest notion of existential dependence, presents some existing accounts of this notion and some objections to these accounts. In chapter 3 the crucial notion of grounding is introduced. In chapter 4, I then propose my own account of simple existential dependence, and show how it escapes the difficulties faced by its rivals. Chapter 5 deals with other forms of existential dependence—like generic dependence, disjunctive dependence and temporalized forms of existential dependence—and finally chapter 6 is about supervenience." (p. 15)

70.   ———. 2006. "Generic Essence, Objectual Essence, and Modality." *Noûs* no. 40:753-767.

Abstract: "When thinking about the notion of essence or of an essential feature, philosophers typically focus on what I will call the notion of objectual essence. The main aim of this paper is to argue that beside this familiar notion stands another one, the notion of generic essence, which contrary to appearance cannot be understood in terms of the familiar notion, and which also fails to be correctly characterized by certain other accounts which naturally come to mind as well. Some of my objections to these accounts are similar to some of Kit Fine's compelling objections to the standard modal account of (objectual) essence (Fine 1994). In the light of these objections, Fine advances the view that it is metaphysical necessity which has to be understood in terms of essence, rather than the other way around, and takes essence to be unanalyzable.

When formulating his view, Fine had only objectual essence in mind (or had both concepts in mind, but assumed that the generic is a special case of the objectual), and for that reason, I will argue, his account fails. I will suggest that Fineans should modify their view, and take it that metaphysical necessity is to be understood in terms of the two notions of essence—a view I myself find appealing. Finally, I will end by suggesting a further move which reduces the objectual to the generic, making metaphysical necessity reducible to generic essence alone—a move with which I myself have some sympathy."

References

Fine, K. (1994) "Essence and Modality," *Philosophical Perspectives* , 8: 1–16.

71.   ———. 2010. "Grounding and Truth-Functions." *Logique et Analyse* no. 53:251-279.

"The plan of the paper is the following. I first discuss the question of the logical form of statements of grounding (§1). There I distinguish between the predicational view on the logical form of these statements, and the operational view, which I endorse. I then introduce the notions of factual identity and factual equivalence, and argue that the formulation of a logic of grounding must go in tandem with the formulation of a logic of factual identity in case one opts for predicationalism, and of a logic of factual equivalence if one opts for operationalism (§2). In §3, I define the language relative to which I subsequently formulate the logic of grounding and factual equivalence.

In §4 I lay down structural principles for grounding and factual equivalence.

In §5, I then propose principles for the logic of factual equivalence and truth-functions, and in §6, I do the same for the logic of grounding and truth-functions. Finally, I present a semantical characterization of the resulting logical system and prove the system to be sound and complete with respect to the semantics (§7)" (pp. 252-263)

72.   ———. 2011. "From Grounding to Truth-Making: Some Thoughts." In *Mind, Values, and Metaphysics. Philosophical Essays in Honor of Kevin Mulligan. Vol. 1* , edited by Reboul, Anne, 85-98. Dordrecht: Springer.

Abstract: "The number of writings on truth-making which have been published since Kevin Mulligan, Peter Simons and Barry Smith's seminal, rich and deep article 'Truth-Makers' in 1984 is considerable. Some deal with the theory of the notion, some with its applications and some with both. This chapter adds up to the pile of writings which focus on the theory. I focus on one account of truth-making I find plausible, the view that for a truth-bearer to be made true by an entity is for it to be the case that the truth-bearer is true because the entity exists, where 'because' is understood as expressing a form of objective, metaphysical explanation which is now often subsumed under the label 'grounding'. Taking this account for granted, we may distinguish, amongst the general principles governing truth-making, those which derive from more basic principles governing the notions in terms of which it is defined, from those which do not. Which principles compose the first class, which are the more basic principles from which they derive and how do the former derive from the latter? I try to make some steps towards an answer to this difficult question."
References
Mulligan K., Simons P., Smith B. (1984), Truth-makers. *Philosophy and Phenomenological Research* 44(3): 287–321.

73.   ———. 2013. "Logical Grounds." *Review of Symbolic Logic* no. 7:31-59.
"As I see it, the main interest of this study is threefold. First, the study provides a precise account of a pretheoretic notion of logical explanation which, I take it, is of great intrinsic interest. Second, it shows that the concept of logical grounding can be used to provide a new angle of approach in logic, which is illuminating and possesses a certain power of unification. And third, it shows that the concept of logical grounding is not irremediably obscure or fruitless, thereby providing (i) a direct response to some forms of scepticism about this concept and (ii) an element of response to certain forms of scepticism about more general concepts of grounding (in particular, that of metaphysical grounding)." (p. 33, notes omitted)

74.   ———. 2013. "Metaphysical Grounds and Essence." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 271-296. Munich: Philosophia Verlag.
"Is it possible to provide an account of metaphysical grounding in terms of essence? E. J. Lowe (2009) addresses a similar question about truth-making and essence, and makes a suggestion which points towards a positive answer. Kit Fine (2012) addresses the original question and answers negatively. I argue that the prospects for an account of metaphysical grounding in terms of essence are not as bad as one might have thought." (p. 271)
References
Correia, E and B. Schnieder (eds.) 2012: *Metaphysical Grounding: Understandiing the Structure ol Reali!y·* . Cambridge: Cambridge University Press.
Fine, K. 2012: 'Guide to Ground'. In Correia and Schnieder 2012, pp. 37-80.
Lowe, E. J. 2009: 'An Essentialist Approach to Truth-Making'. In Lowe and Rami 2009, pp. 201-16.
Lowe, E. J. and A. Rami (eds.) 2009: *Truth and Truth-Making,* Stocksfield: Acumen.

75.   ———. 2017. "Real Definitions." *Philosophical Issues* no. 27:52-73.
Abstract: "I offer and defend an account of real definitions. I put forward two versions of the account, one formulated in terms of the notion of generalised identity and of a suitable notion of grounding (RD1), and the other one formulated in terms of the former notion and of a suitable notion of comparative joint carvingness (RD2). Given a plausible assumption, (RD1) and (RD2) turn out to be equivalent. I give a sketch of a unified account of the three notions involved in (RD1) and (RD2) from which the assumption can be derived."

76.   ———. 2017. "An Impure Logic of Representational Grounding." *Journal of Philosophical Logic* no. 46:507-538.

Abstract: "I give a semantic characterization of a system for the logic of grounding similar to the system introduced by Kit Fine in his "Guide to Ground", as well as a semantic characterization of a variant of that system which excludes the possibility of what Fine calls 'zero-grounding'."

77.   ———. 2020. "Granularity." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 228-243. New York: Routledge. "Grounding is a hyperintensional notion: necessarily equivalent sentences need not be equivalent from a ground-theoretic perspective. How fine-grained, exactly, is grounding? There is a striking lack of consensus on this question. In this chapter, I try to systematize and review the main options that have been put forward in the literature. For reasons that have to do with both naturalness and convenience, I for the most part take the question to be about what is sometimes called, following Kit Fine's (2012a) terminology, strict full grounding, and I take for granted a conception of grounding as a relation that is many-to-one and non-factive. I discuss the consequences of making alternative assumptions only in the very last section." (p. 228, notes omitted)
References
Fine, K, (2012a). Guide to Ground. In F. Correia & B. Schnieder (eds.), *Metaphysical Grounding: Understanding the Structure of Reality* , Cambridge: Cambridge University Press, 37–80.

78.   ———. 2021. "A New Argument for the Groundedness of Grounding Facts." *Erkenntnis* :1-16.
First online 8 June 2021.
Abstract: "Many philosophers have recently been impressed by an argument to the effect that all grounding facts about "derivative entities"—e.g. the facts expressed by the (let us suppose) true sentences 'the fact that Beijing is a concrete entity is grounded in the fact that its parts are concrete' and 'the fact that there are cities is grounded in the fact that p', where 'p' is a suitable sentence couched in the language of particle physics—must themselves be grounded. This argument relies on a principle, Purity, which states that facts about derivative entities are non-fundamental. Purity is questionable.
In this paper, I introduce a new argument—the argument from Settledness—for a similar conclusion but which does not rely on Purity. The conclusion of the new argument is that every "thick" grounding fact is grounded, where a grounding fact [F is grounded in G, H, …] is said to be thick when at least one of F, G, H, … is a fact—a condition that is automatically satisfied if grounding is factive. After introducing the argument, I compare it with the argument from Purity, and I assess its cogency relative to the relevant accounts of the connections between grounding and fundamentality that are available in the literature."

79.   ———. 2021. "Ontological dependence, Grounding and Modality." In *The Routledge Handbook of Modality* , edited by Bueno, Otávio and Shalkowski, Scott A. , 100-113. New York: Routledge.
"Ontological dependence and grounding are two important items in the metaphysician's toolbox: both notions can be used to formulate important philosophical claims and to define other notions that play a central role in philosophical theorising. Philosophical inquiry about ontological dependence and (especially) grounding has been very lively over the past few years, making it difficult to write a short review article on any of them, let alone a short review article on both.
I try to reach a good compromise between a discussion of each notion taken separately and a discussion of how they relate to one another." (p. 100)

80.   Correia, Fabrice, and Schnieder, Benjamin, eds. 2012. *Metaphysical Grounding: Understanding the Structure of Reality* . Cambridge: Cambridge University Press.
Contents: List of contributors VII; Fabrice Correia, Benjamin Schnieder: Grounding: an opinionated introduction 1; 1. Kit Fine: Guide to ground 37; 2. Chris Daly: Scepticism about grounding 81; 3. Paul Audi: A clarification and defense of

the notion of grounding 101; 4. Jonathan Schaffer: Grounding, transitivity, and contrastivity 122; 5. Michael Della Rocca: Violations of the Principle of Sufficient Reason (in Leibniz and Spinoza) 139; 6. J. Robert G. Williams: Requirements on reality 165; 7. Kathrin Koslicki: Varieties of ontological dependence 186; 8. E. J. Lowe: Asymmetrical dependence in individuation 214; 9. Jody Azzouni: Simple metaphysics and "ontological dependence" 234; 10. David Liggins: Truth-makers and dependence 254; 11. Stephen Barker: Expressivism about making and truth-making 272; Bibliography 294; Name index 306; Subject index 309-311.

81.   ———. 2012. "Grounding: An Opinionated Introduction." In *Metaphysical Grounding: Understanding the Structure of Reality* , edited by Correia, Fabrice and Schnieder, Benjamin, 1-36. Cambridge: Cambridge University Press.
"Some of the most important questions in philosophy, we believe, concern matters of priority.
(...)
What concerns us here is not so much whether these specific claims are true, but rather something they have in common topic-wise: it seems to us that they all target a particular sort of non-causal priority which we would like to call *grounding* and which we regard as a phenomenon of the highest philosophical importance.
This volume collects papers in which this phenomenon is addressed from various (both sympathetic and critical) sides. Summaries of those papers are provided in Section 6 of this introduction. But first, we want to walk you through an opinionated survey of pertinent issues, preparing the field and putting the papers into perspective.
While the recent debate about grounding is not older than a decade, the topic has been dealt with before. So, we start by briefly walking through some important stages of the history of grounding. We then devote two sections on systematic issues, one on the theory of grounding proper, and one on its connections with other notions.(1)" (pp. 1-2)
(1) For further reading we recommend a survey article by Trogdon (forthcoming). While his paper naturally has some overlap with ours, he often has a different focus so that the two papers complement each other.
References
Trogdon, K. forthcoming. 'Grounding – An Overview', in Hoeltje, Schnieder, and Steinberg, *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , Munich: Philosophia Verlag 2013, pp. 97-122.

82.   Correia, Fabrice, and Skiles, Alexander. 2019. "Grounding, Essence, and Identity." *Philosophy and Phenomenological Research* no. 98:642-670.
Abstract: "Recent metaphysics has turned its focus to two notions that are—as well as having a common Aristotelian pedigree—widely thought to be intimately related: grounding and essence. Yet how, exactly, the two are related remains opaque. We develop a unified and uniform account of grounding and essence, one which understands them both in terms of a generalized notion of identity examined in recent work by Fabrice Correia, Cian Dorr, Agustín Rayo, and others. We argue that the account comports with antecedently plausible principles governing grounding, essence, and identity taken individually, and illuminates how the three interact. We also argue that the account compares favorably to an alternative unification of grounding and essence recently proposed by Kit Fine."

83.   Cusbert, John, and Millier, Kristie. 2018. "The Unique Groundability of Temporal Facts." *Philosophy and Phenomenological Research* no. 94:410-432.
Abstract: "The A-theory and the B-theory advance competing claims about how time is grounded. The A-theory says that A-facts are more fundamental in grounding time than are B-facts, and the B-theory says the reverse.
We argue that whichever theory is true of the actual world is also true of all possible worlds containing time. We do this by arguing that time is uniquely groundable: however time is actually grounded, it is necessarily grounded in that way. It follows

that if either the A-theory or the B-theory is actually false, then it is necessarily false."

84.   Daly, Chris. 2012. "Scepticism about Grounding." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 81-100. Cambridge: Cambridge University Press.
"A minimal claim that any theory of grounding will make is that talk of grounding is intelligible. Yet it is controversial whether such talk is intelligible.
Two (mutually exclusive) strategies to support that minimal claim are available.
One is to define 'grounding' using terms that are already well understood.
The other is to take 'grounding' as a primitive term but to use various ways to convey its meaning. This chapter will offer sceptical responses to both strategies whilst paying special attention to the second. The chief contention of the chapter is that, if treated as a primitive, 'grounding' is unintelligible.
Grounding theorists are alive to this sceptical response and have tried to counter it. The chapter will seek to show that their attempts to date fail."

85.   Dasgupta, Shamik. 2014. "On the Plurality of Grounds." *Philosophers' Imprint* no. 13:1-28.
Recent metaphysics has contained a good deal of discussion about the notion of *ground* .
(...)
"In this spirit, one aim of this paper is to argue that ground is *irreducibly plural*. It is well known that something's ground can be a plurality — the occurrence of a conference is an example of something that is presumably grounded in a multitude of facts concerning the actions of its many participants. *Those* facts together are what explains why there is a conference occurring, even though none of them is a sufficient explanation individually. But the literature uniformly assumes that what is grounded must be a single fact. Here I disagree and argue that what is grounded can be a plurality too: there can be cases in which *they* , the members of a plurality, *are* explained in more fundamental terms, even though none of them admits of explanationon its own." (pp. 1-2)

86.   ———. 2014. "The Possibility of Physicalism." *The Journal of Philosophy* no. 111:557-592.
"It has been suggested that many philosophical theses—physicalism, nominalism, normative naturalism, and so on—should be understood in terms of ground.(1) Against this, Ted Sider has argued that round is ill-suited for this purpose.(2) Here I develop Sider's objection and offer a response. In doing so I develop a view about the content of these philosophical theses, and hence about how to understand disagreements over them." (p. 557)
(1) For some recent examples, see Kit Fine, "The Question of Realism," *Philosophers' Imprint* , 1 (2001): 1–30; Gideon Rosen, "Metaphysical Dependence: Grounding and Reduction," in B. Hale and A. Hoffmann, eds., *Modality: Metaphysics, Logic, and Epistemology* (Oxford: Oxford University Press, 2010), pp. 109–36; and Jonathan Schaffer, "On What Grounds What," in D. Chalmers, D. Manley, and R. Wasserman, eds., *Metametaphysics: New Essays on the Foundations of Ontology* (Oxford: Clarendon Press, 2009), pp. 347–83. The suggestion is not new; indeed these authors take themselves to be reinvigorating a traditional conception of these issues that stems back at least to the ancient Greeks.
2 See Theodore Sider, *Writing the Book of the World* (Oxford: Oxford University Press, 2011).

87.   ———. 2016. "Metaphysical Rationalism." *Noûs* no. 50:379-418.
Abstract: "The Principle of Sufficient Reason states that everything has an explanation. But different notions of explanation yield different versions of this principle. Here a version is formulated in terms of the notion of a "grounding" explanation.
Its consequences are then explored, with particular emphasis on the fact that it implies necessitarianism, the view that every truth is necessarily true. Finally, the

principle is defended from a number of objections, including objections to necessitarianism. The result is a defense of a "rationalist" metaphysics, one that constitutes an alternative to the contemporary dogmas that some aspects of the world are "metaphysically brute" and that the world could in so many ways have been different."

88.   ———. 2017. "Constitutive Explanation." *Philosophical Issues* no. 27:74-97.
"I will argue that ground can be significantly deflated: one can hold that it corresponds to no part of reality, that it is not primitive in any metaphysically significant sense, even that it is a person- or culture-relative notion with noncognitive elements, and yet still find it philosophically important. I will not argue that the best conception of ground is maximally deflationary in all these respects. But it is worth asking what the limit case looks like, if only to clarify whether certain objections to ground target the core notion or just inflated varieties. (1)" (pp. 74-75)
(1) To be clear, the conception of ground I initially latched onto was not deflationary in all these respects. It is only recently that I've come to see that it can be deflated more than I had previously thought.

89.   De Florio, Ciro. 2018. "On Grounding Arithmetic." In *From Arithmetic to Metaphysics: A Path Through Philosophical Logic* , edited by Giordani, Alessandro and Florio, Ciro de, 103-118. Berlin: De Gruyter.
Abstract: "Philosophy of mathematics of last fifty years has been dominated by the metaontological stance according to which one fundamental problem of the ontology of mathematical theories is the existence of mathematical objects and the related epistemic access to them. But during the last ten years another fecund and promising metaphysical framework has been developed: the key idea (which goes back to Aristotle) is that the main problem of metaphysics is about the relation of grounding among various levels of reality. Although this approach should be relevant for almost all the metaphysical questions, however,
there are few attempts to extend these intuitions to the debate in philosophy of mathematics. The aim of this, preliminary, work is analysing some possible outcomes of the grounding approach in metaphysics of mathematics."

90.   De Rizzo, Julio. 2019. *Reasons Why Not: On the Positive Grounds of Negative Truths* . Berlin: J. B. Metzler.
"A suggestive way of turning this slogan [*Reality is ultimately positive*] into a precise thesis makes use of the fashionable ideology of *grounding* : roughly put, the idea of a non-causal connection between truths expressible by claims to the effect that some truths obtain *because* other truths obtain. (More on this in due course.) When this is the case, the latter truths are typically said to be more *fundamenta* l than the former.
In this manner, grounding is taken to shed light on theses which have a bearing on how truths of a certain class are structured relatively to another class or other classes of truths. Thus the thesis of physicalism, for example, might be understood as the thesis that physical truths ground truths about consciousness, i.e. that the latter truths obtain *because* physical truths obtain. By way of analogy, one can expect that the bias against negativity announced in the slogan be captured by the claim that negative truths obtain because positive truths do, i.e. that positive truths *ground* negative ones. Henceforth, I will label this the *positivist thesis* , and the position thereby characterized *positivism* .
The main aim of the present study is to examine the positivist thesis and the position it characterizes in detail. The task is twofold. Firstly, to clarify what the thesis amounts to; and secondly, to explore its credentials relative to some specific domains of negative truths." (pp. 2-3)

91.   ———. 2020. "The Ground of All Negative Existential Truths." *Critica* no. 52:129-148.
Summary: "A natural proposal for the grounds of negative existential truths, such as that Vulcan does not exist, states that these truths are grounded in the totality truth

affirming the existence of every existent thing together with the truth that they are all. In this paper I will put forward three objections to straightforward formulations of this idea, and argue that a change in the usual grammar of grounding claims, allowing for pluralities of sentences to express not only grounds, but also groundees, is effective in making the account immune to the objections raised."

92.   ———. 2021. "Grounding Grounds Necessity." *Analysis* no. 80:639-647.
Abstract: "Drawing from extensions of existing ideas in the logic of ground, a novel account of the grounds of necessity is presented, the core of which states that necessary truths are necessary because they stand in specific grounding connections."

93.   ———. 2021. "A Ground-theoretical Modal Definition of Essence." *Analysis* . First Online 20 September 2021.
Abstract: "I provide a case-by-case definition of essential truths based on the notions of metaphysical necessity and ontological dependence. Relying on suggestions in the literature, I adopt a definition of the latter notion in terms of the notion of ground. The resulting account is adequate in the sense that it is not subject to Kit Fine's famous counterexamples to the purely modal account of essence. In addition, it provides us with a novel conception of truths pertaining to the essence of objects, which might help to dispel doubts on the legitimacy of the notion of essence itself."

94.   Declos, Alexandre. 2021. "More Grounds for Grounding Nominalism." *Philosophia* no. 49:49-70.
Abstract: "In this paper, I examine Peter Schulte's "Grounding Nominalism" (Schulte, 2018), understood as the claim that first-order properties and relations are grounded in the concrete particulars which instantiate them. While Schulte offered reasons to think that this view is consistent, along with answers to a number of objections, a more straightforward argument for GN is still needed. I take on this task here, by discussing and defending what I call the "argument from abstraction". The latter, I suggest, offers more grounds to Grounding Nominalism."
References
Schulte, P. (2018). Grounding nominalism. *Pacific Philosophical Quarterly* , 100(2), 482–505

95.   Della Rocca, Michael. 2012. "Violations of the Principle of Sufficient Reason (in Leibniz and Spinoza)." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 139-164. Cambridge: Cambridge University Press.
My central concern here – violations of the Principle of Sufficient Reason (hereafter: 'PSR') – does indeed stem from my engagement with two figures from the history of philosophy: Leibniz and Spinoza. Both of these philosophers are big fans of the Principle of Sufficient Reason, the principle according to which each thing that exists has an explanation.(1) Indeed, a strong case can be made that each of these thinkers structures his entire system around the PSR more or less successfully.(2) However, despite these similarities, the character of each philosopher's commitment to the PSR differs, and the differences have illuminating implications for our understanding of the power of these rationalist systems and for the metaphysical issues these philosophers take up that concern us today. One way to distill these differences is by exploring the perhaps surprising ways violations of the PSR arise for Leibniz and Spinoza. It will turn out that Leibniz is, or would be, unable to handle such violations, while Spinoza can handle them more or less in stride in his more resilient and, in some ways, more exotic, rationalist system." (pp. 139-140)
(1) Spinoza: see *Ethics* 1p11d2. Leibniz: see *Monadology* §32.
(2) Spinoza more, Leibniz less!.

96.   ———. 2014. "Razing Structures to the Ground." *Analytic Philosophy* no. 55:276-294.

"However, despite this bulwark of support for grounding, I want here at least to begin a new challenge to this now popular notion. I think that there are reasons to doubt that there are any instances of grounding, and I think that these reasons are broadly in keeping with the spirit of Quine's best argument against modality: what I call the argument from arbitrariness. Once we see the force of this argument against grounding, we will be in a position, I believe, to advance a powerful argument for something like existence monism, a monism more extreme than the priority monism that Schaffer defends." (p. 278)

97. deRosset, Louis. 2010. "Getting Priority Straight." *Philosophical Studies* no. 149:73-97.
"Here is the plan. I will start by trying to get a little clearer on what the priority theorist claims (Sect. 1). Then I will articulate a constraint on the kind of explanation central to the priority theorist's view (Sect. 2). I will show how that constraint makes trouble for the priority theorist (Sect. 3). I will review two avenues of response available to priority theorists, and provide reasons for thinking that neither are satisfactory (Sect. 4). Next I will articulate a more cautious variant of priority theory that avoids the trouble, and show that it nevertheless faces similar problems (Sect. 5). I will conclude with a brief discussion of the prospects for retaining the spirit of priority theory while abandoning its letter (Sect. 6)."

98. ———. 2011. "What is the Grounding Problem?" *Philosophical Studies* no. 156:173-197.
Abstract: "A philosophical standard in the debates concerning material constitution is the case of a statue and a lump of clay, Lumpl and Goliath respectively. According to the story, Lumpl and Goliath are coincident throughout their respective careers. Monists hold that they are identical; pluralists that they are distinct. This paper is concerned with a particular objection to pluralism, the Grounding Problem. The objection is roughly that the pluralist faces a legitimate explanatory demand to explain various differences she alleges between Lumpl and Goliath, but that the pluralist's theory lacks the resources to give any such explanation.
In this paper, I explore the question of whether there really is any problem of this sort. I argue (i) that explanatory demands that are clearly legitimate are easy for the pluralist to meet; (ii) that even in cases of explanatory demands whose legitimacy is questionable the pluralist has some overlooked resources; and (iii) there is some reason for optimism about the pluralist's prospects for meeting every legitimate explanatory demand. In short, no clearly adequate statement of a Grounding Problem is extant, and there is some reason to believe that the pluralist can overcome any Grounding Problem that we haven't thought of yet."

99. ———. 2013. "Grounding Explanations." *Philosophers' Imprint* no. 13:1-26.
"Unfortunately the use of grounding to articulate the layered conception faces a problem, recently pressed by Ted Sider [Sider, 2011, §7.2, 8.2.1]. I will call this problem *the collapse* . The problem, very roughly, is that if we take grounding explanations to state fundamental facts, then the facts about what explains, e.g., my preference for oatmeal will be fundamental. So, my preference for oatmeal will be mentioned in any complete description of the fundamental layer. The same goes for any other entity. All of the layers collapse into one; every entity turns out to occupy the fundamental layer. The collapse turns on the question of how to ground the facts stated by the explanations themselves.
I will suggest a way of grounding explanations that avoids the problem. Briefly, the suggestion is that the fact stated by a grounding explanation is grounded in its explanans.
Here's the plan. §1 lays out a simple-minded way of using grounding explanations to articulate the intuitive conception of layered structure.
I also differentiate this approach to articulating the idea of layered structure from a more traditional one centering on reduction. §2 shows how the commitments

articulated in §1 lead to the collapse, when paired with the claim that grounding explanations are fundamental.

In §3, I defend a claim that plays a central role in both my articulation of the idea of layered structure and the collapse. §4 proposes an alternative way of avoiding the collapse by denying that grounding explanations are fundamental. §5 outlines and criticizes a different proposal for avoiding the collapse implicit in some of the extant literature, and §6 discusses objections." (pp. 2-3, anote omitted)

References

Theodore Sider. *Writing the Book of the World* . Oxford University Press, 2011.

100.   ———. 2013. "What is Weak Ground?" *Essays in Philosophy* no. 14:7-18.

Abstract: "Kit Fine, in "The Pure Logic of Ground", has made a seminal attempt at formalizing the notion of ground. Fine ties the formal treatment of grounding to the notion of a weak ground. Formalization of this sort is supposed to bring clarity and precision to our theorizing. Unfortunately, as I will argue, it's not clear what weak ground is.

I review five alternative explanations of the idea, and argue that none of them are ultimately satisfactory. I close by outlining a more complicated explanation of the notion that turns out to be more satisfactory."

101.   ———. 2013. "No Free Lunch." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 243-270. Munich: Philosophia Verlag.

"Some philosophers (see Armstrong 1997; Cameron 2008; Melia 2005 and Schaffer 2007, 2009, 2010a) have recently suggested that explanations of a certain sort can mitigate our ontological commitments.

The explanations in question, *grounding explanations* , are those that tell us what it is in virtue of which an entity exists and has the features it does.

(...)

These philosophers argue that derivative entities are 'no addition to being', in the sense that an ontology is no less sparse for containing them than it is for containing the entities which ground them; derivative entities are an 'ontological free lunch'." (p. 243)

(...)

"Here I argue that they are wrong: barring reduction, everv entity is fundamental, in the sense that either its existence or its possession of at least one other feature is explanatorily basic. Thus, the claim

EXPLANATION

Many entities are derivative: their existence and other features can be explained solely by reference to the existence and properties of other things

should be rejected. An upshot is that, whatever form Ockham's Razor, should take, grounding explanations on their own do not provide' an ontological free lunch'." (p. 245, a note omitted)

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102.   ———. 2014. "On Weak Ground." *The Review of Symbolic Logic* no. 7:713-744.
Abstract: "Though the study of grounding is still in the early stages, Kit Fine, in "The Pure Logic of Ground", has made a seminal attempt at formalization. Formalization of this sort is supposed to bring clarity and precision to our theorizing, as it has to the study of other metaphysically important phenomena, like modality and vagueness. Unfortunately, as I will argue, Fine ties the formal treatment of grounding to the obscure notion of a *weak ground* . The obscurity of weak ground, together with its centrality in Fine's system, threatens to undermine the extent to which this formalization offers clarity and precision. In this paper, I show how to overcome this problem. I describe a system, the logic of strict ground (LSG) and demonstrate its adequacy; I specify a translation scheme for interpreting Fine's weak grounding claims; I show that the interpretation verifies all of the principles of Fine's system; and I show that derivability in Fine's system can be exactly characterized in terms of derivability in LSG. I conclude that Fine's system is reducible to LSG."

103.   ———. 2015. "Better Semantics for the Pure Logic of Ground." *Analytic Philosophy* no. 56:229-252.
"Kit Fine has offered an exact treatment of these formal features of grounding (Fine, 2012a). He specifies a language in which grounding claims may be expressed, proposes a system of axioms which capture the relevant formal features, offers a semantics which interprets grounding claims expressible in the language, and shows that his axioms are sound and complete for his semantics.
As we shall see, however, there are reasons for dissatisfaction with Fine's semantics.
(...)
In this paper I show that there is another approach available. I offer a formally specified, model-theoretic semantics for Fine's language, for which a certain natural axiomatization of the pure logic of ground is sound and complete. The semantics is motivated by ideas already present in the grounding literature, so it offers a plausible candidate for an exact specification of an intended interpretation of grounding claims. I also show how the semantics I offer avoids problems faced by Fine's semantics." (p. 229)

104.   ———. 2017. "Grounding the Unreal." *Philosophy and Phenomenological Research* no. 95:535-563.
Abstract: "(...) It is tempting to explain this layered structure of dependence and determination among our theories by appeal to a corresponding layered structure of dependence and determination among the entities putatively treated by those theories. In this paper, I argue that we can resist this temptation: we can explain the sense in which, e.g., the biological truths are dependent on and determined by chemical truths without appealing to properly biological or chemical entities. This opens the door to a view on which, though there are more truths than just the purely physical truths, there are no entities, states, or properties other than the purely physical entities, states, and properties. I argue that some familiar strategies to explicate the idea of a layered structure of theories by appeal to reduction, ground, and truthmaking encounter difficulties. I then show how these difficulties point the way to a more satisfactory treatment which appeals to something very close to the notion of ground. Finally, I show how this treatment provides a theoretical setting in which we might fruitfully frame debates about which entities there really are."

105.   ———. 2020. "Anti-Skeptical Rejoinders." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 180-193. New York: Routledge.
"The recent groundswell of interest in the theory of grounding has been met in some quarters with a skeptical reaction.There are two kinds of skepticism that should be

distinguished. Relatively local skeptical doubts concern the appropriateness of applying grounding to this or that particular theoretical purpose.
(...)
The kind of skepticism that is our focus here is more ambitious. Global skepticism about ground is the view that the attempt to develop a theory of ground is generally and in principle defective, and attempts to apply such a theory will be fruitless.There are several global skeptics in the literature (Daly 2012), (Hofweber 2009: 269–72), (Koslicki 2015), (Thompson 2016a), (Turner 2016), (Wilson 2014).Are their doubts warranted? In this chapter, I review both the reasons that seem to favor global skepticism and the responses to those reasons by defenders of ground. I suspect that the number of published global skeptics is a tiny fraction of the total population of global skeptics. So rather than merely offering a piecemeal enumeration of skeptical arguments and responses in the literature, I will attempt to fit them into a more general scheme."

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106.   Dixon, T. Scott. 2016. "Grounding and Supplementation." *Erkenntnis* no. 81:375-389.
Abstract: "Partial grounding is often thought to be formally analogous to proper parthood in certain ways. Both relations are typically understood to be asymmetric (and hence irreflexive) and transitive, and as such, are thought to be strict partial orders. But how far does this analogy extend? Proper parthood is often said to obey the weak supplementation principle. There is reason to wonder whether partial grounding, or, more precisely, proper partial grounding, obeys a ground-theoretic ersion of this principle. In what follows, I argue that it does not. The cases that cause problems for the supplementation principle for grounding also serve as counterexamples to another principle, minimality, defended by Paul Audi."

107.   ———. 2016. "What Is the Well-Foundedness of Grounding?" *Mind* no. 125:439-468.
Abstract: "A number of philosophers think that grounding is, in some sense, well-founded.
This thesis, however, is not always articulated precisely, nor is there a consensus in the literature as to how it should be characterized. In what follows, I consider several principles that one might have in mind when asserting that grounding is well-founded, and I argue that one of these principles, which I call 'full foundations', best captures the relevant claim. My argument is by the process of elimination. For each of the inadequate principles, I illustrate its inadequacy by showing either that it excludes cases that should not be ruled out by a well-foundedness axiom for grounding, or that it admits cases that should be ruled out."

108.   ———. 2018. "Upward Grounding." *Philosophy and Phenomenological Research* no. 97:48-78.
Abstract: "Realists about universals face a question about grounding. Are things how they are because they instantiate the universals they do? Or do they instantiate

those universals because they are how they are? Take Ebenezer Scrooge. You can say that (i) Scrooge is greedy because he instantiates greediness, or you can say that (ii) Scrooge instantiates greediness because he is greedy. I argue that there is reason to prefer the latter to the former. I develop two arguments for the view. I also respond to some concerns one might have about the view defended. I close by showing that analogous views regarding the truth of propositions (that if the proposition that p is true, then it is true because p) and the existence of facts (that if the fact that p exists, then it exists because p) are supported by analogs of one of these arguments."

109.   ———. 2020. "Infinite Descent." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 244-258. New York: Routledge.
"Introduction: Once one accepts that certain things metaphysically depend upon or are metaphysically explained by other things, it is natural to begin to wonder whether these chains of dependence or explanation must come to an end.This chapter surveys the work that has been done on this issue—the issue of grounding and infinite descent. I frame the discussion around two questions:
Question 1. What is infinite descent of ground?
Question 2. Is infinite descent of ground possible?
In addressing the second question, I will consider a number of arguments that have been made for and against the possibility of infinite descent of ground.When relevant, I connect the discussion to two important views about the way reality can be structured by grounding: metaphysical foundationalism and metaphysical infinitism. A third such view, metaphysical coherentism, countenances cyclic grounding chains. Due to limitations on space, I will not discuss this view in what follows, though I will have cause to discuss cyclic chains. For further discussion of coherentism, see "Strict Partial Order" (Chapter 17 in this volume)." (p. 244)

110.   Donaldson, Thomas. 2016. "The (Metaphysical) Foundations of Arithmetic?" *Noûs* no. 51:775-801.
"This paper is a thorough discussion of a proposal due independently to Robert Schwartzkopff and Gideon Rosen about what grounds facts involving cardinal numbers. Roughly, the principle is as follows:
For any properties F and G, if the number of things that have the property F is identical to the number of things that have the property G, then this fact is grounded by the fact that the things that have the property F and the things that have the property G can be paired one-to-one.(8)
For obvious reasons, I call this the 'Schwartzkopff-Rosen Principle'. The principle is a perfect case study: it is precise enough that it can be investigated in detail, but it is no mere toy case.
(...)
"I proceed as follows. I begin in section two by presenting a 'framework' for the subsequent discussion—that is, I set out my preferred notation and my initial assumptions. In section three I begin my discussion of the Schwartzkopff-Rosen Principle. In sections four, five, six and seven I refine the principle. In section eight I show that the principle implies that the relation of 'partial ground' is not acyclic. Section nine is my conclusion. In an appendix, I discuss ground and second-order quantification." (pp. 775-776)
(8) Rosen (2010: 123); Schwartzkopff (2011: 362).
References
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111.   ———. 2020. "Analiticity." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 288-299. New York: Routledge.

"In this chapter, I will begin to explore the question of what happens if we take seriously both the notion of analyticity and the notion of ground. I will do this by revisiting the old idea that analytic truths are "true in virtue of meaning". One warning is necessary before we start. I will indulge in the convenient but questionable practice of assuming that ground is a relation among facts. Nothing of consequence hangs on this, however, so readers who are wary of this way of thinking about grounding can make suitable adjustments as they read. See the Introduction to this volume for discussion." (p. 289)

112.   Dorsey, Jonathan Eric. 2016. "On the Grounding-Reduction Link." *American Philosophical Quarterly* no. 53:411-422.
Abstract: "The claim that reduction entails grounding (but not vice versa)---called "the grounding-reduction link"-is potentially very important but not clearly correct. After working through a fruitful debate between Gideon Rosen (who maintains the link) and Paul Audi (who maintains its impossibility), I distinguish between what I call "strict" and "broad" reduction. Strict reduction is incompatible with grounding, but broad reduction is not. Thus the link is possible, at least for broad reduction. However, neither strict nor broad reduction entails grounding. Ultimately, there may be a link between grounding and some highly qualified form of reduction. However, the philosophical traction that one might hope to gain for grounding via such a link is considerably diminished if not outright lost."
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113.   Dumsday, Travis. 2014. "E. J. Lowe on the Unity Problem." *Studia Philosophica Estonica* no. 7:195-218.
Abstract: "Some properties are connected in a perspicuous and unproblematic way. For instance, the possession of shape clearly entails the possession of size (and vice versa).
In other cases the connection is not so perspicuous. For instance, assuming that the precise rest mass and negative charge of an electron are both among its fundamental intrinsic properties, what links them, given that those properties are inherently separable? (Their separability is apparent from the fact that other kinds of particle have the same mass as an electron but a different charge, or the same charge but a different mass.) Given the inherent separability of those properties, what explains their conjunction in this case? Oderberg (2007, 2011) calls this the "unity problem", and attempts to solve it have issued from assorted schools of thought within both substance ontology and the metaphysics of natural kinds. One of the more significant of these solutions is proffered by E.J. Lowe as part of his four-category ontology.
Here I explicate his solution, raise a possible objection, and suggest a reply."
References
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114.   Duncan, Michael, Miller, Kristie, and Norton, James. 2017. "Is Grounding a Hyperintensional Phenomenon?" *Analytic Philosophy* no. 58:297-329.
"Two topics that have received a lot of attention in recent years are hyperintensionality and grounding. In this paper, we explore the relation between them. It is often said that grounding is hyperintensional; but there are a number of ways to understand this claim.
We argue that whether it is true depends both on what view of grounding one endorses and also on what one means by 'hyperintensional'." (p. 297)

115.   Elqayam, Shira. 2012. "Grounded rationality: Descriptivism in epistemic context." *Synthese* no. 189:39-49.

Abstract: "ormativism, the approach that judges human rationality by comparison against normative standards, has recently come under intensive criticism as unsuitable for psychological enquiry, and it has been suggested that it should be replaced with a descriptivist paradigm. My goal in this paper is to outline and defend a meta-theoretical framework of such a paradigm, *grounded rationality* , based on the related principles of descriptivism and (moderate) epistemic relativism. Bounded rationality takes into account universal biological and cognitive limitations on human rationality. Grounded rationality accepts universal constraints but adds cognitive variability: Within-individual variability (dual processing), and individual as well as cultural differences. I discuss the implications of grounded rationality to dual processing, proposing that investing limited cognitive resources in analytic processing might be less instrumentally rational for individuals with low cognitive ability."

116.   Emery, Nina. 2018. "Laws and Their Instances." *Philosophical Studies* no. 176:1535-1561.
Abstract: "Abstract I present an argument for the view that laws ground their instances. I thenoutline two important consequences that follow if we accept the conclusion of this argument. First, the claim that laws ground their instances threatens to undermine a prominent recent attempt to make sense of the explanatory power of Humean laws by distinguishing between metaphysical and scientific explanation. And second, the claim that laws ground their instances gives rise to a novel argument against the view that grounding relations are metaphysically necessary."

117.   ———. 2020. "Laws of Nature." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 437-448. New York: Routledge.
"Here is a plan for what follows. In Section 1, I will set out some groundwork with respect to the notion of laws of nature. I will then turn to two central questions in the metaphysics of laws: what (if anything) grounds the laws (Section 2) and what (if anything) the laws ground (Section 3).To keep things (relatively) simple, I will focus on these questions as they apply to deterministic laws that show up in fundamental physics. In Section 4, I say a bit about how the discussion might extend to laws that are not deterministic." (p. 437)

118.   Epstein, Brian. 2015. *The Ant Trap* . Oxford: Oxford University Press.
Chapter 6: *Grounding and Anchoring* , pp. 74-87.
"Grounding is most straightforwardly understood as a relation between facts. And in investigating social metaphysics, we look for the reasons for a wide variety of social facts to be the case. This is what a constitutive rule should be telling us. Sometimes we set up grounding conditions for a *particular* fact.
For instance, we set up grounding conditions for the existence of one particular boundary around a village. More typically, we set up general conditions for grounding some *kind* of social fact." (p. 76)

119.   Fine, Kit. 1994. "Essence and Modality." *Philosophical Perspectives* no. 8:1-16. Reprinted in *The Philosopher's Annual for 1994* , volume 16, (edited by Patrick Grim, Gary Mar, Peter Williams), Stanford: CSLI 1996 and in J. Kim, D. Korman, E. Sosa (eds.), *Metaphysics: An Anthology* , Oxford: Wiley-Blackwell 2011 (second edition).
"The concept of essence has played an important role in the history and development of philosophy; and in no branch of the discipline is its importance more manifest than in metaphysics.
Its significance for metaphysics is perhaps attributable to two main sources. In the first place, the concept may be used to characterize what the subject, or at least part of it, is about.
For one of the central concerns of metaphysics is with the identity of things, with what they are.
But the metaphysician is not interested in every property of the objects under consideration. In asking 'What is a person?', for example, he does not want to be

told that every person has a deep desire to be loved, even if this is in fact the case. What then distinguishes the properties of interest to him? What is it about a property which makes it bear, in the metaphysically significant sense of the phrase, on what an object is?

It is in answer to this question that appeal is naturally made to the concept of essence. For what appears to distinguish the intended properties is that they are essential to their bearers." (p. 1)

(...)

"It is my aim in this paper to show that the contemporary assimilation of essence to modality is fundamentally misguided and that, as a consequence, the corresponding conception of metaphysics should be given up. It is not my view that the modal account fails to capture anything which might reasonably be called a concept of essence. My point, rather, is that the notion of essence which is of central importance to the metaphysics of identity is not to be understood in modal terms or even to be regarded as extensionally equivalent to a modal notion. The one notion is, if I am right, a highly refined version of the other; it is like a sieve which performs a similar function but with a much finer mesh.

I shall also argue that the traditional assimilation of essence to definition is better suited to the task of explaining what essence is. It may not provide us with an analysis of the concept, but it does provide us with a good model of how the concept works. Thus my overall position is the reverse of the usual one. It sees real definition rather than de re modality as central to our understanding of the concept." (p. 3)

120.   ———. 1995. "Senses of Essence." In *Modality, Morality and Belief. Essays in Honor of Ruth Barcan Marcus* , edited by Sinnott-Armstrong, Walter, 53-73. Cambridge: Cambridge University Press.

"One may distinguish between tbe essential and accidental properties of an object. A property of an object is essential if it must have the property to be what it is; otherwise the property is accidental.

But what exactly is meant by this account? It has been common to give a further explanation in modal terms. A property is taken to be essential when it is necessary that the object have the property or, alternatively, when it is necessary that it have tbe property if it exist. For reasons that I have already given in my paper "Essence and Modality," I doubt whether this or any other modal explanation of the notion can succeed. Indeed, I doubt whether there exists any explanation of the notion in fundamentally different terms. But this is not to deny the possibility of further clarification; and it is the aim of the present paper to provide it.

What I shall do is to distinguish some of the closely related ways in which the notion may be understood. This will be important for getting clearer both on which claims can be made with its help and on which concepts can be defined with its help. In particular, we shall see that several different senses of ontological dependence correspond to the different senses of essence. The task is also important for the purpose of developing a logic of essentialist reasoning; for most of the different senses of essence that we distinguish will make a difference to the resulting logic. My main concern in this paper has been with making the distinctions, and not with drawing out their implications; but I hope it is clear from the examples what some of these implications are." (p. 53)

121.   ———. 2001. "The Question of Realism." *Philosopher's Imprint* no. 1:1-30. Reprinted in Andrea Bottani, Massimiliano Carrara, Pierdaniele Giaretta (eds.)*, Individuals, Essence and Identity. Themes of Analytic Metaphysics* , Dordrecht: Kluwer 2002, pp. 3-48.

"My aim in this paper is to help lay the conceptual and methodological foundations for the study of realism. I come to two main conclusions: first, that there is a primitive metaphysical concept of reality, one that cannot be understood in fundamentally different terms; and second, that questions of what is real are to be settled upon the basis of considerations of *ground* . The two conclusions are somewhat in tension with one another, for the lack of a definition of the concept of

reality would appear to stand in the way of developing a sound methodology for determining its application; and one of my main concerns has been to show how the tension between the two might be resolved.

The paper is in two main parts. In the first, I point to the difficulties in making out a metaphysical conception of reality.

I begin by distinguishing this conception from the ordinary conception of reality (§ 1) and then show how the two leading contenders for the metaphysical conception -- the factual and the irreducible-both appear to resist formulation in other terms. This leads to the quietist challenge, that questions of realism are either meaningless or pointless (§ 4); and the second part of the paper (§§ 5-10) is largely devoted to showing how this challenge might be met. I begin by introducing the notion of ground (§ 5) and then show how it can be used as a basis for resolving questions both of factuality (§§ 6-7) and of irreducibility (§§ 8-9). I conclude with some remarks on the essential unity of these two questions and of the means by which they are to be answered (§ 10)." (pp. 3-4)

122.   ———. 2009. "The Question of Ontology." In *Metametaphysics: New Essays on the Foundations of Ontology* , edited by Chalmers, David J., Manley, David and Wassermann, Ryan, 157-177. New York: Oxford University Press.

"There are a number of difficulties with the standard quantificational view. They are for the most part familiar but it will be worth spelling them out, if only to make clear how far removed our understanding of the ontological question is from our understanding of their quantificational counterparts. Philosophers may have learned to live with the disconnect between the two, but their tolerance of the situation should not lull us into thinking that it is tolerable." (p. 138)

"This account of our method for settling ontological dispute requires that we have a grasp not only of an absolute conception of reality, of there *being nothing more than* ..., but also of a relative conception, of *there being nothing more to ... than ...* , since it is through our assessment of the relative claims that we attempt to adjudicate the plausibility of the absolute claims. Many philosophers seem to have supposed that our having a good working grasp of such notions depends upon our being able to define them in other terms, so that questions of metaphysics or ontology thereby become questions of semantics or epistemology or total science. I consider this to be a serious methodological error: upon careful reflection we can see that our intuitive grasp of these notions is a sufficient guide in itself to their proper employment; and the attempt to define these notions in other terms has served merely to distort our understanding of the metaphysical questions and of the methods by which they are to be resolved." (p. 176)

123.   ———. 2010. "Some Puzzles of Ground." *Notre Dame Journal of Formal Logic* no. 51:97-118.

"In recent years there has been a growing interest in the concept of ground—of one thing holding in virtue of another, and, in developing an account of ground, a number of philosophers have laid down principles which they regard as unquestionably true of the concept. (1) The purpose of this note is to show that these principles are in conflict with seemingly impeccable principles of logic. Thus a choice must be made; either one or more of the metaphysical principles or one or more of the logical principles should be given up.

Some philosophers—and especially those already unsympathetic to ground—may think that the conflict reveals some underlying defect in the concept. For if acceptance of the concept of ground has such untoward consequences, then this can only be because the concept was no good in the first place. My own view—which I suggest toward the end of the paper—is quite different. It is not that considerations of ground should be ignored or even that the principles of ground should be given up in the light of their conflict with the principles of logic. Rather we need to achieve some kind of reflective equilibrium between the two sets of principles, one that does justice both to our logical intuitions and to our need for some account of their ground. Thus the conflict, far from serving to undermine the concept of

ground, serves to show how important it is to arriving at a satisfactory view of what in logic, as in other areas of thought, can properly be taken to hold.

The puzzle to which the conflict of principles gives rise bears some resemblance to the paradoxes of self-reference. It is not itself a paradox of self-reference: the puzzle, on the one side, makes no direct use of self-reference; the paradox, on the other side, makes no direct appeal to the notion of ground. But considerations of ground are often used to motivate certain solutions to the paradoxes, and the puzzle makes clear the reasoning behind these considerations and brings out the critical role played by the notion of ground. (2)" (pp. 97-98)

(1) They include Audi [1], Batchelor [2], Correia [3], Correia [4], Rosen [10], Schneider [11], and Schneider [12].

(2) I especially have in mind the kind of solution to the semantic paradoxes to be found in Kripke [8].

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[1] Audi, P., "Grounding," forthcoming, 2010. [Paul R. Audi, 'Grounding: Toward a Theory of the In-Virtue-Of Relation', *The Journal of Philosophy* 109, 2012, pp. 685-711.]

[2] Batchelor, R., "Grounds and consequences," *Grazer Philosophische Studien* , vol. 80 (2010), pp. 65–77.

[3] Correia, F., *Existential Dependence and Cognate Notions* , Philosophia Verlag GmbH, München, 2005.

[4] Correia, F., "Grounding and truth-functions," forthcoming in *Logique et Analyse* [211 (2010), 251–279]

[8] Kripke, S., "Outline of a theory of truth," *Journal of Philosophy* , vol. 72 (1975), pp. 690–71.

[10] Rosen, G., "Metaphysical dependence: Grounding and reduction," pp. 109–36 in *Modality: Metaphysics, Logic and Epistemology* , edited by B. Hale and A. Hoffman, Oxford University Press, Oxford, 2010.

[11] Schneider, B., "Truth-functionality," *Review of Symbolic Logic* , vol. 1 (2008), pp. 64–72.

[12] Schneider, B., "A logic of 'because'," in progress, 2010.

124.   ———. 2012. "Guide to Ground." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 37-80. Cambridge: Cambridge University Press.

"A number of philosophers have recently become receptive to the idea that, in addition to scientific or causal explanation, there may be a distinctive kind of metaphysical explanation, in which explanans and explanandum are connected, not through some sort of causal mechanism, but through some constitutive form of determination. I myself have long been sympathetic to this idea of constitutive determination or "ontological ground"; and it is the aim of the present chapter to help put the idea on a firmer footing – to explain how it is to be understood, how it relates to other ideas, and how it might be of use in philosophy. (1)" (p. 37)

(1) A number of other philosophers (they include Audi [forthcoming], Batchelor [2010], Schaffer [2009b], Correia [2005, 2010], Raven [2009], Rosen [2010], Schnieder [2011]) have done related work in defense of the notion; and I have not attempted to make a detailed comparison between their ideas and my own.

I am grateful to the participants at the Boulder conference on dependence and to Neil Tennant for many helpful comments on an earlier draft of the chapter. I should add that, for reasons of space, some of the material in the chapter originally submitted to the volume had been abridged.

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Schnieder, B. 2011. 'A Logic for "Because"', *The Review of Symbolic Logic* 4: 445–65

125.   ———. 2012. "The Pure Logic of Ground." *The Review of Symbolic Logic* no. 5:1-25.

"Ground is the relation of one truth holding in virtue of others. This relation is like that of consequence in that a necessary connection must hold between the relata if the relation is to obtain but it differs from consequence in so far as it required that there should also be an explanatory connection between the relata. The grounds must account for what is grounded. Thus even though P is a consequence of P & P, P & P is not a ground for P, since it does not account for the truth of P.

It is the aim of this paper to develop a semantics and proof theory for the pure logic of ground. The pure logic of ground stands to ground as Gentzen's structural rules stand to consequence. One prescinds from the internal structure of the propositions under consideration and simply asks what follows from what in virtue of the formal features of the underlying relation. Thus the claim that ground is transitive, that if P is a ground for Q and Q a ground for R then P should be a ground for R, is plausibly regarded as part of the pure logic of ground; but the claim that P is a ground for P & P will be part of the applied as opposed to the pure logic of ground, since it turns on the logical properties of &." (p. 1)

126.   ———. 2012. "The Essential Glossary of Ground."1. Available at https://www.academia.edu/27080402

"ground - a philosophical foodstuff, considered by some to be the elixir of life and by others to be
a deadly poison." (p. 1)

127.   ———. 2015. "Unified Foundations for Essence and Ground." *Journal of the American Philosophical Association* no. 1:296-315.

"There are, I believe, two different kinds of explanation or determination to be found in metaphysics - one of identity, or of what something is, and the other of truth, or of why something is so. One may explain what singleton Socrates is, for example, by saying that it is the set whose sole member is Socrates and one may explain why, or that in virtue of which, singleton Socrates exists by appeal to the existence of Socrates. One might talk, in connection with the first, of essence, of what singleton Socrates essentially is and, in connection with the second, of ground, of what grounds the existence of singleton Socrates. (1)

Of course, explanations of identity and of truth also occur outside of metaphysics, but what is characteristic of their occurrence within metaphysics is the especially tight connection between explanandum and explanans. Being a set whose sole member is Socrates is somehow constitutive of what Socrates is; and Socrates' existing is somehow constitutive of the existence of singleton Socrates. It is perhaps hard to say in general what constitutes a constitutive explanation but it is at least required, in any case of a constitutive explanation, that there should be metaphysically necessary connection between explanandum and explanans. Given that singleton Socrates is essentially a set whose sole member is Socrates, then it is metaphysically necessary that the set is one whose sole member is Socrates; and given that Socrates existence grounds the existence of singleton Socrates, it will be metaphysically necessary if Socrates exists that his singleton exists." (p. 296)
(...)

"My present view is that the relationship between the two kinds of explanation is much closer than I had originally taken it to be. The decisive step towards achieving the desired rapprochement is to see both kinds of explanation as having a generic, as well as a specific, bearing on the objects with which they deal; they must be allowed to have application to an arbitrary individual of a given kind and not just to specific individuals of that kind. Once this step is taken, the initial disparities between essence and ground disappear and we are able to provide a unified and uniform account of the two notions. I had previously referred to essence and ground as the pillars upon which the edifice of metaphysics rests (Fine [2012], p. 80), but we can now see more clearly how the two notions complement one another in providing support for the very same structure." (p. 297)

(1) I should like to thank the members of audiences at Birmingham, Oxford and Oslo for many helpful comments. The present paper is a companion to my paper 'Identity Criteria and Ground' and the reader may find it helpful, if not essential, to have the other paper at hand. I should note that Correia [2014] attempts to provide unified foundations, of a very different sort, in terms of an underlying notion of factual identity.

There has been a growing literature on essence and ground in the recent philosophical literature. My own work on essence dates back to Fine [1994]; and a useful reference on ground is the anthology of Correia & Schnieder [2012].

References

Correia F. & Schnieder B. (eds.), [2012] '*Metaphysical Grounding* ', Cambridge: Cambridge University Press.

Correia F. [2014] 'Identity, Essence and Ground', slides for a talk.

Fine K., [1994] 'Essence and Modality', in *Philosophical Perspectives* 8 (ed. J. Tomberlin) as the Nous Casteneda Memorial Lecture, pp. 1-16, (1994); reprinted in '*The Philosopher's Annual'* for 1994, volume 16, (ed. P. Grim), Stanford: CSLI; and reprinted in '*Metaphysics: An Anthology* ' (2nd edition), eds. J. Kim, D. Korman, E. Sosa, Oxford: Wiley-Blackwell (2011).

Fine K., [2012] 'Guide to Ground' in '*Metaphysical Grounding* ' (eds. B. Schnieder & F. Correia), Cambridge: Cambridge University Press, 8-25 pp.; reprinted online in '*Philosophers Annual* ' for 2012 (eds. P. Grim, C. Armstrong, P. Shirreff, N-H Stear).

Fine K., [2014] 'Identity Criteria and Ground', to appear in *Philosophical Studies* . [vol. 173, 2016, pp. 1-19]

128.   ———. 2016. "Identity Criteria and Ground." *Philosophical Studies* no. 173:1-19.
"Philosophers often look for criteria of identity or think they are not to be found. They may ask for a criterion of identity for sets, for example, or for propositions, or for persons across time, or for individuals across possible worlds. And in response to such requests, they have said such things as: a criterion of identity for sets is their having the same members; or a criterion of identity for persons across time is their psychological continuity. (1)

But what are these philosophers asking for when they ask for such criteria? I shall argue that the usual way of construing these questions is seriously misguided. I shall also propose an alternative - and, I hope, preferable - way of construing these questions and shall briefly indicate its significance for our more general understanding of metaphysical explanation. In what follows, I shall often use the criteria of identity for sets and for persons as examples. But it is important to bear in mind that they are just that, examples, and that the points I make concerning them are meant to apply, across the board, to all identity criteria." (p. 1)

(1) 1I should like to thank Ted Sider, Fatema Amijee and Martin Glazier for their very helpful written comments and members of the audiences at Austin, Birmingham, CUNY, Oberlin, Oxford and Oslo for many helpful oral comments.

129.   ———. 2017. "A Theory of Truthmaker Content II: Subject-matter, Common Content, Remainder and Ground." *Journal of Philosophical Logic* no. 46:675-702.
"We continue with the development of the theory of truthmaker content begun in part I, dealing with such 'non-standard' topics as subject matter, common content,

logical remainder and ground. This is by no means an exhaustive list of topics that might have been considered but it does provide an indication of the nature and scope of the theory. As before, the paper is divided into an informal exposition and a technical addendum. Both can be read independently of the other but it would be helpful, in either case, to have the first part of the paper at hand." (p. 675)

130.   ———. 2020. "Semantics." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 501-509. New York: Routledge.
"It has often been supposed that there need only be a modal connection between a truth-maker and the sentence it makes true or that the truth-maker need only be partially relevant to the sentence it makes true, so that the fact that it is raining and windy, for example, would then be a truth-maker for the sentence 'it is raining or snowing'. It is therefore important to note that the notion of ground gives rise to a quite distinctive notion of truth-making, which requires not merely a modal connection but also a very strong relevant connection.
Truth-making has been used for two quite distinct ends, one metaphysical and the other semantical. By attempting to discern the truth-makers of sentences, it has been thought that we might achieve a better understanding of the world via an understanding of *what* makes the sentences true and also that we might achieve a better understanding of language via an understanding of *how* the sentences are made true." (p. 502, note omitted)

131.   Fine, Kit, and de Rosseet, Louis. 2021. "A Semantics for the Impure Logic of Ground."
Avalaible at https://www.uvm.edu/~lderosse/impure.pdf
"This paper establishes a sound and complete semantics for the impure logic of ground. Fine [2012a] sets out a system for the pure logic of ground, one in which the formulas between which ground-theoretic claims hold have no internal logical complexity; and it provides a sound and complete semantics for the system.
Fine [2012b, §§6-8] sets out a system for an impure logic of ground, one that extends the rules of the original pure system with rules for the truth-functional connectives, the first-order quantiers, and λ-abstraction. However, it does not provide a semantics for this system. The present paper partly fills this lacuna by providing a sound and complete semantics for a system GG containing the truth-functional operators that is closely related to the truth-functional part of the system of [Fine, 2012b].(1)" (p. 1)
(1) The main differences between the two systems are that we now only allow finitely many formulas to occur to the left of the ground-theoretic operator and that we have added the Irreversibility Rule, which should have been part of the original system.
References
K. Fine. Guide to Ground. In Benjamin Schnieder and Fabrice Correia, editors, *Metaphysical Grounding: Understanding the Structure of Reality* , pages 37-80. Cambridge University Press, 2012b. reprinted online in `Philosophers Annual' for 2012 (eds. P. Grim, C. Armstrong, P. Shirre, N-H Stear).

132.   Fisher, David, Hong, Hao, and Perrine, Timothy. 2021. "A Challenge to the New Metaphysics: deRosset, Priority, and Explanation." *Synthese* no. 198:6403-6433.
Abstract: "Priority Theory is an increasingly popular view in metaphysics. By seeing metaphysical questions as primarily concerned with what explains what, instead of merely what exists, it promises not only an interesting approach to traditional metaphysical issues but also the resolution of some outstanding disputes. In a recent paper, Louis deRosset argues that Priority Theory isn't up to the task: Priority Theory is committed to there being explanations that violate a formal constraint on any adequate explanation.
This paper critically examines deRosset's challenge to Priority Theory. We argue that deRosset's challenge ultimately fails: his proposed constraint on explanation is neither well-motivated nor a general constraint. Nonetheless, lurking behind his

criticism is a deep problem for prominent ways of developing Priority Theory, a problem which we develop."

133.　Folde, Christian. 2015. "Grounding Interpretation." *British Journal of Aesthetics* no. 55:361-374.
Abstract: "In this paper I examine the relationship between interpreting a fiction and specifying its content.
The former plays a major role in literary studies; the latter is of central concern in the philosophical debate on truth in fiction. After elucidating these activities, I argue that they do not coincide but have interesting interdependencies. In particular, I argue that correct interpretations are metaphysically grounded in fictional content. I discuss this claim in detail and show why it is not in tension with the evidential claim that correct interpretations give us epistemic access to fictional content, which I also endorse."

134.　Forrai, Gábor. 2011. "Grounding Concepts: The Problem of Composition." *Philosophia* no. 39:721-731.
Abstract: "In a recent book C.S. Jenkins proposes a theory of arithmetical knowledge which reconciles realism about arithmetic with the a priori character of our knowledge of it. Her basic idea is that arithmetical concepts are grounded in experience and it is through experience that they are connected to reality. I argue that the account fails because Jenkins's central concept, the concept for grounding, is inadequate. Grounding as she defines it does not suffice for realism, and by revising the definition we would abandon the idea that grounding is experiential. Her account falls prey to a problem of which Locke, whom she regards as a source of inspiration was aware and which he avoided by choosing anti-realism about mathematics."
References
Jenkins, C. S. (2008). *Grounding concepts: An empirical basis for arithmetical knowledge* . Oxford: Oxford University Press.

135.　Francez, Nissim. 2021. "Logical Grounding: The Case of "if-then-else"." *Theoria* no. 87:1175-1192.
Abstract: "The paper proposes grounding the ternary connective "if … then … else" (classically interpreted), thus far not considered in the logical grounding literature. In doing so, a new kind of plural grounding, called collective immediate grounding, is proposed as more adequate than the traditional complete immediate grounding in avoiding redundancy. The approach is proof-theoretic."

136.　Fritz, Peter. 2021. "Ground and Grain." *Philosophy and Phenomenological Research* .
First online 11 August 2021.
"Current views of metaphysical ground suggest that a true conjunction is immediately grounded in its conjuncts, and only its conjuncts. Similar principles are suggested for disjunction and universal quantification. Here, it is shown that these principles are jointly inconsistent: They require that there is a distinct truth for any plurality of truths. By a variant of Cantor's Theorem, such a fine-grained individuation of truths is inconsistent. This shows that the notion of grounding is either not in good standing, or that natural assumptions about it need to be revised."

137.　Genco, Francesco A., Poggiolesi, Francesca, and Rossi, Lorenzo. 2021. "Grounding, Quantifiers, and Paradoxes." *Journal of Philosophical Logic* no. 50:1417-1448.
Abstract: "The notion of grounding is usually conceived as an objective and explanatory relation. It connects two relata if one—the ground—determines or explains the other—the consequence. In the contemporary literature on grounding, much effort has been devoted to logically characterize the formal aspects of grounding, but a major hard problem remains: defining suitable grounding principles for universal and existential formulae. Indeed, several grounding principles for quantified formulae have been proposed, but all of them are exposed

to paradoxes in some very natural contexts of application. We introduce in this paper a first-order formal system that captures the notion of grounding and avoids the paradoxes in a novel and nontrivial way. The system we present formally develops Bolzano's ideas on grounding by employing Hilbert's ε-terms and an adapted version of Fine's theory of arbitrary objects."

138.   Giannini, Giacomo, and Stephen, Mumford. 2021. "Formal Causes for Powers Theorists." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 87-105. New York: Routledge.
"We have examined three degrees of involvement between powers and formal explanations involving essences. We have done this without taking a stance on the precise nature of the essence-operator, and therefore on what it is to be constitutively essential. This leaves an unsatisfactory gap in our treatment of the topic: those formal explanations appealing only to constitutive essences seem to have a much weaker link with powers. This leaves open the possibility of a *fourth* degree of essential involvement: that the essence-operator could be analysed or reduced to the basic ideology of powers metaphysics (be it Vetter's POT operator, or some primitive 'directedness' relation). In other words, that constitutive essence itself could be reduced to some feature of powers. This would establish the strongest possible link between formal explanations and powers. We are skeptical that this can be done. We will not, however, attempt to discuss it: taking on the debate about the best understanding of constitutive essence goes beyond the scope of the paper, and beyond our powers at the moment. So, in this paper, we settle for a modest conclusion: we are content to show that an important subset of formal explanations, those involving propria, can be grounded in a metaphysics of powers, without showing that all of them do, nor that powers are uniquely qualified to do so." (Conclusion, p. 102)
References
Vetter, B. (2015) *Potentiality: From Dispositions to Modality* . Oxford: Oxford University Press.

139.   Giannotti, Joaquim, and Bianchi, Silvia. 2021. "Grounding Ontic Structuralism." *Synthese* no. 199:5205-5223.
Abstract: "A respectable assessment of priority-based ontic structuralism demands an elucidation of its metaphysical backbone. Here we focus on two theses that stand in need of clarification: (1) the Fundamentality Thesis states that structures are fundamental, and (2) the Priority Thesis states that these structures are prior to putative fundamental objects, if these exist. Candidate notions to illuminate (1) and (2) such as supervenience and ontological dependence failed at this task. Our purpose is to show that grounding is the best competitor to articulate (1) and (2), and regiment such theses in a desirable unified way. Our strategy is two-fold. First, we make the case that grounding does better than ontological dependence and supervenience. Second, we show that the distinction between partial and full grounds permits us to respond to an objection raised by Kerry McKenzie against the proposal of interpreting priority-based Ontic Structuralism in the idiom of metaphysical determination. Our conclusion is that priority ontic structuralists have compelling reasons for adopting a grounding-based approach."

140.   Gillett, Carl. 2016. "The Metaphysics of Nature, Science, and the Rules of Engagement." In *Scientific Composition and Metaphysical Ground* , edited by Aizawa, Ken and Gillett, Carl, 205-247. London: Palgrave-Macmillan.
"I look at prominent approaches to vertical relations from three different areas of philosophy that are increasingly used to provide accounts
of scientific composition. In section 1.1, I provide a brief overview of work in analytic metaphysics on "Grounding"; in section 1.2, I outline what I term "neo-Causal" treatments from philosophy of science of "constitutive" relations and explanations; and, in section 1.3, I survey standard "functionalist" frameworks from the philosophy of mind. Although differing in various ways, I suggest all these views, when considered as treatments of scientific composition, are Unengaged to

varying degrees because each of these positions does not construct its account of scientific composition through the detailed examination of compositional explanations.
How then are these various views constructed? I show that work in all of these areas actually pursues the Appropriational strategy: each account appropriates machinery developed for other phenomena." (p. 211)

141.   Glazier, Martin. 2017. "Essentialist Explanation." *Philosophical Studies* no. 174:2871-2889.
Abstract: "Recent years have seen an explosion of interest in metaphysical explanation, and philosophers have fixed on the notion of ground as the conceptual tool with which such explanation should be investigated. I will argue that this focus on ground is myopic and that some metaphysical explanations that involve the essences of things cannot be understood in terms of ground. Such 'essentialist' explanation is of interest, not only for its ubiquity in philosophy, but for its being in a sense an ultimate form of explanation. I give an account of the sense in which such explanation is ultimate and support it by defending what I call the *inessentiality of essence* . I close by suggesting that this principle is the key to understanding why essentialist explanations can seem so satisfying."

142.   ———. 2020. "Explanation." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 121-132. New York: Routledge.
"Metaphysical ground, like other topics in philosophy, is the subject of intense disagreement. What is it? What principles govern it? How can we know anything about it? Controversy surrounds these and other questions about ground. But if there is one uncontroversial claim in this area, it is that ground is deeply linked with a certain form of explanation, what we will call grounding explanation.This link and this form of explanation are the subject of this chapter."
(...)
"This chapter surveys the philosophical literature on grounding explanation and its connection to metaphysical ground. I begin by discussing explanation in general (§1) before turning to grounding explanation in particular (§2). I then take up the question of whether and how this form of explanation relates to reality (§3). I turn finally to ground (§4)." (p. 121)

143.   ———. 2021. "The Difference Between Epistemic and Metaphysical Necessity." *Synthese* no. 198:1409-1424.
Abstract: "Philosophers have observed that metaphysical necessity appears to be a true or real or genuine form of necessity while epistemic necessity does not. Similarly, natural necessity appears genuine while deontic necessity does not. But what is it for a form of necessity to be genuine? I defend an account of genuine necessity in explanatory terms. The genuine forms of necessity, I argue, are those that provide what I call *necessitarian explanation* . I discuss the relationship of necessitarian explanation to ground."

144.   Goff, Philip. 2019. "Grounding, Analysis, and Russellian Monism." In *The Knowledge Argument* , edited by Coleman, Sam, 198-222. Cambridge: Cambridge University Press.
"Mary in her black and white room knows all that physical science can teach us about the physical facts involved in colour experience. But it does not follow that she knows everything there is to know about these facts. The Russellian monist exploits this gap to defend a form of physicalism – in a very broad sense of that word. Unfortunately, recent developments in the grounding literature cast doubt on that strategy, or so I will argue." (p. 198)

145.   Grajner, Martin. 2021. "Grounding, Metaphysical Laws, and Structure." *Analytic Philosophy* no. 62:376-395.
Abstract: According to the deductive-nomological account of ground, a certain fact A grounds another fact B in case the laws of metaphysics determine the existence of

B on the basis of the existence of A. Accounts of grounding of this particular variety have already been developed in the literature.

My aim in this paper is to sketch a new version of this account.

My preferred account offers two main improvements over extant accounts. First, the present account is able to deal with necessitarian as well as non-necessitarian cases of grounding by acknowledging the existence of two types of metaphysical laws. I will argue that we should assume that metaphysical laws come in the necessitarian as well as in the non-necessitarian variety—closely paralleling the distinction between strict and non-strict laws made in the philosophy of science. The second main improvement of the present account is that it can provide an explanation of why metaphysical laws have a direction built into them. I will argue that we should characterize metaphysical laws with the help of Theodore Sider's notion of structure, which is a descendent of David Lewis's notion of naturalness. According to the account of metaphysical laws developed in this paper, metaphysical laws express in their antecedents either perfectly structural truths or more structural truths than in their consequents.

Since on Sider's account structural features of reality are fundamental features of reality, the account explains the direction built into metaphysical laws."

146.   Greco, Daniel. 2018. "Explanation, Idealism, and Design." In *Idealism: New Essays in Metaphysics* , edited by Goldschmidt, Tyron and Pearce, Kenneth L., 231-245. New York: Oxford University Press.

"My aim in this essay is twofold. First, following up a common suggestion in the recent literature,(1) I'll show how we can formulate versions of physicalism, dualism, and idealism as theses about grounding, or metaphysical explanation, rather than as more straightforwardly ontological theses concerning what exists. Second, I'll argue that this reformulation provides a helpful lens through which to look at arguments in the philosophy of religion. In particular, traditional versions of theism are naturally understood as versions of idealism, once idealism is understood as a thesis about grounding." (p. 231)

(1) See, e.g., Fine (2001), Schaffer (2009), Bennett (2011a), Dasgupta (2014).

References

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Schaffer, Jonathan. 2009. "On What Grounds What." In David J. Chalmers, David Manley, and Ryan Wasserman, eds. Metametaphysics: *New Essays on the Foundations of Ontology* (Oxford: Oxford University Press), 347–83.

147.   Griffith, Aaron M. 2014. "Truthmaking and Grounding." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 57:196-215.

Abstract: "This paper is concerned with the relation between two important metaphysical notions, 'truthmaking' and 'grounding.' I begin by considering various ways in which truthmaking could be explicated in terms of grounding, noting both strengths and weaknesses of these analyses. I go on to articulate a problem for any attempt to analyze truthmaking in terms of a generic and primitive notion of grounding based on differences we find among examples of grounding. Finally, I outline a more complex view of how truthmaking and grounding could relate. On the view explored, truthmaking is a species of grounding differentiated from other species of grounding by the unique form of dependence it involves."

148.   ———. 2018. "Social Construction and Grounding." *Philosophy and Phenomenological Research* no. 97:393-409.

Abstract: "The aim of this paper is to bring recent work on metaphysical grounding to bear on the phenomenon of social construction. It is argued that grounding can be used to analyze social construction and that the grounding framework is helpful for articulating various claims and commitments of social constructionists, especially about social identities, e.g., gender and race. The paper also responds to a number

of objections that have been (or could be) leveled against the application of grounding to social construction from Elizabeth Barnes (2014), Mari Mikkola (2015), and Jessica Wilson (2014)."
References
Barnes, E. "Going Beyond the Fundamental: Feminism in Contemporary Metaphysics." *Proceedings of the Aristotelian Society* 114:3, pt. 3 (2014): 335–51.
Mikkola, M. "Doing Ontology and Doing Justice: What Feminist Philosophy Can Teach Us about Meta-Metaphysics." *Inquiry* 58:7–8 (2015): 780–805.
Wilson, J. "No Work for a Theory of Grounding." *Inquiry* (2014): 1–45.

149.   Guigon, Ghislain. 2018. "Truths *qua* Grounds." *Philosophy and Phenomenological Research* no. 97:99-125.
Abstract: "A number of philosophers have recently found it congenial to talk in terms of grounding. Grounding discourse features grounding sentences that are answers to questions about what grounds what. The goal of this article is to explore and defend a counterpart-theoretic interpretation of grounding discourse. We are familiar with David Lewis's applications of the method of counterpart theory to *de re* modal discourse.
Counterpart-theoretic interpretations of *de re* modal idioms and grounding sentences share similar motivations, mechanisms, and applications. I shall explain my motivations and describe two applications of a counterpart theory for grounding discourse. But, in this article, my main focus is on counterpart-theoretic mechanisms."

150.   Hakkarainen, Jani, and Keinänen, Markku. 2021. "Away with Dispositional Essences in Trope Theory." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 106-123. New York: Routledge.
"In Section 1, we will outline the central features of our theory relevant to the present discussion. We will argue in Section 2 that dispositional essentialism is incompatible with the Strong Nuclear Theory or Keith Campbell's and Douglas Ehring's trope theories because tropes would be identity-dependent on other tropes in dispositional essentialism. In addition to being incompatible with these one-category trope ontologies, dispositional essentialism faces serious problems in characterizing essences of fundamental properties. As we will argue in Section 3, the exact advantages of dispositional essentialism remain unclear in comparison with the views taking laws of nature as primitive. Finally, in Section 4, we outline an alternative account, based on Smith's (2016) non-recombinatorial quidditism, according to which tropes as particular characters or natures necessitate their own fundamental nomological roles. The resulting conception of powerful tropes is compatible with the Strong Nuclear Theory and does not introduce any such problematic additional constructions as primitive dispositional essences or laws of nature considered as fundamental constituents of reality. In our view, he closest substitutes for formal causes are powerful tropes necessary
to a given substance." (p. 107)
References
Campbell, K. (1981) 'The Metaphysic of Abstract Particulars'. *Midwest Studies in Philosophy* 6 (1), 477-88.
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Smith, D. (2016) 'Quid Quidditism Est?' *Erkenntnis* 81(2), 237-57.

151.   Hansen, Casper Storm. 2014. "Grounded Ungroundedness." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 57:216-243.
"Kripke's well-known theory of truth(1) has some (also well-known) problems with regard to semantic openness and inadequate modelling of some intuitively unproblematic uses of the truth predicate. I will present a modification of the theory that solves some of these problems. But first (Section II) it is argued that the basic version of Kripke's theory is on the right track if we are looking for an explication

of the correspondence theory of truth, because the correspondence relation is a grounding relation. The modification is done in an attempt to stay true to these basic ideas behind Kripke's construction and just take them a step further by extending the range of facts that truth values can be grounded in to include facts about sentences being ungrounded.
Thereby some of the problems of expressive weakness in Krikpe's own theory are solved." (p. 216)
(1) Kripke, Saul. 'Outline of a Theory of Truth'. *The Journal of Philosophy* 72 (1975): 690–716.

152.   ———. 2016. "Unified Grounding." *Erkenntnis* no. 81:993-2010.
Abstract: "This paper offers a unification and systematization of the grounding approaches to truth, denotation, classes and abstraction. Its main innovation is a method for ''kleenifying'' bivalent semantics so as to ensure that the trivalent semantics used for various linguistic elements are perfectly analogous to the semantics used by Kripke, rather than relying on intuition to achieve similarity. The focus is on generalizing strong Kleene semantics, but one section is devoted to supervaluation, and the unification method also extends to weak Kleene semantics."

153.   Harbecke, Jens. 2016. "Is Mechanistic Constitution a Version of Material Constitution?" In *Scientific Composition and Metaphysical Ground* , edited by Carl Gillett, Ken Aizawa, 91-121. London: Palgrave-Macmillan.
"The investigation proceeds as follows. In a first step, I reconstruct the context in which the question about mechanistic constitution arises (section "The Question of Mechanistic Constitution"). I then review the philosophical enquiry associated with mechanistic constitution (section "The Mechanistic Approach"), which includes a discussion of the regularity theory (section "What Is Mechanistic Constitution?") and of identity statements about phenomena and mechanisms (section "Identity"). Subsequently, I review the problem of material constitution and the grounding problem (section "The Question of Material Constitution").
I then show that material constitution is to be distinguished from mechanistic constitution (section "Is Mechanistic Constitution Material Constitution?") while there are various logical and conceptual connections between the two notions (section "Connections"). In a final step, I suggest that the ontology presupposed by the regularity approach to mechanistic constitution offers an informative eliminativist solution to the problem of mechanistic constitution and grounding (section "Mechanisms and the Grounding Problem"). The last section summarizes the argument and raises some open questions that the present chapter was unable to answer (section "Conclusion")." (p. 93)

154.   Haukioja, Jussi. 2013. "Different Notions of Response-Dependence." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 167-190. Munich: Philosophia Verlag.
"An intuitively compelling distinction seems to exist between those areas of discourse in which the facts are in some sense 'up to us' and those in which they are not.
(...)
Response dependence theories were initially proposed as an attempt to sharpen this distinction. However, the original idea has since been extended in various different ways, with different philosophical aims in mind. As a result, discussions of response-dependence can sometimes be confusing--my hope in the present chapter is to clarify the situation and reduce the risk of misunderstandings, by presenting an overview of the main theories and their differences." (p. 167)

155.   Henderson, David, and Horgan, Terry. 2013. "On the Armchair Justification of Conceptually Grounded Necessary Truths." In *The a Priori in Philosophy* , edited by Casullo, Albert and Thurow, Joshua C., 111-133. New York: Oxford University Press.

"The plan of the chapter is as follows. In Section 1, we discuss armchair methodology in linguistics, as a useful model for armchair philosophical reasoning. In Section 2, we elaborate on our conception of low-grade a priori reasoning in philosophy, in a way that emphasizes some key respects in which such reasoning incorporates empirical considerations. In Section 3, we illustrate low-grade a priori reasoning in action. We discuss a series of scenarios concerning a much-discussed concept (namely, the concept water), and we use these scenarios to argue for two hypotheses, each of which is apt to seem somewhat surprising in the current philosophical climate: first, metaphysically necessary truths that are semantically non-analytic and epistemologically a posteriori— e.g., "Water is composed of H2O"—are underwritten by yet-more-fundamental necessary truths that are analytic; and second, it is a conceptually grounded necessary truth that some statements expressing epistemic possibilities do not express metaphysical possibilities. In Section 4, we situate our conception of armchair reasoning in philosophy in relation to two other conceptions—on the one hand, that of Timothy Williamson, whose construal of such reasoning is less traditional than ours, and on the other hand, that of those philosophers who continue to deploy a more traditional understanding of the a priori. We argue that our own conception is preferable to each of these alternatives." (p. 112)

156.   Hoeltje, Miguel, Schnieder, Benjamin, and Steinberg, Alex, eds. 2013. *Varieties of Dependence: Ontological dependence, Grounding, Supervenience, Response-Dependence* . Munich: Philosophia Verlag.
Contents: Miguel Hoe!tje: Introduction 9:
Part I: Surveys
Kathrin Koslicki: Ontological Dependence: An Opinionated Survey 31; Phil Corkum: Substance and Independence in Aristotle 65; Kelly Trogdon: An Introduction to Grounding 97; Alex Steinberg: Supervenience: A Survey 123; Jussi Haukioja: Different Notions of Response-Dependence 167;
Part II: Research Papers
E.]. Lowe: Some Varieties of Metaphysical Dependence 193; CS.I. .Jenkins: Explanation and Fundamentality 211; Louis deRosset: No Free Lunch 243; Fabrice Correia: Metaphysical Grounds and Essence 271; Stefano Caputo: The Dependence of Truth on Being: Is There a Problem for Minimalism? 297; Stephan Leuenberger: Supervenience Among Classes of Relations 325; Ralf M. Bader: Multiple-Domain Supervenience for Non-Classical Mereologies 347; Eline Busck Gundersen: Response-Dependence and Conditional Fallacy Problems 369; Dan Lopez de Sa: Rigid vs. Flexible Response-Dependent Properties 393;
Name Index 419: Subject Index 423; List of Contributors 429-431.

157.   Horgan, Terence. 1993. "From Supervenience to Superdupervenience: Meeting the Demands of a Material World." *Mind* no. 102:555-586.
"There now seems to be emerging (e.g., Kim 1990; 1993b, ch. 9) an attitude of sober reassessment, accompanied by a suspicion that supervenience theses per se do less work philosophically than some had hoped they would.
I think this change of mood was in many ways inevitable, given certain ironic facts about the history of the notion of supervenience in philosophical thought during the 20th century. There is much to be learned from this history about both the uses and the limitations of supervenience theses, especially with respect to materialism. So the first half of this paper,§§ 1-4, will be a historical overview, aimed at highlighting some key ironies and drawing some important lessons for materialist metaphysics. The principal moral will be that supervenience relations, in order to figure in a broadly materialistic worldview, must be explainable rather than sui generis."
References
Kim, Jaegwon 1990: "Supervenience as a Philosophical Concept". Metaphilosophy 2, 1, 1 & 2, pp. 1-27.
-- 1993b: *Supervenience and Mind* . Cambridge: Cambridge University Press.

158.   Horvath, Joachim. 2018. "Philosophical Analysis: The Concept Grounding View."
        Philosophy and Phenomenological Research no. 97:724-750.
        Abstract: "Philosophical analysis was the central preoccupation of 20th-century
        analytic philosophy. In the contemporary methodological debate, however, it faces a
        number of pressing external and internal challenges. While external challenges, like
        those from experimental philosophy or semantic externalism, have been extensively
        discussed, internal challenges to philosophical analysis have received much less
        attention. One especially vexing internal challenge is that the success conditions of
        philosophical analysis are deeply unclear.
        According to the standard textbook view, a philosophical analysis aims at a strict
        biconditional that captures the necessary and sufficient conditions for membership
        in the relevant category. The textbook view arguably identifies a necessary
        condition on successful philosophical analyses, but understood as a sufficient
        condition it is untenable, as I will argue in this paper. To this end, I first uncover
        eight conditions of adequacy on successful philosophical analyses, some of which
        have rarely been spelled out in detail. As we shall see, even sophisticated
        alternatives to the textbook view fail to accommodate some of these conditions.
        I then propose the concept grounding view as a more promising account of
        philosophical analysis.
        According to this view, successful philosophical analyses require necessary
        biconditionals that are constrained by grounding relations among the concepts
        involved. Apart from providing a satisfactory account of philosophical analysis in
        its own right, the concept grounding view is also able to meet the challenge that the
        success conditions of philosophical analysis are problematically unclear."

159.   Hovda, Paul, and Cross, Troy. 2013. "Grounding Relation(s): Introduction." *Essays
        in Philosophy* no. 14:1-6.
        "Metaphysics has witnessed a dramatic shift of late. While questions about
        existence, possibility, and necessity still matter to the discipline, the focus now rests
        on questions about essence, grounding, naturalness, fundamentality, and structure.
        Metaphysicians have gone from asking merely what there is, could be, or must be,
        to asking about features of things, and connections among things, that may not be
        describable merely in terms of existence, possibility, and necessity; for example:
        what grounds what?
        From the perspective of a logical empiricist, the transition from ontology and modal
        metaphysics to essentialist metaphysics is a passing from dark to still darker days.
        But Aristotle might see things differently. In fact, one might be tempted to dub this
        transition "The Aristotelian Turn". This issue features papers illuminating one of
        the central notions enabling this recent turn, the notion of grounding." (p. 1)

160.   Howard-Snyder, Daniel, Rasmussen, Joshua, and Cullison, Andrew. 2013. "On
        Whitcomb's Grounding Argument for Atheism." *Faith and Philosophy* no. 30:198-
        204.
        Abstract: "Dennis Whitcomb argues that there is no God on the grounds that (i) God
        is supposed to be omniscient, yet (ii) nothing could be omniscient due to the nature
        of grounding. We give a formally identical argument that concludes that one of the
        present co-authors does not exist. Since he does exist, Whitcomb's argument is
        unsound. But why is it unsound? That is a difficult question.
        We venture two answers. First, one of the grounding principles that the argument
        relies on is false. Second, the argument equivocates between two kinds of
        grounding: instance-grounding and quasi-mereological grounding.
        Happily, the equivocation can be avoided; unhappily, avoidance comes at the price
        of a false premise."
        References
        Dennis Whitcomb, "Grounding and Omniscience," *Oxford Studies in Philosophy of
        Religio* n 4 (2012). pp. 173-201.

161.   Jago, Mark, ed. 2016. *Reality Making* . Oxford: Oxford University Press.

162.   ———. 2016. "Reality-Making: Introduction." In *Reality Making* , edited by Jago, Mark, 1-10. Oxford: Oxford University Press.
"This volume contains chapters based on the *Reality Making* conference in metaphysics, held in Nottingham in July, 2012. Most of them are revised and expanded versions of talks given at the conference. They are closely focused on the conference's main metaphysical themes: *grounding, fundamentality, and essence* .The first two, by Martin Glazier and NaomiThompson, primarily concern grounding. They address questions of how entities non-causally depend on other entities for their existence and qualitative character; and they consider the nature and importance of that dependence relation.The next two chapters, by Jacek Brzozowski and Matthew Tugby, consider what kinds of entity, if any, are fundamental to reality. They investigate the relationship between the fundamental and all the other parts of reality, and the connection between fundamental reality and other ways the world could have been. The remaining four chapters, by Mark Jago, Nicholas Jones, Sonia Roca-Royes, and Nathan Wildman, focus on the topic of reality-making:
essence and its connection to *grounding* and *fundamentality* . These chapters focus on the essences of objects (as opposed to properties and other kinds of entity). They ask: what are material objects?Are they fundamental parts of reality? If not, how are they grounded? What grounds their essences and their modal properties?"

163.   ———. 2016. "Essence and the Grounding Problem." In *Reality Making* , edited by Jago, Mark, 99-120. Oxford: Oxford University Press.
"As I indicated above, I find pluralism to be well-motivated, independently of the modal argument; and I've argued for pluralism (by arguing against monism) elsewhere (Barker and Jago 2014). My aim in this paper is not to argue for pluralism, but to defend it against its most serious problem."
(...)
"If modal differences (including differences in persistence conditions) between coincident objects cannot be grounded, then pluralism about coincident objects looks to be in bad shape.
How should the pluralist respond? Her options seem to be limited from the start. Some have suggested that modal differences between coincident objects depend on the way we conceptualize the objects in question (§5.3). Others have claimed that the pluralist must take such modal differences to be primitive facts about our world (§5.4). Both approaches are unappealing; and the pluralist can do much better.
My aim in this chapter is to set out (what I take to be) the best response to the grounding problem." (p. 100)
References
Barker, S. and Jago, M. (2014). 'Monism and material constitution', *Pacific Philosophical Quarterly* 95(2): 189-204-

164.   ———. 2018. "From Nature to Grounding." In *Reality and its Structure: Essays in Fundamentality* , edited by Bliss, Ricki Leigh and Priest, Graham, 199-216. Oxford: Oxford University Press.
"The underlying complaint is that there's no way to understand the general features of grounding.
(...)
We can develop both a general theory of grounding and a theory of how particular things are grounded. The key link between the simple logical cases and the difficult

ones-involving material objects, mental states, truth, and so on-concerns the natures of those entities. I'll argue for a certain view of what makes those entities what they are, and then show how this provides us with information on how they are (or could be) grounded. If we can get a grasp on the natures of things (in the sense to be articulated below), then the simple logical cases give us what we need to understand the grounding conditions for those entities." (pp. 199-200)

165.   Jansen, Ludger, and Sanstad, Petter, eds. 2021. *Neo-Aristotelian Perspectives on Formal Causation* . New York: Routledge.
Contents: List of Figures IX, List of Tables XI, Acknowledgements XIII; List of Abbreviations XV;
Ludger Jansen, Petter Sandstad: 1. Introducing Formal Causation 1;
Part I: Scholastic Approaches to Formal Causation 17;
2. Gyula Klima: Form, Intention, Information: From Scholastic Logic to Artificial Intelligence 19; 3. David S. Oderberg: Formal Causation: Accidental and Substantial 40;
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4. Petter Sanstad, Ludger Jansen: A Non-hylomorphic Account of Formal Causation 65; 5. Giacomo Giannini, Stephen Mumford: Formal Causes for Powers Theorists 87; 6. Jani Hakkarainen, Markku Keinänen: Away with Dispositional Essences in Trope Theory 106; 7. Michele Paolini Paoletti: Functional Powers 124;
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12. Christopher J. Austinì: Form, Cause, and Explanation in Biology: A Neo-Aristotelian Perspective 238; 13. Sandeep Prasada: Formal Explanation and Mechanisms of Conceptual Representation 269;
List of Contributors 287; Index of Passages from Aristotle 291; General Index 293.

166.   ———. 2021. "Introducing Formal Causation." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sanstad, Petter, 1-16. New York: Routledge.
"The essays in this volume, together with this introduction, trace the historical development of formal causation and demonstrate its relevance for contemporary issues, such as causation, explanation, laws of nature, powers, functions, trope theory, essence, dependence, and metaphysical grounding. There are also papers connecting formal causation to contemporary work in biology and cognitive science.
In this introduction, we will first sketch the history of formal causation, from its beginning with Plato and Aristotle, its reception by (and criticism from) the ancient commentators, and all the way to our current time (Section 1). Second, we take a more systematic point of view, and attempt to answer the question of why we need a theory of formal causation today (Section 2). To do so, we point at possible applications for such a theory by pinpointing the relevance of formal causation to the current literature (Section 2.1). We next look at the different approaches to formal causation that is to be found today and investigate whether they are concerned with the same issue (Section 2.2). Lastly, we point out some open questions, some of which are addressed by the contributions of this volume (Section 2.3). Finally, we shall give a summary of each contribution of this volume (Section 3)." (p. 1)

167.   Jansson, Lina. 2017. "Explanatory Asymmetries, Ground, and Ontological dependence." *Erkenntnis* no. 82:17-44.
Abstract: "The notions of ground and ontological dependence have made a prominent resurgence in much of contemporary metaphysics. However, objections

have been raised. On the one hand, objections have been raised to the need for distinctively metaphysical notions of ground and ontological dependence. On the other, objections have been raised to the usefulness of adding ground and ontological dependence to the existing store of other metaphysical notions. Even the logical properties of ground and ontological dependence are under debate. In this article, I focus on how to account for the judgements of non-symmetry in several of the cases that motivate the introduction of notions like ground and ontological dependence. By focusing on the notion of explanation relative to a theory, I conclude that we do not need to postulate a distinctively asymmetric metaphysical notion in order to account for these judgements."

168.　　Javier-Castellanos, Amir A. 2014. "Some Challenges to a Contrastive Treatment of Grounding." *Thought: A Journal of Philosophy* no. 3:184-192.
Abstract: "Jonathan Schaffer has provided three putative counterexamples to the transitivity of grounding, and has argued that a contrastive treatment of grounding is able to provide a resolution to them, which in turn provides some motivation for accepting such a treatment. In this article, I argue that one of these cases can easily be turned into a putative counterexample to a principle which Schaffer calls differential transitivity. Since Schaffer's proposed resolution rests on this principle, this presents a dilemma for the contrastivist: either he dismisses the third case, which weakens the motivation for accepting his treatment of grounding, or else he accepts it, in which case he is faced with a counterexample to a principle that his proposed resolution to the original cases depends on. In the remainder of the article, I argue that the prima facie most promising strategy the contrastivist could take, which is to place some restriction on which contrastive facts are admissible so as to rule out the purported counterexample to differential transitivity, faces some important difficulties. Although these difficulties are not insurmountable, they do pose a substantial challenge for the contrastivist."
References
Schaffer, Jonathan. "Grounding, Transitivity, and Contrastivity," in Correia, Fabrice and Schneider, Benjamin, *Metaphysical Grounding: Understanding the Structure of Reality* . Cambridge: Cambridge University Press, 2012, pp. 122-138.

169.　　Jenkins, C. S. 2008. *Grounding Concepts: An Empirical Basis for Arithmetical Knowledge* . New York: Oxford University Press.
"I assume that arithmetical truths are conceptual truths; that is, that we can tell that they are true just by examining our concepts (i.e. certain of our mental representations). But, I say, the epistemological story cannot end there. In order for an examination of our concepts to supply us with knowledge of an independent reality, it must be that those concepts are appropriately sensitive to the nature of that reality, or what I call *grounded* . A concept's being grounded in my sense requires that it (or, perhaps, the constituent concepts from which it is built) should accurately represent some feature of the independent world.(8) That is, groundedness requires that the concept be what I call *fitting* . But more is also required: just as knowledge requires more than truth, groundedness requires more than fittingness. In fact, I suggest that there is a very tight analogy between the two cases." (Introduction, p. 8)
(8) In fact, there is a little more subtlety involved in the precise formulation of this notion. But this sketch will do to convey the general idea.

170.　　———. 2011. "Is Metaphysical Dependence Irreflexive?" *The Monist* no. 94:267-276.
"It is very commonly asserted that metaphysical dependence or grounding is an irreflexive relation: that is to say, it *never holds between an item and itself.* " (p. 267)
(...)
"Maybe the irreflexivity assumption doesn't require argument?
Perhaps it is reasonable just to assume it in the absence of arguments to the contrary. There are (at least) three possible ways to back up this suggestion.

One could take the irreflexivity claim to be:
1. stipulative,
2. intuitive, or
3. too basic to require justification (at least in the relevant contexts).
If it is taken to be stipulative (i.e. if one takes it to be true by definition that dependence is irreflexive), one runs the risk of discussing something that isn't what everyone else meant by 'dependence', or of discussing something that is less interesting than schmependence (a nearby non-irreflexive relation). One can mean whatever one likes by 'dependence', of course, but these risks are to be treated with respect by any serious philosopher.
If one merely takes irreflexivity to be intuitive, however, one is open to the possibility that its intuitiveness might be explained away as being due to quasi-irreflexivity.
What about taking irreflexivity to be too basic to require justification in the relevant contexts?8 After all, one must start somewhere if one is to make any progress; one can't argue for all one's assumptions. But one can assert that dependence appears to be irreflexive, or exhibits some features suggestive of irreflexivity, almost as quickly as one can assert that it is irreflexive.
Now that the irreflexivity assumption has been questioned and one obvious motivation for it undermined, it is not good philosophical practice to sweep the challenge back under the carpet." (p. 275, notes omitted)

171.   Jones, Nicholas K. 2016. "*Object* as a Determinable." In *Reality Making* , edited by Jago, Mark, 121-151. Oxford: Oxford University Press.
Contents: List of Figures VII; List of Contributors VIII; Mark Jago: Reality-Making: Introduction 1; Martin Glazier: Laws and the Completeness of the Fundamental 11; Naomi Thompson: Metaphysical Interdependence 38; Jacek Brzozowski: Monism and Gunk 57; Matthew Tugby: What are Dispositional Properties? 75; Mark Jago: Essence and the Grounding Problem 99; Nicholas K. Jones: Object as a Determinable 121; Sonia Roca-Royes: Rethinking Origin Essentialism (for Artefacts) 152; Nathan Wildman: How (not) to be a Modalist About Essence 177; Index 197-200.

172.   Katzav, Joel. 2002. "Identity, Nature, and Ground." *Philosophical Topics* no. 30:167-187.
Abstract: "What does the qualitative identity of objects consist in? A standard response is that it consists in the possession of properties and relations. If all of an object's properties and relations are specified, all there is to be specified about its qualitative as opposed to its numerical identity will have been specified.
Another response adds that kinds, conceived of as an irreducible category of entity, also play a part in fixing the qualitative identities of objects.
In what follows, two arguments are offered according to which these views are insufficient. Both lead to the conclusion that the qualitative identities of objects consist in part in their natures being grounded in what differs from entities, that is to say in something like conditions for the possibility of entities.
The idea of such grounding will be clarified, and some of the criteria of adequacy for theses about it will be spelled out. Further, the implications of the claim that the natures of objects are grounded for the problems of the one and the many will be discussed."

173.   Khudairi, Hasen. 2018. "Grounding, Conceivability, and the Mind-Body Problem." *Synthese* no. 195:919-926.
Abstract: "This paper challenges the soundness of the two-dimensional conceivability argument against the derivation of phenomenal truths from physical truths (cf. Chalmers in *The conscious mind* , Oxford University Press, Oxford, 1996; *The character of consciousness* , Oxford University Press, Oxford, 2010) in light of a hyperintensional regimentation of the ontology of consciousness. The regimentation demonstrates how ontological dependencies between truths about consciousness and about physics cannot be witnessed by epistemic constraints,

when the latter are recorded by the conceivability—i.e., the epistemic possibility—thereof. Generalizations and other aspects of the philosophical significance of the hyperintensional regimentation are further examined."

174.   Kirchin, Simon. 2013. "Evaluation, Normativity and Grounding." *Aristotelian Society Supplementary Volume* no. 87:179-198.
Abstract: "I consider the 'normative relevance' argument and the idea of grounding. I diagnose why there appears to be a tension between the conclusion that we are tempted to reach and the intuition that the normative is grounded in or by the non-normative. Much of what I say turns on the idea of the normative itself. In short, I think that concentrating on this idea can help us see how the tension arises. My aim is to encourage people to reconceptualize the debate so as to begin to offer additional insight. To that end, I spend some time contrasting normativity with evaluation, and then think how the debate may alter if we run it with the latter. I doubt that doing so will solve any problem, and I suspect that what I say will be controversial anyway.
But there is some value to changing matters nonetheless. The idea that runs through this paper is that the whole issue is so complex and deep that we should not narrowly construe it with reference only to normativity."

175.   Kment, Boris. 2014. *Modality and Explanatory Reasoning* . New York: Oxford University Press.
"The goal of this book is to shed light on metaphysical necessity and the broader class of modal properties to which it belongs."
(...)
I will argue that to understand modality we need to reconceptualize its relationship to causation and other forms of explanation such as grounding, a relation that connects metaphysically fundamental facts to non-fundamental ones. While many philosophers have tried to give modal analyses of causation and explanation, often in counterfactual terms, I will argue that we obtain a more plausible, explanatorily powerful and unified theory if we regard explanation as more fundamental than modality." (p. 1)

176.   ———. 2021. "Russell–Myhill and Grounding." *Analysis* .
First online 1 October 2021.
Abstract: "The Russell-Myhill paradox (RMP) puts pressure on the Russellian structured view of propositions (structurism) by showing that it conflicts with certain prima facie attractive ontological and logical principles. I describe several versions of RMP and argue that structurists can appeal to natural assumptions about metaphysical grounding to provide independent reasons for rejecting the ontological principles used in these paradoxes. It remains a task for future work to extend this grounding-based approach to all variants of RMP."

177.   Koons, Robert C., and Pickavance, Timothy H. 2017. *The Atlas of Reality: A Comprehensive Guide to Metaphysics* . Malden: Wiley Blackwell.
Chapter 3: *Grounding, Ontological Dependence, and Fundamentality* , pp. 47-73.

178.   Korbmacher, Johannes. 2015. "Yet Another Puzzle of Ground." *Kriterion - Journal of Philosophy* no. 29:1-10.
Abstract: "We show that any predicational theory of partial ground that extends a standard theory of syntax and that proves some commonly accepted principles for partial ground is inconsistent.
We suggest a way to obtain a consistent predicational theory of ground."

179.   ———. 2018. "Axiomatic Theories of Partial Ground I: The Base Theory." *Journal of Philosophical Logic* no. 47:161-191.
Abstract: "This is part one of a two-part paper, in which we develop an axiomatic theory of the relation of partial ground. The main novelty of the paper is the of use of a binary ground predicate rather than an operator to formalize ground. This allows us to connect theories of partial ground with axiomatic theories of truth. In this part of the paper, we develop an axiomatization of the relation of partial ground

over the truths of arithmetic and show that the theory is a proof-theoretically conservative extension of the theory PT of positive truth. We construct models for the theory and draw some conclusions for the semantics of conceptualist ground."

180.   ———. 2018. "Axiomatic Theories of Partial Ground II: Partial Ground and Hierarchies of Typed Truth." *Journal of Philosophical Logic* no. 47:193-226.
Abstract: "This is part two of a two-part paper in which we develop an axiomatic theory of the relation of partial ground. The main novelty of the paper is the of use of a binary ground predicate rather than an operator to formalize ground. In this part of the paper, we extend the base theory of the first part of the paper with hierarchically typed truth-predicates and principles about the interaction of partial ground and truth.
We show that our theory is a proof-theoretically conservative extension of the ramified theory of positive truth up to ε_0 and thus is consistent. We argue that this theory provides a natural solution to Fine's "puzzle of ground" about the interaction of truth and ground. Finally, we show that if we apply the truth-predicate to sentences involving our ground-predicate, we run into paradoxes similar to the semantic paradoxes: we get ground-theoretical paradoxes of self-reference."

181.   Koslicki, Kathrin. 2015. "The Coarse-Grainedness of Grounding." *Oxford Studies in Metaphysics* no. 9:306-344.
"At least with respect to its formal properties, then, grounding does appear to hold more promise than supervenience for the purposes of developing an approach to relative fundamentality, if only because grounding is commonly stipulated to be asymmetric and not definable in modal terms. However, aswe will discover below, grounding nevertheless suffers from some of same deficiencies as supervenience: most prominently, grounding also fails to be sufficiently finegrained to do its intended explanatory work. In addition, there is doubt as to whether the phenomena collected together under the rubric of grounding are really unified by the presence of a single relation.
And, finally, grounding turns out not to be particularly helpful in capturing and illuminating what is philosophically important about the traditional substance/non-substance distinction. In the end, we will find that, although grounding performs better than supervenience in some ways, it does not solve all of the problems to which a supervenience-based approach to relative fundamentality falls prey." (p. 309)

182.   ———. 2016. "Where Grounding and Causation Part Ways: Comments on Schaffer." *Philosophical Studies* no. 173:101-112.
Abstract: "Does the notion of ground, as it has recently been employed by metaphysicians, point to a single unified phenomenon (the ''Unity Hypothesis'')? Jonathan Schaffer holds that the phenomenon of grounding exhibits the unity characteristic of a single genus. In defense of this hypothesis, Schaffer proposes to take seriously the analogy between causation and grounding. More specifically,Schaffer argues that both grounding and causation are best approached through a single formalism, viz., that utilized by structural equation models of causation. In this paper, I present several concerns which suggest that the structural equation model does not transfer as smoothly from the case of causation to the case ofgrounding as Schaffer would have us believe. If it can in fact be shown that significant differences surface in how the formalism in question applies to the two types of phenomena in question, Schaffer's attempt at establishing an analogy between grounding and causation has thereby been weakened and, as a result, the application of the Unity Hypothesis to the case of grounding once again stands in need of justification."

183.   ———. 2020. "Skeptical Doubts." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 164-179. New York: Routledge.
"What exactly are we supposed to learn from the grounding enthusiast's alleged insight that factual and/or nonfactual connections such as those cited in (1) and (2) are all grounding connections? In what follows, I shall refer to this as "the Central

Question". *Grounding skeptics* (also known as "ground busters", see Fine 2020), depending on the version of grounding skepticism they endorse, respond to the Central Question as follows: either (i) we learn nothing at all from the grounding enthusiast's alleged insight; or (ii) what we learn from the grounding enthusiast's alleged insight can be better stated in terms that do not appeal to the grounding idiom. In either case, so the grounding skeptic reasons, the grounding idiom lacks theoretical utility, and we therefore might as well continue to go about the business of trying to clarify the nature of the factual and/or nonfactual connections at issue without appeal to the grounding idiom." (p. 165, a note omitted)
References
Fine, Kit (2020) "The Essential Glossary of Ground," this volume.

184.   Kovacs, David Mark. 2017. "Grounding and the Argument from Explanatoriness." *Philosophical Studies* no. 174:2927-2952.
Abstract: "In recent years, metaphysics has undergone what some describe as a revolution: it has become standard to understand a vast array of questions as questions about grounding, a metaphysical notion of determination. Why should we believe in grounding, though? Supporters of the revolution often gesture at what I call the *Argument from Explanatoriness* : the notion of grounding is somehow indispensable to a metaphysical type of explanation. I challenge this argument and along the way develop a ''reactionary'' view, according to which there is no interesting sense in which the notion of grounding is explanatorily indispensable. I begin with a distinction between two conceptions of grounding, a distinction which extant critiques of the revolution have usually failed to take into consideration: grounding *qua* that which underlies metaphysical explanation and grounding *qua* metaphysical explanation itself. Accordingly, I distinguish between two versions of the Argument from Explanatoriness: the Unexplained Explanations Version for the first conception of grounding, and the Expressive Power Version for the second. The paper's conclusion is that no version of the Argument from Explanatoriness is successful."

185.   ———. 2018. "What Is Wrong with Self-Grounding?" *Erkenntnis* no. 83:1157-1180.
Abstract: "Many philosophers embrace grounding, supposedly a central notion of metaphysics. Grounding is widely assumed to be irreflexive, but recently a number of authors have questioned this assumption: according to them, it is at least possible that some facts ground themselves. The primary purpose of this paper is to problematize the notion of self-grounding through the theoretical roles usually assigned to grounding. The literature typically characterizes grounding as at least playing two central theoretical roles: a structuring role and an explanatory role. Once we carefully spell out what playing these roles includes, however, we find that any notion of grounding that isn't irreflexive fails to play these roles when they are interpreted narrowly, and is redundant for playing them when they are interpreted more broadly.
The upshot is that no useful notion of grounding can allow a fact to ground itself."

186.   ———. 2020. "Four Questions of Iterated Grounding." *Philosophy and Phenomenological Research* no. 101:341-364.
Abstract: "The Question of Iterated Grounding (QIG) asks what grounds the grounding facts. Although the question received a lot of attention in the past few years, it is usually discussed independently of another important issue: the connection between metaphysical explanation and the relation or relations that supposedly "back" it. I will show that once we get clear on the distinction between metaphysical explanation and the relation(s) backing it, we can distinguish no fewer than four questions lumped under QIG. I will also argue that given some plausible assumptions about what it would take for a relation to back metaphysical explanation, many salient views about grounding allow us to give "easy" answers to these questions—easy in the sense that we can straightforwardly derive them from the respective conception of grounding without getting into the sorts of

complexities that typically inform answers to QIG. The paper's main upshot is that we cannot expect to make much progress on QIG without first addressing the difficult issue of how exactly grounding is related to metaphysical explanation."

187.　———. 2020. "Modality." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 348-360. New York: Routledge.
"How is grounding related to modality? This question is ambiguous, since several phenomena fit under the broad label 'modality'. First, we could ask whether grounds necessitate what they ground ('Grounding Necessitarianism'). Second, we could ask whether grounding is an internal relation, i.e., whether in every possible world in which some fact and its grounds obtain they automatically stand in the grounding relation.Third, we could ask how grounding is related to modal notions, in particular supervenience, which used to be assigned similar theoretical roles. Alex Skiles's contribution to this volume [Chapter 10] discusses the first and the second of these questions, and in the context of a broader discussion of meta-grounding, Jon Erling Litland [Chapter 9] also touches on the second; the present chapter will entirely focus on the relation between grounding and supervenience." (p. 348)

188.　———. 2021. "An Explanatory Idealist Theory of Grounding." *Noûs* .
First online 12 April 2021.
Abstract: "How is grounding related to metaphysical explanation? The standard view is that the former somehow "backs", "undergirds" or "underlies" the latter. This view fits into a general picture of explanation, according to which explanations in general hold in virtue of a certain elite group of "explanatory relations" or "determinative relations" that back them. This paper turns the standard view on its head: grounding doesn't "back" metaphysical explanation but is in an important sense downstream from it. I call this view "grounding idealism", since it structurally resembles an analogous view about causation that is known as "causal idealism" and has been endorsed by philosophers like Michael Scriven and Philip Kitcher. I formulate a specific version of grounding idealism, Metaphysical Explanation-First Idealism (MEFI), according to which the semantic value of 'grounding' is an abundant, gerrymandered relation settled by the metaphysical explanation facts. Then I offer some theoretical considerations that support MEFI over rival accounts of the relation between grounding and metaphysical explanation. Finally, I address the question of what role is left for grounding to play, if not that of "backing" metaphysical explanations."

189.　Krämer, Stephan. 2013. "A simpler puzzle of ground." *Thought: A Journal of Philosophy* no. 2:85-89.
Abstract: "Metaphysical grounding is standardly taken to be irreflexive: nothing grounds itself. Kit Fine has presented some puzzles that appear to contradict this principle. I construct a particularly simple variant of those puzzles that is independent of several of the assumptions required by Fine, instead employing quantification into sentence position. Various possible responses to Fine's puzzles thus turn out to apply only in a restricted range of cases."

190.　———. 2019. "Ground-theoretic Equivalence." *Synthese* no. 198:1643-1683.
Abstract: "Say that two sentences are ground-theoretically equivalent iff they are interchangeable salva veritate in grounding contexts. Notoriously, ground-theoretic equivalence is a hyperintensional matter: even logically equivalent sentences may fail to be interchangeable in grounding contexts. Still, there seem to be some substantive, general principles of ground-theoretic equivalence. For example, it seems plausible hat any sentences of the form $A \land B$ and $B \land A$ are ground-theoretically equivalent. What, then, are in general the conditions for two sentences to stand in the relation of ground-theoretic equivalence, and what are the logical features of that relation? This paper develops and defends an answer to these questions based on the mode-ified truthmaker theory of content presented in my recent paper 'Towards a theory of ground-theoretic content' (Krämer in *Synthese* 195(2):785–814, 2018)."

191.   ———. 2020. "Puzzles." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 271-282. New York: Routledge.
"This chapter reviews the variety of logical puzzles of ground that have been identified in the literature, describes the solutions that have been proposed, and indicates what the main challenges are that these solutions face. I begin by introducing relevant notation as well as the key concepts and principles that will subsequently be used in formulating the puzzles before turning to the puzzles themselves. In principle, there is a huge number of different derivations of contradictions from the relevant principles about ground. Many of them are essentially alike, so that any reasonable solution to one will immediately provide a solution to the other. Some of them exhibit more substantial differences, however, and I shall try to describe all the substantially different types of puzzles. I then briefly discuss what desiderata we might impose on adequate solutions to the puzzles before I finally turn to the solutions themselves. Many of these, once developed in detail, involve a fair bit of formal machinery. I shall mainly attempt to convey the basic philosophical ideas underlying and motivating the technical work; readers keen on the details will have to consult the primary texts." (p. 271)

192.   Krämer, Stephan, and Roski, Stefan. 2015. "A Note on the Logic of Worldly Ground." *Thought: A Journal of Philosophy* no. 4:59-68.
Abstract: "In his 2010 paper 'Grounding and Truth-Functions', Fabrice Correia has developed the first and so far only proposal for a logic of ground based on a worldly conception of facts. In this paper, we show that the logic allows the derivation of implausible grounding claims.We then generalize these results and draw some conclusions concerning the structural features of ground and its associated notion of relevance, which has so far not received the attention it deserves."
References
Correia, Fabrice. "Grounding and Truth-Functions." *Logique et Analyse* 53.211 (2010): 251–79.

193.   Kroedel, Thomas, and Schulz, Moritz. 2016. "Grounding Mental Causation." *Synthese* no. 193:1909-1923.
Abstract: "This paper argues that the exclusion problem for mental causation can be solved by a variant of non-reductive physicalism that takes the mental not merely to supervene on, but to be grounded in, the physical.Agrounding relation between events can be used to establish a principle that links the causal relations of grounded events to those of grounding events. Given this principle, mental events and their physical grounds either do not count as overdetermining physical effects, or they do so in a way that is not objectionable."

194.   Lange, Marc. 2013. "Grounding, Scientific Explanation, and Humean Laws." *Philosophical Studies* no. 164:255-261.
Abstract: "It has often been argued that Humean accounts of natural law cannot account for the role played by laws in scientific explanations. Loewer (*Philosophical Studies* 2012) has offered a new reply to this argument on behalf of Humean accounts—a reply that distinguishes between grounding (which Loewer portrays as underwriting a kind of metaphysical explanation) and scientific explanation. I will argue that Loewer's reply fails because it cannot accommodate the relation between metaphysical and scientific explanation. This relation also resolves a puzzle about scientific explanation that Hempel and Oppenheim (*Philosophy of Science* 15:135–75, 1948) encountered."
References
Hempel, C. G., & Oppenheim, P. (1948). Studies in the logic of explanation. *Philosophy of Science* , 15, 135–175.
Loewer, B. (2012). Two accounts of laws and time. *Philosophical Studies* , 160(1): 115-137.

195.   ———. 2019. "Ground and Explanation in Mathematics." *Philosopher's Imprint* no. 19:1-18.

"Increased attention has recently been paid to the fact that in mathematical practice, certain mathematical proofs but not others are recognized as explaining why the theorems they prove obtain (Mancosu 2008; Lange 2010, 2015a, 2016; Pincock 2015). Such "mathematical explanation" is presumably not a variety of causal explanation. In addition, the role of metaphysical grounding as underwriting a variety of explanations has also recently received increased attention (Correia and Schnieder 2012; Fine 2001, 2012; Rosen 2010; Schaffer 2016). Accordingly, it is natural to wonder whether mathematical explanation is a variety of grounding explanation. This paper will offer several arguments that it is not." (p. 1)

References

Correia, Fabrice and Benjamin Schnieder 2012. Grounding: An opinioned introduction. In Correia and Schnieder (eds.), *Metaphysical Grounding* . Cambridge: Cambridge University Press, pp. 1−36.

Fine, Kit 2001. The question of realism. Philosophers' Imprint 1 (2): 1−30.

Fine, Kit 2012. Guide to ground. In Correia and Schnieder (eds.), *Metaphysical Grounding* . Cambridge: Cambridge University Press, pp. 37–80.

Lange, Marc 2010. What are mathematical coincidences (and why does it matter)? Mind 119 (474): 307-340.

Lange, Marc 2015a. Explanation, existence, and natural properties in mathematics: a case study – Desargues' theorem. Dialectica 69 (4): 435−472.

Lange, Marc 2016. Because Without Cause. New York: Oxford University Press.

Mancosu, Paolo 2008. Mathematical explanation: why it matters. In Mancosu (ed.), The Philosophy of Mathematical Practice. Oxford: Oxford University Press, pp. 134−150.

Pincock, Christopher 2015. The unsolvability of the quintic: A case study in abstract mathematical explanation. Philosophers' Imprint 15 (3): 1−19.

Rosen, Gideon 2010. Metaphysical dependence: Grounding and reduction. In Bob Hale and Aviv Hoffman (eds.), Modality: Metaphysics, Logic, and Epistemology. Oxford: Oxford University Press, pp. 109−136.

Schaffer, Jonathan 2016. Grounding in the image of causation. Philosophical Studies 173 (1): 49–100.

196.   Langton, Rae. 2018. "'Real Grounds' in Matter and Things in Themselves." *Kantian Review* no. 23:435-448.

Abstract: "Matter's real essence is a ground for certain features of phenomena. Things in themselves are likewise a ground for certain features of phenomena. How do these claims relate? The former is a causal essentialism about physics, Stang argues; and the features so grounded are phenomenally nomically necessary. The latter involves a distinctive ontology of things in themselves, I argue; but the features so grounded are not noumenally nomically necessary. Stang's version of Kant's modal metaphysics is admirable, but does not go far enough. Kant's causal essentialism involves the essences of fundamental properties, as well as of matter. And things in themselves are grounds, because they are substances, the 'substrate' of phenomena."

References

Stang, Nicholas F. (2016) *Kant's Modal Metaphysics* . Oxford: Oxford University Press.

197.   Larsson, Staffan. 2018. "Grounding as a Side-Effect of Grounding." *Topics in Cognitive Science* no. 10:389-408.

Abstract: "In relation to semantics, "grounding" has (at least) two relevant meanings. "Symbol grounding" is the process of connecting symbols (e.g., words) to perception and the world. "Communicative grounding" is the process of interactively adding to common ground in dialog. Strategies for grounding in human communication include, crucially, strategies for resolving troubles caused by various kinds of miscommunication. As it happens, these two processes of grounding are closely related. As a side-effect of grounding an utterance, dialog participants (DPs) may adjust the meanings they assign to linguistic expressions, in a process of semantic coordination.

Meanings of at least some expressions (e.g., concrete nouns) include perceptual aspects which enable DPs to classify entities as falling under the expression or not based on their perception of those entities. We show how perceptual grounding of symbols can be achieved in a process of interactively adding to common ground. This requires that perceptual aspects of meaning can be updated as a result of participating in linguistic interaction, thereby enabling fine-grained semantic coordination of perceptually grounded linguistic meanings.

A formal semantics for low-level perceptual aspects of meaning is presented, tying these together with the logical-inferential aspects of meaning traditionally studied in formal semantics. The key idea is to model perceptual meanings as classifiers of perceptual input. This requires a framework where intensions are (a) represented independently of extensions, and (b) structured objects which can be modified as a result of learning. We use Type Theory with Records (TTR), a formal semantics framework which starts from the idea that information and meaning are founded on our ability to perceive and classify the world, that is, to perceive objects and situations as being of types. As an example of our approach, we show how a simple classifier of spatial information based on the Perceptron can be cast in TTR."

198.   Leary, Stephanie. 2017. "Non-naturalism and Normative Necessities." *Oxford Studies in Metaethics* no. 12:76-105.
"My aim in this chapter, however, is to show that non-naturalists can offer a metaphysical explanation for why the normative supervenes on the natural by adopting the sort of essentialist metaphysics developed by Fine, Rosen, and Dasgupta.(5) Specifically, I argue (in §4.4) that the non-naturalist may claim that there are some hybrid normative properties whose essences involve both naturalistic sufficient conditions for their instantiation and sufficient conditions for the instantiation of other sui generis normative properties, and that this explains why the normative is determined by, and supervenes on, the natural. Moreover, I argue (in §4.5) that this nonnaturalist explanation for supervenience does not covertly assume any brute metaphysically necessary connections between natural and normative properties, and thus avoids what McPherson calls "bruteness revenge."6" (p. 77)
(5) 5 Fine (1994a, 2012), Rosen (2010), and Dasgupta (2014).
(6) McPherson (2012).
References
Dasgupta, S. 2014. "The Possibility of Physicalism," *Journal of Philosophy* , 111(9/10): 557–92.
Fine, K. 1994a. "Essence and Modality," *Philosophical Perspectives* , 8: 1–16.
Fine, K. 2012. "Guide to Ground," in F. Correia and B. Schnieder (eds.), *Metaphysical Grounding,* 37–80. Cambridge: Cambridge University Press.
McPherson, T. 2012. "Ethical Non-naturalism and the Metaphysics of Supervenience," in R. Shafer-Landau (ed.), *Oxford Studies in Metaethics* , 7, 205–34. Oxford: Oxford University Press.
Rosen, G. 2010. "Metaphysical Dependence: Grounding and Reduction," in B. Hale and A. Hoffmann (eds.), *Modality: Metaphysics, Logic, and Epistemology* , 109–36. New York: Oxford University Press.

199.   ———. 2020. "Normativity." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 472-483. New York: Routledge.
"One of the ways in which grounding earns its keep as a respectable bit of ideology is by being useful for understanding long-standing philosophical debates, including debates in normative ethics and metaethics. (...)
But this common story about grounding's applications in normative inquiry is rife with controversy. First, even if normative ethicists are in the business of making because-claims, it's controversial whether these because-claims are about *metaphysical grounding* or a related but distinctly normative relation—*normative grounding* .
Second, this grounding characterization of the naturalism versus non-naturalism debate begins to look problematic once we ask whether on this characterization, for

example, the fact that an act's maximizing happiness fully grounds that it's right is itself a normative fact that must be fully grounded in natural, non-normative facts in order for naturalism to be true.Very general metaphysical considerations suggest that such grounding-facts cannot be so grounded.

(...)

This chapter surveys these two main issues in §2 and §3, respectively, while highlighting what's at stake in these disputes for both normative and metaphysical theorizing." (p. 472)

200. Lenart, Karol. 2021. "Grounding, Essence, and Contingentism." *Philosophia* no. 49:2157-2172.

Abstract: "According to grounding necessitarianism if some facts ground another fact, then the obtaining of the former necessitates the latter. Proponents of grounding contingentism argue against this claim, stating that it is possible for the former facts to obtain without necessitating the latter. In this article I discuss a recent argument from restricted accidental generalisations provided by contingentists that advances such possibility. I argue that grounding necessitarianism can be defended against it. To achieve this aim, I postulate a relationship between grounding and essence by introducing a notion of individual essences understood as a set of essential properties that individuate its bearer. According to a proposed view grounding holds in virtue of identities of its relata, which are in turn determined by their respective individual essences. From there I claim that if grounding holds in virtue of the individual essences of its relata, then it is possible to resist the objection from restricted accidental generalisations and maintain a view that grounds necessitates what is grounded."

201. Lennox, James G. 2021. "Form as Cause and the Formal Cause: Aristotle's Answer." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 225-237. New York: Routledge.

"Introduction: The primary focus of this paper is a distinction of vital importance in understanding causality in the context of Aristotle's investigation of organisms. Aristotle insists that the form of a living being, that is, its soul (*psyche*), is a cause in three of the four ways of being a cause (DA [*De anima*] 11.4, 41568-21, discussed below). This claim has two important implications:

• Being a formal cause is only one way in which form is a cause

• It turns out that there is an intimate relationship in Aristotle's natural philosophy between the formal cause, the moving cause, and the cause for the sake of which (aka the final cause), and this has a direct implication for Aristotle's understanding of the way in which an animal's soul, that is, its form, serves as the cause of its being the kind of living thing it is.

As we will soon see, when it comes to living beings, the relationship between form as formal cause and form as final cause is an especially intimate one." (p. 225)

202. Leuenberger, Stephan. 2013. "Supervenience Among Classes of Relations." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 325-346. Munich: Philosophia Verlag.

"Whatever the exact relationship between supervenience and reducibility, the question whether some relations are reducible to properties naturally leads to the question whether the former supervene on the latter. What would it take for relations to supervene on properties?

The extant literature does not contain a sustained and systematic examination of this question, at least as far as I am aware. This is surprising, given that a great deal of work has been done on distinguishing various concepts of supervenience, supplying exact characterizations for them, and finding applications. It is even more surprising in light of the fact that the concept of supervenience is eminently suitable to be applied to relations, as I shall argue." (pp. 327-328)

203. ———. 2014. "Grounding and Necessity." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 57:151-174.

Abstract: "The elucidations and regimentations of grounding offered in the literature standardly take it to be a necessary connection. In particular, authors often assert, or at least assume, that if some facts ground another fact, then the obtaining of the former necessitates the latter; and moreover, that grounding is an internal relation, in the sense of being necessitated by the existence of the relata. In this article, I challenge the necessitarian orthodoxy about grounding by offering two prima facie counterexamples.

First, some physical facts may ground a certain phenomenal fact without necessitating it; and they may co-exist with the latter without grounding it. Second, some instantiations of categorical properties may ground the instantiation of a dispositional one without necessitating it; and they may co-exist without grounding it. After arguing that these may be genuine counterexamples, I ask whether there are modal constraints on grounding that are not threatened by them. I propose two: that grounding supervenes on what facts there are, and that every grounded fact supervenes on what grounds there are. Finally, I attempt to provide a rigorous formulation of the latter supervenience claim and discuss some technical questions that arise if we allow descending grounding chains of transfinite length."

204.　　　———. 2014. "From Grounding to Supervenience?" *Erkenntnis* no. 79:227-240.
Abstract: "The concept of supervenience and a regimented concept of grounding are often taken to provide rival explications of pre-theoretical concepts of dependence and determination. Friends of grounding typically point out that supervenience claims do not entail corresponding grounding claims. Every fact supervenes on itself, but is not grounded in itself, and the fact that a thing exists supervenes on the fact that its singleton exists, but is not grounded in it. Common lore has it, though, that grounding claims do entail corresponding supervenience claims. In this article, I show that this assumption is problematic. On one way of understanding it, the corresponding supervenience claim is just an entailment claim under a different name. On another way of understanding it, the corresponding claim is a distinctive supervenience claim, but its specification gives rise to what I call the ''reference type problem'': to associate the classes of facts that are the relata of grounding with the types of facts that are the relata of supervenience. However it is understood, supervenience rules out prima facie possibilities: alien realizers, blockers, heterogeneous realizers, floaters, and heterogeneous blockers. Instead of being rival explications of one and the same pre-theoretical concept, grounding and supervenience may be complementary concepts capturing different aspects of determination and dependence."

205.　　　———. 2020. "Emergence." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 312-323. New York: Routledge.
"Grounding is taken to be topic neutral, and contributors tend to be interested in general and noncontingent claims about it.
(...)
The literature on emergence is strikingly different on all those counts. It is dispersed over a number of subdisciplines of philosophy, with different intellectual traditions, notably philosophy of mind, philosophy of science, and to a lesser extent metaphysics. Indeed, collections on emergence (e.g., Bedau and Humphreys (2008); Clayton and Davies (2006)) tend to cast the net even wider and include contributions from various natural and social sciences, as well as speculative proposals from the margins of mainstream science.Accordingly, the literature is highly heterogeneous.This means that whatever generalizations I am about to offer on the literature should be taken with a grain of salt." (p. 312)
References
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Clayton, P. and Davies, P. (2006). *The Re-Emergence of Emergence:The Emergentist Hypothesis from Science to Religion* . Oxford University Press, Oxford.

206. Liggins, David. 2012. "Truth-makers and Dependence." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 254-271. Cambridge: Cambridge University Press.
"This chapter discusses the significance of non-causal dependence for truth-maker theory. After introducing truth-maker theory (Section 10.1), I discuss a challenge to it levelled by Benjamin Schnieder. I argue that Schnieder's challenge can be met once we acknowledge the existence of non-causal dependence and of explanations which rely on it (Sections 10.2 to 10.5). I then mount my own argument against truth-maker theory, based on the notion of non-causal dependence (Sections 10.6 and 10.7)." (p. 254)
References
Schnieder, B. 2006. 'Truth-Making Without Truth-Makers', *Synthese* 152: 21–46

207. ———. 2016. "Grounding and the Indispensability Argument." *Synthese* no. 193:531-548.
Abstract: "There has been much discussion of the indispensability argument for the existence of mathematical objects. In this paper I reconsider the debate by using the notion of grounding, or non-causal dependence. First of all, I investigate what proponents of the indispensability argument should say about the grounding of relations between physical objects and mathematical ones. This reveals some resources which nominalists are entitled to use. Making use of these resources, I present a neglected but promising response to the indispensability argument—a liberalized version of Field's response—and I discuss its significance. I argue that if it succeeds, it provides a new refutation of the indispensability argument; and that, even if it fails, its failure may bolster some of the fictionalist responses to the indispensability argument already under discussion. In addition, I use grounding to reply to a recent challenge to these responses."

208. Litland, Jon Erling. 2011. Natural Deduction for Logics of Ground.
Available on academia.edu.
Abstract: "I develop two logics (pplg and pnlg) of grounding which can deal with iterated grounding claims. The logics are developed in natural deduction form and the grounding operators are equipped with both introduction and elimination rules. I prove normalization results for pplg and pnlg and determine their relationship to Fine's Pure Logic of Ground."

209. ———. 2013. "On Some Counterexamples to the Transitivity of Grounding." *Essays in Philosophy* no. 14:19-32.
Abstract: "I discuss three recent counterexamples to the transitivity of grounding due to Jonathan Schaffer. I argue that the counterexamples don't work and draw some conclusions about the relationship between grounding and explanation."
References
Schaffer, Jonathan (2012). "Grounding, Transitivity, and Contrastivity". In: *Metaphysical Grounding* . Ed. by Fabrice Correia and Benjamin Schnieder. Cambridge University Press. Chap. 4, pp. 122–138

210. ———. 2015. "Grounding, Explanation, and the Limit of Internality." *The Philosophical Review* no. 124:481-532.
"For the reader's benefit, here's an overview of the essay. In section 2, I introduce terminology and notation. In section 3, I explain what I mean by the thesis that grounding is internal. In section 4, I lay down the assumptions about ground that generate the problem for internality; in section 5, I present the counterexample; and in section 6, I defend it against a variety of objections. This concludes the negative part of the essay.
Moving on to the positive part of the essay, I link grounding with the notion of a "completely satisfactory explanation" (section 7).
(...)
On either alternative, we obtain a satisfactory logic of ground in settings where we have self-reference, and we can establish the conjecture of the previous section. After concluding (section 9), two technical appendixes establish some claims baldly

asserted in the main text: appendix A shows how supervaluationism can be satisfactorily combined with a theory of ground, and appendix B works through the technical details of the account of ground in terms of completely satisfactory explanation." (pp. 482-483)

211.   ———. 2016. "An Infinitely Descending Chain of Ground Without a Lower Bound." *Philosophical Studies* no. 173:1361-1369.
Abstract: "Using only uncontentious principles from the logic of ground I construct an infinitely descending chain of ground without a lower bound. I then compare the construction to the constructions due to Dixon (forthcoming [2016]) and Rabin and Rabern (J Philos Log, 2015)."
References
Dixon, T. S. (2016). What is the well-foundedness of grounding? *Mind* . 125, 439-468.
Rabin, G. O., & Rabern, B. (2015). Well-founding grounding grounding. *Journal of Philosophical Logic*

212.   ———. 2016. "Pure Logic of Many-Many Ground." *Journal of Philosophical Logic* no. 45:531-577.
Abstract: "A logic of grounding where what is grounded can be a collection of truths is a "many-many" logic of ground. The idea that grounding might be irreducibly many-many has recently been suggested by Dasgupta (2014). In this paper I present a range of novel philosophical and logical reasons for being interested in many-many logics of ground. I then show how Fine's State-Space semantics for the Pure Logic of Ground (PLG) can be extended to the many-many case, giving rise to the Pure Logic of Many-Many Ground (PLMMG). In the second, more technical, part of the paper, I do two things. First, I present an alternative formalization of PLG; this allows us to simplify Fine's completeness proof for PLG. Second, I formalize PLMMG using an infinitary sequent calculus and prove that this formalization is sound and complete."

213.   ———. 2017. "Grounding Ground." In *Oxford Studies in Metaphysics: Vol. 10* , edited by Bennett, Karen and Zimmermann, Dean W, 279-315. New York: Oxford University Press.
"If Γ's being the case grounds ϕ's being the case, what grounds that Γ's being the case grounds ϕ's being the case?1 This is the Problem of Iterated Ground.(1) Dasgupta (2014b), Bennett (2011), and deRosset (2013) have grappled with this problem from the point of view of metaphysics. But iterated ground is a problem not just for metaphysicians: the existing logics of ground(2) have had nothing to say about such iterated grounding claims. In this paper I propose a novel account of iterated ground and develop a logic of iterated ground. The account—what I will call the Zero-Grounding Account (ZGA for short)—is based on three mutually supporting ideas: (i) taking non-factive ground as a primitive notion of ground; (ii) tying nonfactive ground to explanatory arguments; and (iii) holding that true non-factive grounding claims are zero-grounded (in Fine's sense)." (p. 279)
(1) Here Γ are some (true) propositions and ϕ is a (true) proposition. For the official formulation of claims of ground, see § 2 below. In the interest of readability I will not distinguish carefully between use and mention throughout.
(2) Fine 2012b; Correia 2010, 2014; Schnieder 2011; Poggiolesi 2015.
References
Bennett, K. (2011). "By Our Bootstraps." *Philosophical Perspectives* 25.1, pp. 27–41.
Correia, Fabrice (2010). "Grounding and Truth-functions." *Logique et Analyse* 53.211, pp. 251–79.
Correia, Fabrice (2014). "Logical Grounds." *Review of Symbolic Logic* 7.1, pp. 31–59.
Fine, Kit (2012b). "The Pure Logic of Ground." *Review of Symbolic Logic* 5.1, pp. 1–25.

Dasgupta, Shamik (2014b). "The Possibility of Physicalism." *Journal of Philosophy* 111.9/10, pp. 557–92.

deRosset, Louis (2013). "Grounding Explanations." *Philosophers' Imprint* 13.7, pp. 1–26.

Poggiolesi, Francesca (2015). "On Defining the Notion of Complete and Immediate Formal Grounding." *Synthese* , pp. 1–21.

Schnieder, Benjamin (2011). "A Logic for 'Because'." *Review of Symbolic Logic* 4.3, pp. 445–65.

214.   ———. 2018. "Could the Grounds's Grounding the Grounded Ground the Grounded?" *Analysis* no. 78:56-65.

Abstract: "The answer to the opening question is 'yes': it follows from standard principles in the logic of ground that that there are facts φ and ψ such that φ's partially grounding ψ partially grounds ψ. This might seem like a mere curiosity, but it has important consequences for the following hotly debated issue. Suppose that the fact φ grounds the fact ψ; then this – that φ grounds ψ – is a further fact, and we may ask what grounds it. (This is the Problem of Grounding Ground.) Most philosophers who have addressed it have held that φ is at least a partial ground for φ's grounding ψ. Unfortunately, this, together with standard principles in the logic of ground, entails that the answer to the opening question is 'no'. Standard and plausible principles about ground are thus inconsistent; moreover, this inconsistency turns on different principles than the inconsistencies unearthed by Fine (2010) and Krämer (2013). In particular, the principle of Amalgamation – that if each of φ and φ is a ground for θ then φ together with φ is a ground for θ – plays a role in generating the inconsistency.
In this article, I establish the above claims and, tentatively, argue that we resolve the inconsistency by giving up Amalgamation, thus clearing the way for φ's grounding ψ's grounding ψ."

References

Fine, K. 2010. Some puzzles of ground. *Notre Dame Jorunal of Formal Logic* 51: 97–118.

Krämer, S. 2013. A simpler puzzle of ground. *Thought* 2: 85–9.

215.   ———. 2018. "In Defense of the (Moderate) Disunity of Grounding." *Thought: A Journal of Philosophy* no. 7:97-108.

Abstract: "Fine (2012) is a pluralist about grounding. He holds that there are three fundamentally distinct notions of grounding: metaphysical, normative, and natural. Berker (2017) argues for monism on the grounds that the pluralist cannot account for certain principles describing how the distinct notions of grounding interact. This paper defends pluralism. By building on work by Fine (2010) and Litland (2015) I show how the pluralist can systematically account for Berker's interaction principles.
A monist about grounding holds that there is a single fundamental grounding relation; a pluralist holds that there are several fundamentally distinct grounding relations. In this paper I do two things. First, I defend the moderate pluralism of Fine (2012) from two challenges recently presented by Berker (2017). Second, I show that the pluralist's most basic grounding relations are not asymmetric." (A note omitted)

References

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Fine, Kit. "Some Puzzles of Ground." *Notre Dame Journal of Formal Logic* 51.1 (2010): 97–118.

Fine, Kit. "Guide to Ground," in *Metaphysical Grounding* , edited by Fabrice Correia and Benjamin Schnieder. Cambridge: Cambridge University Press, 2012, 37–80 Ch. 1.

Litland, Jon Erling. "Grounding, Explanation, and the Limit of Internality." *Philosophical Review* 124.4 (2015): 481–532.

216. ———. 2018. "Pure Logic of Iterated Full Ground." *The Review of Symbolic Logic* no. 11:411-435.
Abstract: "This article develops the Pure Logic of Iterated Full Ground (PLIFG), a logic of ground that can deal with claims of the form "φ grounds that (ψ grounds θ)"—what we call iterated grounding claims. The core idea is that some truths ground a truth φ when there is an explanatory argument (of a certain sort) from premises to conclusion φ. By developing a deductive system that distinguishes between explanatory and nonexplanatory arguments we can give introduction rules for operators for factive and nonfactive full ground, as well as for a propositional "identity" connective.
Elimination rules are then found by using a proof-theoretic inversion principle."

217. ———. 2018. "Bicollective Ground: Towards a (Hyper)graphic Account." In *Reality and Its Structure: Essays in Fundamentality* , edited by Bliss, Ricki and Priest, Graham, 140-163. Oxford: Oxford University Press.
"Overview: We begin in §2 by introducing the central notion of immediate strict full ground.
In §3 we develop some ways of making sense of the characteristic non-distributivity of bicollective ground and argue that mathematical structuralists should avail themselves of bicollective ground. In §4 we rehearse the truthmaker semantics for bicollective ground and point out some problems that arise in the bicollective case. In §5 we recall the graph-theoretic account for the left-collective case and argue against Fine's principle of Amalgamation. The main contribution of the paper comes in §6 where we develop the graph-theoretic account of bicollective ground. We discuss how to define acyclic graphs, mediate ground, the notions of partial ground, and what it is for two collections of truths to be ground-theoretically equivalent. We conclude with some questions for future research (§7)." (p. 141)

218. ———. 2020. "Meta-Ground." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 133-147. New York: Routledge.
"Suppose the facts Γ ground the fact ϕ .Then it is a fact that Γ grounds ϕ . And we may ask what grounds it. What is the answer? And what turns on this? This is the question of *meta-ground* , *grounding ground* , or *iterated ground* .
The goal of this chapter is to introduce the reader to the state of the debate about meta-ground and to indicate some areas for future research.Even though the problem of meta-ground is a fairly small piece of the larger literature on ground, it is impossible to cover everything. Since I want to indicate what I take to be the most interesting areas for future research, regrettably some subtleties in the existing views had to be suppressed." (p. 133, a note omitted)

219. Lopez de Sa, Dan. 2013. "Rigid vs. Flexible Response-Dependent Properties." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 393-417. Munich: Philosophia Verlag.
"According to a more or less traditional view of secondary qualities, they are-or would be-real though not fully objective features of external objects. Roughly speaking, they are real not only by being the significations of natural simple predicates which can be used to make predications that are, for the most part, truth-evaluable and sometimes true, but also by being exemplified independently of those representations.
Roughly speaking, they are *less than fully objective* in that it is essential for something having them that it bears a certain relation to subjective responses of ours, at least as we actually are.
Response-dependence was intended to generalize the notion of a secondary quality in that respect, by applying also to values in a way such that-at least a qualified form of-realism was vindicated. My view is that response-dependence, by itself, fails with respect to this project." (p. 393)

220. Loss, Roberto. 2015. "Grounds, Roots and Abysses." *Thought: A Journal of Philosophy* no. 4:41-52.

Abstract: "The aim of this study is to address the "Grounding Grounding Problem," that is, the question as to what, if anything, grounds facts about grounding. I aim to show that, if a seemingly plausible principle of modal recombination between fundamental facts and the principle customarily called "Entailment" are assumed, it is possible to prove not only that grounding facts featuring fundamental, contingent grounds are derivative but also that either they are (at least) partially grounded in the grounds they feature or they are "abysses" (i.e., derivative facts without fundamental grounds and lying at the top of an infinitely descending chain of ground)."

221.   ———. 2016. "Parts Ground the Whole and Are Identical to It." *Australasian Journal of Philosophy* no. 94:489-498.
Abstract: "What is the relation between parts taken together and the whole that they compose?
The recent literature appears to be dominated by two different answers to this question, which are normally thought of as being incompatible. According to the first, parts taken together are *identical* to the whole that they compose. According to the second, the whole is *grounded* in its parts. The aim of this paper is to make some theoretical room for the view according to which parts ground the whole they compose while being, at the same time, identical to it."

222.   ———. 2017. "Grounding, Contingency and Transitivity." *Ratio* no. 30:1-14.
Abstract: "Grounding contingentism is the doctrine according to which grounds are not guaranteed to necessitate what they ground.
In this paper I will argue that the most plausible version of contingentism (which I will label 'serious contingentism') is incompatible with the idea that the grounding relation is transitive, unless either 'priority monism' or 'contrastivism' are assumed."

223.   ———. 2019. "No Ground for Doomsday." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 62:1136-1156.
Abstract: "The ability of providing an adequate supervenience base for tensed truths may seem to be one of the main theoretical advantages of both the growing-block and the moving-spotlight theory of time over presentism. However, in this paper I will argue that some propositions appear to be as problematic for growing-block theorists as past-directed propositions are for presentists, namely propositions stating that nothing will be the case in the future.
Furthermore, I will show that the moving-spotlight theory can adequately address all the main supervenience challenges that can be levelled against A-theories of time. I will, thus, conclude that, at least as far as the supervenience principle is concerned, the moving-spotlight theory should be preferred over both presentism and the growing-block theory."

224.   Lovett, Adam. 2019. "A Simple Proof of Grounding Internality." *Thought: A Journal of Philosophy* no. 8:154-166.
Abstract: "Some people think that grounding is a type of identity. And some people think that grounding connections hold necessarily. I show that, under plausible assumptions, if grounding is a type of identity, then grounding connections hold necessarily."

225.   ———. 2020. "The Puzzles of Ground." *Philosophical Studies* no. 177:2541-2564.
Abstract: "I outline and provide a solution to some paradoxes of ground."

226.   Lowe, E. J. 1998. *The Possibility of Metaphysics: Substance, Identity, and Time* . Oxford: Clarendon Press.
"The arguments of Chapter 5 more or less take the concept of substance for granted and so part of the aim of Chapter 6 is to provide a rigorous definition of substance, in terms of the crucial notion of *existential dependency* . At the same time, I begin to build up a picture of the relationships between the category of substance and other categories of entities at the same ontological level—entities such as events, properties, places, and times. This picture is further developed in Chapter 7, where I

go on to argue for quite general reasons that certain fundamental kinds of substance —what I call primitive substances—must exist in order to provide the ultimate existential grounding of all concrete existence. Such substances are distinctive in that their identity through time is itself primitive or ungrounded.
However, identifying these substances is a more difficult matter than arguing in a general way for the necessity of their existence." (Preface, p. VI)

227.   ———. 2012. "Asymmetrical Dependence in Individuation." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 214-233. Cambridge: Cambridge University Press.
"Identity-dependence would appear to be an asymmetrical, or at least an antisymmetrical relation, with the implication that no two distinct entities can be each other's individuators – even if we can allow, as I believe we should, that some entities are self-individuating.
(...)
However, some so-called 'structuralist' ontologies seem to threaten the contention that two or more entities of a certain kind cannot all fix each other's identities.
(...)
If these suggestions are correct, then it would seem that, in principle, all facts about the identities of entities of any kind may 'supervene' upon relational facts about certain structures to which those entities belong. Hence, no identity fact would be metaphysically basic or foundational. In the present chapter, this line of thought will be challenged and thereby a case be made out for the claim that some entities in any coherent system of ontology must be self-individuating, with these entities ultimately explaining the identities of all other entities in the system." (p. 215)

228.   ———. 2013. "Some Varieties of Metaphysical Dependence." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 193-210. Munich: Philosophia Verlag.
"In this paper, I shall first of all (in section 1) define various kinds of ontological dependence, motivating these definitions by appeal to examples. My contention is that whenever we need, in metaphysics, to appeal to some notion of existential or identity-dependence, one or other of these definitions will serve our needs adequately, which one depending on the case in hand. Then (in section 2) I shall respond to some objections to one of these proposed definitions in particular, namely, my definition of (what I call) essential identity dependence.
Finally (in section 3), I shall show how a similar approach can be applied in the theory of truthmaking, by offering an account of the truthmaking relation which defines it in terms of a type of essential dependence. I shall also say why I think that this approach is preferable to one which treats the truthmaking relation as primitive. More generally, my view is that accounts of dependence or 'grounding' which treat these notions as primitive are less satisfactory than my own position, which is that in all cases a suitable definition is forthcoming if we look hard enough." (p. 193)

229.   Lubrano, Michele. 2018. "The Emergence of Ground: Some Limitative Results." *Synthese* no. 198:1303-1315.
Abstract: "In this paper I'm going to deal with the divide between foundationalism and infinitism about grounding. I will examine a thesis about the emergence of ground that has recently been proposed by Matteo Morganti. I will show that a generalized version of this thesis suffers from some serious limits and it cannot be accepted without a significant departure from the standard notion of grounding."
References
Morganti, M. (2009). Ontological priority, fundamentality and monism. *Dialectica* , 63(3), 271–288.
Morganti, M. (2015). Dependence, justification and explanation: Must reality be well-founded? *Erkenntnis* , 80, 555–572.

230.   Marshall, Daniel Graham. 2015. "Intrinsicality and Grounding." *Philosophy and Phenomenological Research* no. 90:1-19.

Abstract: "A number of philosophers have recently claimed that intrinsicality can be analysed in terms of the metaphysical notion of grounding. Since grounding is a hyperintensional notion, accounts of intrinsicality in terms of grounding, unlike most other accounts, promise to be able to discriminate between necessarily coextensive properties that differ in whether they are intrinsic. They therefore promise to be compatible with popular metaphysical theories that posit necessary entities and necessary connections between wholly distinct entities, on which it is plausible that there are such properties. This paper argues that this promise is illusory. It is not possible to give an analysis of intrinsicality in terms of grounding that is consistent with these theories. Given an adequate analysis should be compatible with these theories, it follows
that it is not possible to analyse intrinsicality in terms of grounding."

231. Martínez, Sergio F., and Huang, Xiang. 2011. "Epistemic Groundings of Abstraction and Their Cognitive Dimension." *Philosophy of Science* no. 78:490-511.
Abstract: "In the philosophy of science, abstraction has usually been analyzed in terms of the interface between our experience and the design of our concepts. The often implicit assumption here is that such interface has a definite identifiable and universalizable structure, determining the epistemic correctness of any abstraction. Our claim is that, on the contrary, the epistemic grounding of abstraction should not be reduced to the structural norms of such interface but is also related to the constraints on the cognitive processes of specific abstractions. This suggests that we should understand abstraction as embodied in different kinds of abstraction practices."

232. Maurin, Anna-Sofia. 2019. "Grounding and Metaphysical Explanation: It's Complicated." *Philosophical Studies* no. 176:1573-1594.
Abstract: "Grounding theorists insist that grounding and explanation are intimately related. This claim could be understood as saying either that grounding 'inherits' its properties from (metaphysical) explanation (and that, therefore, contemplating the nature of explanation informs us about the nature of grounding) or it could be interpreted as saying that grounding plays an important—possibly an indispensable — role in metaphysical explanation (and that, therefore, that there are these explanations justifies positing grounding). Or both. I argue that saying that grounding 'inherits' its properties from explanation can only be justified if grounding is explanatory by nature (if so-called 'unionism' is true), but that this view is untenable. We ought therefore to be 'separatists' and view grounding and explanation as distinct. As it turns out, though, once grounding has been in this sense distinguished from the explanation it backs, the view that the role grounding plays in explanation justifies its introduction ends up in serious trouble. I conclude that the role grounding plays in explanation (if any) does not justify attributing to grounding whatever nature we think it has, and it most likely does not give us any special reason to think grounding exists."

233. Mayer, Marta Cialdea, and Cerrito, Serenella. 2001. "Ground and Free-Variable Tableaux for Variants of Quantified Modal Logics." *Studia Logica* no. 69:97-131.
Abstract: "In this paper we study proof procedures for some variants of first-order modal logics, where domains may be either cumulative or freely varying and terms may be either rigid or non-rigid, local or non-local. We define both ground and free variable tableau methods, parametric with respect to the variants of the considered logics. The treatment of each variant is equally simple and is based on the annotation of functional symbols by natural numbers, conveying some semantical information on the worlds where they are meant to be interpreted.
This paper is an extended version of a previous work where full proofs were not included. Proofs are in some points rather tricky and may help in understanding the reasons for some details in basic definitions."

234. Mazurkiewicz, Szymon. 2019. "Legal Positivism Social Source Thesis and Metaphysical Grounding: Employing Metaphysical Grounding Based on

Metaphysical Laws." *Archiwum Filozofii Prawa i Filozofii Spolecznej* :5-21.
"In this paper, I would like to examine the grounding account of the determination of the relation between social facts and legal facts, as well as try to resolve some problems that this account involves. The first one is its unintelligibility: if one claims that legal facts are metaphysically grounded in social facts without explaining why this relation holds, such a claim does not seem to be explanatory sufficient. The second one
is insufficient explanation of how normative legal facts can be grounded in descriptive social facts." (p. 6)

235.   McDaniel, Brannon. 2017. "Grounding and the Objection from Accidental Generalizations." *Thought: A Journal of Philosophy* no. 6:178-184.
Abstract: "*Monistic grounding* says that there is one fundamental ground, while *pluralistic grounding* says that there are many such grounds. *Grounding necessitarianism* says that grounding entails, but is not reducible to, necessitation, while *grounding contingentism* says that there are at least some cases where grounding does not entail necessitation. Pluralistic grounding necessitarianism is a very popular position, but accidental generalizations, such as 'all solid gold spheres are less than one mile in diameter', pose well-known problems for this view: the many fundamental grounds of such generalizations do not necessitate them. Though there is a straightforward response to this objection, I argue that it fails.Thus the objection from accidental generalizations stands, and proponents of pluralistic grounding necessitarianism face the following dilemma: either give up pluralistic grounding, or give up necessitarianism."

236.   ———. 2022. "Grounding as Minimal Necessitation." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 65:154-175.
Abstract: Let NNG be the claim that necessitation is necessary for grounding, and let NSG be the claim that necessitation is sufficient for grounding. The consensus view is that grounding cannot be reduced to necessitation, and this is due to the (approximately) universally-accepted claim that NSG is false. Among deniers of NSG: grounding contingentists think NNG is also false, but they are in the minority compared to grounding necessitarians who uphold NNG. For one who would defend the claim that grounding is reducible to necessitation, the task is formidable: she must defend NSG and NNG. I consider two prominent objections against NSG, and two more against NNG before developing a reductive account of grounding as minimal necessitation that avoids not only all four of the previously mentioned objections, but also an additional objection that targets minimal necessitation accounts in particular. If my arguments are compelling, then, insofar as we thereby have a strong prima facie case for thinking that grounding can be reduced to (minimal) necessitation, we have a strong prima facie case for thinking the consensus view is mistaken."

237.   McDaniel, Kris. 2017. *The Fragmentation of Being* . Oxford: Oxford University Press.
"One of the oldest questions in metaphysics concerns not the various natures of beings but rather the nature of being itself: is being unitary or does being fragment? The primary aims of this book are to explicate the idea that being fragments, to show how the fragmentation of being impacts various other extant philosophical disputes, and to defend the tenability and fruitfulness of the idea that being fragments.
These aims are interdependent. An inexplicable idea is neither tenable nor fruitful. And an idea is fruitful only if it sheds light on extant disputes or provides new paths for interesting research. If the claim that being fragments has no philosophical

payoff elsewhere, one must forgive those who neglect or dismiss the question of the fragmentation of being. My hope is that I will convince you of the importance of the claim that being fragments by extensively exploring the connections between the various ways being might fragment and philosophical issues pertaining to metaphysical fundamentality, substances and accidents, time, modality, ontological categories, absences and presences, persons, value, ground, and essence. This book is devoted to these explorations." (p. 1)

238.   ———. 2019. "The Principle of Sufficient Reason and Necessitarianism." *Analysis* no. 79:230-236.
"1. Introduction: Peter van Inwagen (1983: 202–4) presented a powerful argument against the Principle of Sufficient Reason, which I henceforth abbreviate as 'PSR'. (See also Bennett 1984: 115 for a similar argument. I will elide the differences between them in what follows.) For decades, the consensus was that this argument successfully refuted PSR. However, now a growing consensus holds that van Inwagen's argument is fatally flawed, at least when 'sufficient reason' is understood in terms of ground, for on this understanding, an ineliminable premiss of van Inwagen's argument is demonstrably false and cannot be repaired. I will argue that this growing consensus is mistaken and that a powerful argument relevantly similar to van Inwagen's should still concern us, even when we understand 'sufficient reason' in terms of ground.
Here is the plan for the paper. In §2, I briefly state a version of van Inwagen's argument. In §3, I briefly discuss the recent criticism of it van Inwagen's argument and then formulate an updated version of it that is more plausible than its predecessor but which avoids the recent criticism."
References
Bennett, J. 1984. *A Study of Spinoza's "Ethics"* , Indianapolis, IN: Hackett Press.
van Inwagen, P. 1983. *An Essay on Free Will.* Oxford: Oxford University Press

239.   McSweeney, Michaela M. 2020. "Debunking Logical Ground: Distinguishing Metaphysics from Semantics." *Journal of the American Philosophical Association* no. 6:156-170.
Abstract: "Many philosophers take purportedly logical cases of ground (such as a true disjunction being grounded in its true disjunct(s)) to be obvious cases, and indeed such cases have been used to motivate the existence of and importance of ground. I argue against this. I do so by motivating two kinds of semantic determination relations. Intuitions of logical ground track these semantic relations. Moreover, our knowledge of semantics for (e.g.) first order logic can explain why we have such intuitions. And, I argue, neither semantic relation can be a species of ground even on a quite broad conception of what ground is.
Hence, without a positive argument for taking so-called 'logical ground' to be something distinct from a semantic determination relation, we should cease treating logical cases as cases of ground."

240.   ———. 2020. "Logic." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 449-459. New York: Routledge.
"Some of the paradigmatic examples of grounding (that are often used to motivate, or help us latch onto, the notion of grounding itself) are relations between logically complex facts and the logically simpler facts that entail them. For example:
[The grass is green] grounds [Either the grass is green or the moon is made of cheese].
[The grass is green], [The sky is blue] ground [The grass is green and the sky is blue].
[The chair is orange] grounds [Something is orange].
Either implicitly or explicitly, these are usually (but not always) taken as instances of variations of the following principles:
Conjunctive grounding ('CG'): If each of p, q is true, then [p], [q] together ground [p & q].
Disjunctive grounding ('DG'): If p is true, then [p] grounds [p v q].

Existential grounding ('EG'): If Fa is true, then [Fa] grounds [∃x Fx].
This entry surveys some things that have been said in favor of these principles (and about logical grounding in general) and raises (but does not resolve) some questions about why we should accept these principles, and, if we should, what it means to accept these principles." (p. 449)

241. Melamedoff, Damian. 2018. "Against Existential Grounding." *Thought. A Journal of Philosophy* no. 7:3-11.
Abstract: "Existential grounding is the thesis that all existential generalizations are grounded in their particular instances.This paper argues that existential grounding is false.This is because it is inconsistent with two plausible claims about existence: (1) the claim that singular existence facts are generalizations and (2) the claim that no object can be involved in a fact that grounds that same object's existence. Not only are these claims intuitively plausible, but there are also strong arguments in favour of each of them."

242. Melnyk, Andrew. 2016. "Grounding and the Formulation of Physicalism." In *Scientific Composition and Metaphysical Ground* , edited by Aizawa, Ken and Gillett, Carl, 249-270. London: Palgrave Macmillan.
"Because I aspire to be a naturalistic metaphysician, I ask in this chapter whether an appeal to the relation of grounding posited recently by certain philosophers might be useful in one kind of approach to the problem of the many sciences—a physicalist approach." (p. 250)

243. Merlo, Giovanni. 2022. "Disjunction and the Logic of Grounding." *Erkenntnis* no. 87:567-587.
Abstract: "Many philosophers have been attracted to the idea of using the logical form of a true sentence as a guide to the metaphysical grounds of the fact stated by that sentence.
This paper looks at a particular instance of that idea: the widely accepted principle that disjunctions are grounded in their true disjuncts. I will argue that an unrestricted version of this principle has several problematic consequences and that it's not obvious how the principle might be restricted in order to avoid them. My suggestion is that, instead of trying to restrict the principle, we should distinguish between metaphysical and conceptual grounds and take the principle to apply exclusively to the latter. This suggestion, if correct, carries over to other prominent attempts at using logical form as a guide to ground."

244. Mikkola, Mari. 2015. "Doing Ontology and Doing Justice: What Feminist Philosophy Can Teach Us About Meta-Metaphysics." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 58:780-805.
Abstract: "Feminist philosophy has recently become recognised as a self-standing philosophical sub-discipline. Still, metaphysics has remained largely dismissive of feminist insights. Here I make the case for the value of feminist insights in metaphysics: taking them seriously makes a difference to our ontological theory choice and feminist philosophy can provide helpful methodological tools to regiment ontological theories.
My examination goes as follows. Contemporary ontology is not done via conceptual analysis, but via quasi-scientific means. This takes different ontological positions to be competing hypotheses about reality's fundamental structure that are then assessed with a loose battery of criteria for theory choice. Such criteria make up the constitutive values of ontology (e.g. providing a unified, coherent, non-circular, simple, parsimonious total theory). These values are distinguished from *contextual* values of a practice: the political and moral values embedded in the social context of inquiry. Although we may be frank about some meta-metaphysical value commitments, bringing in feminist contextual values is viewed as an unacceptable move when thinking about ontological theory choice. This paper then asks: is this move unacceptable? I think not and I aim to motivate this methodological insight here by examining recent work on grounding."

245.   ———. 2019. "Grounding and Anchoring: On the Structure of Epstein's Social Ontology." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 62:198-216.
Abstract: "Brian Epstein's *The Ant Trap* is a praiseworthy addition to literature on social ontology and the philosophy of social sciences. Its central aim is to challenge received views about the social world – views with which social scientists and philosophers have aimed to answer questions about the nature of social science and about those things that social sciences aim to model and explain, like social facts, objects and phenomena. The received views that Epstein critiques deal with these issues in an overly people-centered manner. After all, even though social facts and phenomena clearly involve individual people arranged in certain ways, we must still spell out how people are involved in social facts and phenomena. There are many metaphysical questions about social properties, relations, dependence, constitution, causation, and facts that cannot be answered (for instance) just be looking at individual people alone. In order to answer questions about (e.g.) how one social entity depends for its existence on another, we need different metaphysical tools. Epstein thus holds that social ontological explanations would greatly benefit from making use of the theoretical toolkit that contemporary analytical metaphysics has to offer. He focuses specifically on two metaphysical instruments: grounding and anchoring. This paper examines Epstein's understanding and use of these tools. I contend that Epstein is exactly right to say that contemporary metaphysics contains many theoretical instruments that can be fruitfully applied to social ontological analyses. However, I am unconvinced that Epstein's tools achieve what they set out to do. In particular, I will address two issues: (1) How is grounding for Epstein meant to work? (2) Is anchoring distinct from grounding, and a relation that we need in social ontology?"

246.   Miller, Elizabeth. 2015. "Humean Scientific Explanation." *Philosophical Studies* :1311–1332.
Abstract: "In a recent paper, Barry Loewer attempts to defend Humeanism about laws of nature from a charge that Humean laws are not adequately explanatory. Central to his defense is a distinction between metaphysical and scientific explanations: even if Humeans cannot offer further metaphysical explanations of particular features of their ''mosaic,'' that does not preclude them from offering scientific explanations of these features. According to Marc Lange, however, Loewer's distinction is of no avail. Defending a transitivity principle linking scientific explanantia to their metaphysical grounds, Lange argues that a charge of explanatory inadequacy resurfaces once this intuitive principle is in place. This paper surveys, on behalf of the Humean, three strategies for responding to Lange's criticism. The ready availability of these strategies suggests that Lange's argument may not bolster anti-Humean convictions, since the argument rests on premises that those not antecedently sharing these convictions may well reject. The three strategies also correspond to three interesting ways of thinking about relations of grounding linking Humean laws and their instances, all of which are consistent with theses of Humean supervenience, and some of which have been heretofore overlooked."
References
Lange, M. (2013). Grounding, scientific explanation, and Humean laws. *Philosophical Studies* , 164, 255–261.
Loewer, B. (2012). Two accounts of laws and time. *Philosophical Studies* , 160, 115–137.

247.   Miller, Kristie, and Norton, James. 2017. "Grounding: It's (Probably) All in the Head." *Philosophical Studies* no. 174:3059-3081.
Abstract: "In this paper we provide a psychological explanation for 'grounding observations'—observations that are thought to provide evidence that there exists a relation of ground. Our explanation does not appeal to the presence of any such relation. Instead, it appeals to certain evolved cognitive mechanisms, along with the traditional modal relations of supervenience, necessitation and entailment. We then consider what, if any, metaphysical conclusions we can draw from the obtaining of

such an explanation, and, in particular, if it tells us anything about whether we ought to posit a relation of ground."

248.   Moran, Alex. 2018. "Kind-Dependent Grounding." *Analytic Philosophy* no. 59:359-390.
"I begin by saying something more about the notion of grounding itself (Section 2). Then, I set out the aforementioned passage from Rosen (2015), discussion of which will help us work towards the key notion of kind-dependent grounding that this paper appeals to (Section 3). Along the way, we will encounter the idea that each object instantiates a fundamental kind, which can determine the properties it may have, plus the idea that grounding claims can hold conditionally. The following two sections then put the notion of kinddependent grounding to work in connection with two important metaphysical problems (Sections 4–5). The final section concludes (Section 6)." (p. 361)

249.   Morganti, Matteo. 2014. "Metaphysical Infinitism and the Regress of Being." *Metaphilosophy* no. 45:232-244.
Abstract: "This article offers a limited defense of metaphysical "infinitism," the view that there are, or might be, infinite chains of ontological dependence. According to a widespread presupposition, there must be an ultimate ground of being—most likely, a plurality of fundamental atoms. Contrary to this view, this article shows that metaphysical infinitism is internally coherent. In particular, a parallel with the debate concerning infinitism about epistemic justification is suggested, and an "emergence model" of being is put forward. According to the emergence model, the being of any given entity gradually arises out of an infinite series of progressively less dependent entities—it is not wholly transmitted, as it were, from a basic, ungrounded level to all the dependent ones in a step-by-step fashion. Some objections are considered and rebutted."

250.   ———. 2018. "The Structure of Physical Reality. Beyond Foundationalism." In *Reality and its Structure: Essays in Fundamentality* , edited by Bliss, Ricki and Priest, Graham, 254-272. New York: Oxford University Press.
"The plan of the paper is as follows. Section 2 briefly discusses the traditional view, based on grounding relations as determining strict partial orders and well-founded structures—so-called 'metaphysical foundationalism'.The discussion then focuses on the prospects of non-standard models of the metaphysical structure of (parts of) physical reality. Section 3 looks at 'infinitist' models, where the well-foundedness assumption is dropped. Section 4 discusses 'coherentist' models, in which grounding relations fail to be irreflexive and symmetric and grounding structures give rise to 'loops' and/or 'webs'. Section 5 concludes the paper by considering the plausibility of what one may call 'hybrid' models and, more generally, of pluralism with respect to the metaphysical structure of reality." (p. 257)

251.   Morton, Justin. 2019. "Grounding Thick Normative Facts." *Pacific Philosophical Quarterly* no. 100:408-431.
Abstract: "Many philosophers have been concerned with the nature of thick normative concepts. In this paper, I try to motivate a different project: understanding the nature of thick normative properties and facts. I propose a ground-theoretic approach to this project. I then argue that some of the simplest andmost initially plausible ways of understanding thick facts fail and that we are forced to accept some initially implausible views. I try to show how these views are not so implausible after all."

252.   Muñoz, Daniel. 2020. "Grounding Nonexistence." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 63:209-229.
Abstract: "Contingent negative existentials give rise to a notorious paradox. I formulate a version in terms of metaphysical grounding: nonexistence can't be fundamental, but nothing can ground it. I then argue for a new kind of solution, expanding on work by Kit Fine. The key idea is that negative existentials are contingently zero-grounded – that is to say, they are grounded, but not by anything,

and only in the right conditions. If this is correct, it follows that grounding cannot be an internal relation, and that no complete account of reality can be purely fundamental."

253.   Ney, Alyssa. 2016. "Grounding in the Philosophy of Mind: A Defense." In *Scientific Composition and Metaphysical Ground* , edited by Gillett, Carl and Aizawa, Ken, 271-300. London: Palgrave-Macmillan.
"One of the major trends in metaphysics in recent years has been in the development and application of novel conceptual frameworks for representing facts about realism, fundamentality, and metaphysical priority." (p. 271)
(...)
"I will argue that Fine's framework has distinctive advantages but to see this it needs to be carefully teased apart from the others.
As I hope to show, Fine's framework may be useful as a foundation for developing an approach to the mind–body problem that can resolve and clarify debates. I hope to show that by utilizing Fine's distinctions, we are able to offer novel, conciliatory positions allowing us to move past some debates that have been carrying on in the philosophy of mind for decades." (p. 274)

254.   ———. 2020. "Mind." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 460-471. New York: Routledge.
"The concept of grounding is typically introduced in order to formulate and address questions about metaphysical relationships.
(...)
This chapter will (i) describe how some metaphysicians have proposed the introduction of grounding concepts in order to formulate and provide answers to the mind–body problem and (ii) survey concerns about the appropriateness, adequacy, and indispensability of grounding concepts for addressing questions about the status of mental phenomena in a physical world. Finally, this chapter will (iii) consider replies to these concerns.A central lesson will be that any adequate assessment of the usefulness of grounding frameworks for formulating issues and positions in the philosophy of mind must be sensitive to distinctions between the different grounding concepts that have been introduced." (p. 460)

255.   Nolan, Daniel. 2018. "Cosmic Loops." In *Reality and its Structure: Essays in Fundamentality* , edited by Bliss, Ricki and Priest, Graham, 91-106. New York: Oxford University Press.
"Conclusion: Cosmic loops are of intrinsic interest: thinking about them can satisfy the same urges to grapple with the unfamiliar which are satisfied by various sorts of speculative fiction, from science fiction to the stories of Borges. Metaphysical fiction is a genre in its infancy, but a promising one for all that.
I have argued that thinking about cosmic loops serves several more academic purposes, however. They demonstrate, that we can make sense of loops of ground in a different way from the usual examples of loops achieved through only a few steps, and the conceivability and perhaps possibility of them are supported in ways different from other arguments I know of to support failures of asymmetry and transitivity. ." (p.104)

256.   Norton, James. 2017. *On the Dispensability of Grounding: Ground-breaking Work on Metaphysical Explanation* , The University ofd Sidney.
Unpublished PhD thesis available at
https://ses.library.usyd.edu.au/handle/2123/16600
Abstract: "Primitive, unanalysable grounding relations are considered by many to be indispensable constituents of the metaphysician's toolkit. Yet, as a primitive ontological posit, grounding must earn its keep by explaining features of the world not explained by other tools already at our disposal. Those who defend grounding contend that grounding is required to play two interconnected roles: accounting for widespread intuitions regarding what is ontologically prior to what, and forming the backbone of a theory of metaphysical explanation, in much the same way that causal relations have been thought to underpin theories of scientific explanation.

This thesis undermines the need to posit grounding relations to perform either of these jobs. With regard to the first, it is argued that a pair of human psychological mechanisms—for which there is substantial empirical support—can provide a more theoretically virtuous explanation of why we have the intuitions that we do. With regard to the second, I begin by considering what we want from a theory of explanation, and go on to develop three attractive (yet grounding-free) theories of metaphysical explanation. I offer: i) a psychologistic theory that calls upon the aforementioned psychological mechanisms, as well as the modal relations of necessitation and supervenience, ii) a metaphysical variant of the deductive-nomological theory of scientific explanation, and iii) a metaphysical variant of the unificationist theory of scientific explanation. Furthermore, these theories draw upon mechanisms and relations (both logical and ontological) to which we are already committed. Thus, to posit grounding relations in order to explain our priority intuitions, or in order to develop a theory of metaphysical explanation, is ontologically profligate. I conclude that we should not posit relations of ground."

257.   Nutting, Eileen S., Caplan, Ben, and Tillman, Chris. 2018. "Constitutive Essence and Partial Grounding." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 61:137-161.
Abstract: "Kit Fine and Gideon Rosen propose to define constitutive essence in terms of ground-theoretic notions and some form of consequential essence. But we think that the Fine–Rosen proposal is a mistake. On the Fine–Rosen proposal, constitutive essence ends up including properties that, on the central notion of essence (what Fine calls 'the notion of essence which is of central importance to the metaphysics of identity'), are necessary but not essential. This is because consequential essence is (roughly) closed under logical consequence, and the ability of logical consequence to add properties to an object's consequential essence outstrips the ability of ground-theoretic notions, as used in the Fine–Rosen proposal, to take those properties out. The necessary-but-not-essential properties that, on the Fine–Rosen proposal, end up in constitutive essence include the sorts of necessary-but-not-essential properties that, others have noted, end up in consequential essence."

258.   O'Conaill, Donnchadh. 2018. "Grounding, Physicalism and Necessity." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 61:713-730.
Abstract: "Recent work on metaphysical grounding has suggested that physicalism can be characterised in terms of the mental facts being grounded in physical facts. It is often assumed that the full grounds of a fact metaphysically necessitate that fact. Therefore, it seems that if the physical grounds the mental, then the physical facts metaphysically necessitate the mental facts. Stefan Leuenberger argues that such a version of physicalism would be vulnerable to counterexamples. I shall outline a characterisation of grounding which appeals to a relation between grounding and the essences of properties instantiated in the grounded facts or in their grounds. If a grounded fact is such that its constituent property is essentially related to the properties instantiated in its grounds, or vice versa, then the grounded fact will be metaphysically necessitated by its full grounds. This characterisation of grounding not only avoids Leuenberger's counterexamples, but has broader implications for characterising physicalism in terms of grounding."

259.   O'Conaill, Donnchadh, and Tahko, Tuomas E. 2021. "New Frontiers in Ground, Essence, and Modality: Introduction." *Synthese* no. 198:1219-1230.
"Ground, essence, and modality seem to have something to do with each other. Can we provide unified foundations for ground and essence, or should we treat each as primitives? Can modality be grounded in essence, or should essence be expressed in terms of modality? Does grounding entail necessitation? Are the notions of ground and essence univocal? This volume focuses on the links—or lack thereof—between these three notions, as well as the foundations of ground, essence, and modality more generally, bringing together work on the metaphysics, epistemology, and logic

of these three notions by some of the leading figures in the field as well as emerging young scholars.

(...)

After providing a brief historical summary of the (re)emergence of modality, essence and ground as central notions in metaphysics (Sect. 1), we shall outline some of the main themes in recent work on these notions and on the links between them (Sect. 2). In Sect. 3 we briefly introduce the papers in this volume." (p. 1219)

260.   Oderberg, David S. 2021. "Formal Causation: Accidental and Substantial." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 40-61. New York: Routledge.
"Of Aristotle's famous four causes, the 'formal cause' has been arguably the most neglected, if not eliminated outright from philosophy. This paper is an attempt to contribute to the rehabilitation of formal causality.
First, I outline the Aristotelian-Scholastic understanding of form as the principle of actuality, explaining the overlap between forms and universals.
I then begin, unconventionally, with an explanation of formal causation by *accidents.* There is a kind of causation by accidental forms that cannot be equated with efficient causation: I distinguish between the efficient causal trigger of actualisation and the continued actualisation of an object's potentiality, which latter is accounted for by formal causality. The discussion then moves to substantial forms and formal causation by them-where accounts of formal causality traditionally begin.
I argue that the causality whereby there exists a hylemorphic compound of matter and form cannot be efficient but must be formal. This requires an analysis of some aspects of matter as pure potentiality Aristotelian prime matter. I conclude by discussing the role of form as the *unifier* of matter into a single substance. This activity of unification is a central element in substantial formal causality. By contrast, Travis Dumsday's attempt to solve the unity problem without appealing to form is found wanting. I conclude that formal causation, far from being the relic of an outdated metaphysic, is both coherent and necessary to a proper understanding of fundamental being."
References
Dumsday, T. (2010) 'Natural Kinds and the Problem of Complex Essences'. Australasian Journal of Philosophy 88(4), 619-34.

261.   Orilia, Francesco. 2009. "Bradley's Regress and Ungrounded Dependence Chains: A Reply to Cameron." *Dialectica* no. 63:333-341.
Abstract: "A version of Bradley's regress can be endorsed in an effort to address the problem of the unity of states of affairs or facts, thereby arriving at a doctrine that I have called fact infinitism. A consequence of it is the denial of the thesis, WF, that all chains of ontological dependence are well-founded or grounded. Cameron has recently rejected fact infinitism by arguing that WF, albeit not necessarily true, is however contingently true. Here fact infinitism is supported by showing that Cameron's argument for the contingent truth of WF is unsuccessful."
WF = Ontological Well-Foundedness
References
Cameron, R. 2008, 'Turtles all the Way Down: Regress, Priority and Fundamentality', *Philosophical Quarterly* 58, pp. 1–14.

262.   Paolini Paoletti, Michele. 2021. "Functional Powers." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 124-148. New York: Routledge.
"Functions constitute a debated issue at the intersection between ontology and philosophy of science. Indeed, functions have given rise to several philosophical theories about their features, their presence or absence within specific kinds of entities, and their origins. Nevertheless, before delving into these aspects of functions, it is necessary to clarify what functions are from an ontological viewpoint. Namely, it is necessary to single out the nature of functions.

In this contribution, I shall suggest that functions should be taken as powers. More precisely, I shall argue that there is a certain category of powers-that of functional powers-and that functional powers can be legitimately taken to play the role of functions." (p. 124)

263.   Passinsky, Asya. 2020. "Social Entities." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 510-520. New York: Routledge.
"In recent years,there has been an increased interest in applying the tools and methods of analytic metaphysics to the study of social phenomena.This chapter examines how one such tool—the notion of metaphysical ground—may be used to elucidate some central notions, debates, and positions in the philosophy of race and gender, social ontology, and the philosophy of social science. Three main applications are examined: how the notion of social construction may be analyzed in ground-theoretic terms (§1); how debates over the nature of social facts may be recast as grounding debates (§2); and how the doctrine of ontological individualism may be formulated using the notion of ground (§3).The chapter concludes by considering a skeptical challenge concerning the usefulness of the grounding framework for social metaphysics (§4)." (p. 510)

264.   Perebom, Derk. 2016. "Anti-Reductionism, Anti-Rationalism, and the Material Constitution of the Mental." In *Scientific Composition and Metaphysical Ground* , edited by Carl Gillett, Ken Aizawa, 123-140. London: Palgrave-Macmillan.
"Physicalism about the mental requires that all mental entities be appropriately founded in microphysical entities. Supposing the truth of physicalism, it remains an open question whether the relation between the microphysical and the mental is reductive or nonreductive. By contrast with the mid-twentieth century, currently, most nonreductivists maintain that the main reason for accepting the nonreductive option is not methodological but metaphysical. On the position I endorse, mental natural kinds are not identical to natural kinds in microphysics because mental causal powers are not identical to microphysical causal powers." (p. 124)

265.   Petersen, Thorben. 2016. "The Grounding Problem for Eternalism." *Philosophical Studies* no. 173:1819-1852.
Abstract: "In this paper, I develop an argument against eternalism, which is similar to the widely discussed grounding problem for presentism. It has recently been argued by many that presentism should be rejected on grounds that its sparse ontology is not suited to underwrite the healthy dose of realism we all share about the past. My aim basically is to add a new twist to the debate, by showing that actually eternalists are no better off than their rivals. In particular, I argue that the eternalist's ontology does not have the appropriate shape to ground true propositions about the past."

266.   Piccolomini D'Aragona, Antonio. 2021. "Proofs, Grounds and Empty Functions: Epistemic Compulsion in Prawitz's Semantics." *Journal of Philosophical Logic* . First Online 8 November 2021.
Abstract: "Prawitz has recently developed a theory of epistemic grounding that differs in many respects from his earlier semantics of arguments and proofs. An innovative approach to (valid) inferences yields a new conception of the intertwinement of the notions of valid inference and proof. We aim at singling out three reasons that may have led Prawitz to the ground-theoretic turn, i.e.: a better order in the explanation of the relation between valid inferences and proofs; a notion of valid inference based on which valid inferences and proofs are recognisable as such; a reconstruction of the deductive activity that makes inferences capable of yielding justification per se. These topics are discussed by Prawitz with reference to a very general and ancient question: why and how correct deduction has the epistemic power to compel us to accept its conclusions, provided its premises are justified? We conclude by remarking that, in spite of some improvements, the ground-theoretic approach shares with the previous one a

problem of vacuous validity which, as Prawitz himself points out, blocks in both cases a satisfactory explanation of epistemic compulsion."

267.   Plebani, Matteo. 2018. "The Indispensability Argument and the Nature of Mathematical Objects." *Theoria: An International Journal for Theory, History and Foundations of Science* no. 33:249-263.
Abstract: "Two conceptions of the nature of mathematical objects are contrasted: the conception of mathematical objects as preconceived objects (Yablo 2010), and heavy duty platonism (Knowles 2015). It is argued that some theses defended by friends of the indispensability argument are in harmony with heavy duty platonism and in tension with the conception of mathematical objects as preconceived objects."
References
Knowles, Robert. 2015. Heavy duty platonism. *Erkenntnis* 80/6: 1255-1270.
Yablo, Stephen. 2010. *Things: Papers on objects, events, and properties.* Oxford: Oxford University Press.

268.   Poggiolesi, Francesca. 2016. "On Defining the Notion of Complete and Immediate Formal Grounding." *Synthese* no. 193:3147-3167.
Abstract: "The aim of this paper is to provide a definition of the the notion of complete and immediate formal grounding through the concepts of derivability and complexity.
It will be shown that this definition yields a subtle and precise analysis of the concept of grounding in several paradigmatic cases."

269.   ———. 2016. "A Critical Overview of the Most Recent Logics of Grounding." In *Objectivity, Realism, and Proof: FilMat Studies in the Philosophy of Mathematics* edited by Boccuni, Francesca and Sereni, Andrea, 291-309. Dordrecht: Springer.
Abstract: "In this paper our aim is twofold: on the one hand, to present in a clear and faithful way two recent contributions to the logic of grounding, namely Correia (2014), and Fine (2012a); on the other hand, to argue that some of the formal principles describing the notion of grounding proposed by these logics need to be changed and improved."
References
Correia, F. (2014). Logical grounds. *Review of Symbolic Logic* , 7(1), 31–59.
Fine, K. (2012a). Guide to ground. In F. Correia & B. Schnieder (Eds.), *Metaphysical grounding* (pp. 37–80). Cambridge: Cambridge University Press.
Fine, K. (2012b). The pure logic of ground. *Review of Symbolic Logic* , 25(1), 1–25.

270.   ———. 2018. "On Constructing a Logic for the Notion of Complete and Immediate Formal Grounding." *Synthese* no. 195:1231-1254.
Abstract: "In Poggiolesi (2016b) we have introduced a rigorous definition of the notion of complete and immediate formal grounding; in the present paper our aim is to construct a logic for the notion of complete and immediate formal grounding based on that definition. Our logic will have the form of a calculus of natural deduction, will be proved to be sound and complete and will allow us to have fine-grained grounding principles."
References
Poggiolesi, F. (2016b). On defining the notion of complete and immediate formal grounding. *Synthese* , 193:
3147–3167.

271.   ———. 2020. "Grounding Rules and (Hyper-)Isomorphic Formulas." *Australasian Journal of Logic* no. 17:70-80.
Abstract: "An oft-defended claim of a close relationship between Gentzen inference rules and the meaning of the connectives they introduce and eliminate has given rise to a whole domain called proof-theoretic semantics, see Schroeder-Heister (1991); Prawitz (2006). A branch of proof-theoretic semantics, mainly developed by Došen (2019); Došen and Petríc (2011), isolates in a precise mathematical manner formulas (of a logic L) that have the same meaning. These isomorphic formulas are

defined to be those that behave identically in inferences. The aim of this paper is to investigate another type of recently discussed rules in the literature, namely grounding rules, and their link to the meaning of the connectives they provide the grounds for. In particular, by using grounding rules, we will refine the notion of isomorphic formulas through the notion of hyper-isomorphic formulas. We will argue that it is actually the notion of hyper-isomorphic formulas that identify those formulas that have the same meaning."
References
Došen, K. (2019). Identity of proofs based on normalization and generality. *Bulletin of Symbolic Logic* , 9:477–503.
Došen, K. and Petríc (2011). Isomorphica formulas in classical propositional logic. *Mathematical Logic Quarterly* , 58:1–17.
Prawitz, D. (2006). Meaning approached via proofs. *Synthese* , 148:507–524.
Schroeder-Heister, P. (1991). Uniform proof-theoretic semantics for logical constants (abstract). *Journal of Symbolic Logi* c, 56:11–42.

272.   ———. 2020. "Grounding Rules for (Relevant) Implication." *Journal of Applied Non-Classical Logics* no. 31:26-55.
Abstract: "In Poggiolesi (2020a) a definition of the notion of complete and immediate formal grounding in the background of a relevant framework has been introduced; this definition generates some intuitively acceptable grounding principles for relevant implication. In the present paper our aim is to construct a logic for the notion of complete and immediate formal grounding in a relevant framework based on that definition. Our logic will have the form of a calculus of natural deduction and will formalize the relation of grounding both as a meta-linguistic relation and as a connective. The calculus will contain grounding rules for relevant implication and will be proved to be sound and complete with respect to the original definition. Finally we will prove the deduction theorem at the grounding level, i.e. we will show that grounding formalized as a metalinguistic relation is equivalent to grounding formalized as a connective."
References
Poggiolesi, F. (2020a). Grounding principles for (relevant) implication. *Synthese* , pages 1-28.

273.   ———. 2020. "Logics." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 213-227. New York: Routledge.
"The concept of grounding has been long neglected or forgotten in the history of logic (exceptions can be found in this book, as in Chapter 5 by Roski).This fact is all the more astonishing once we realize that grounding seems to cover the same special logical role as the kindred notions of truth and provability: like its cousin concepts, grounding can be fruitfully formalized into two different ways, namely as (i) a predicate or sentential operator or as (ii) a metalinguistic relation.This double formalization,which testifies to the importance of grounding as a logical notion, will structure this chapter.The next section will be dedicated to studies of grounding under the perspective of (i), which is the most developed in the contemporary literature; while Section 3 will focus on approaches adopting perspective (ii)." (p. 214)

274.   ———. 2021. "Grounding Principles for (Relevant) Implication." *Synthese* no. 198:7351–7376.
Abstract: "Most of the logics of grounding that have so far been proposed contain grounding axioms, or grounding rules, for the connectives of conjunction, disjunction and negation, but little attention has been dedicated to the implication connective. The present paper aims at repairing this situation by proposing adequate grounding principles for relevant implication. Because of the interaction between negation and implication, new grounding principles concerning negation will also arise."

275.   Prasada, Sandeep. 2021. "Formal Explanation and Mechanisms of Conceptual Representation." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by

Jansen, Ludger and Sandstad, Petter, 269-286. New York: Routledge.
"The plan for the paper is as follows. Section 2 provides a sketch of the empirical research that suggests that children and adults routinely make use of formal explanations. Section 3 defends the interpretation of those data as revealing the use of Aristotle's formal *aitia* in generating those explanations. I leave the Greek term *aitia* untranslated as common translations tend to be problematic. Section 4 describes the formal characteristics of the mechanisms that have been proposed to underlie the representation and acquisition of the type of generic knowledge for which formal explanation is intrinsic. Section 5 discusses some of the key characteristics of the mechanisms and the manner in which the mechanisms represent the type of generic knowledge for which formal explanations are crucial. Finally, Section 6 suggests some ways in which the work described may provide a new way to look at some Aristotelian claims regarding the acquisition of first principles and the role of formal explanation in that process." (p. 269)

276.   Rabin, Gabriel Oak. 2018. "Grounding Orthodoxy and the Layered Conception." In *Reality and its Structure: Essays in Fundamentality* , edited by Bliss, Ricki Leigh and Priest, Graham, 37-49. New York: Oxford University Press.
"Here's a roadmap for the remainder of the paper. In the next section (2: "Ground as the Generator as Layers"), we put some flesh on the bones of the idea of the layered conception and how ground interacts with it. Each of Sections 3-6 explores how ground fares in its ability to vindicate the layered conception under the relaxation of some element of the orthodoxy. We consider abandoning foundationalism, antisymmetry,
irreflexivity, and transitivity (in that order). The conclusory Section 7 steps back to consider the resulting overall picture." (p.39)

277.   ———. 2019. "Grounding the Gaps or Bumping the Rug? On Explanatory Gaps and Metaphysical Methodology." *Journal of Consciousness Studies* no. 26:191-203.
Abstract: In a series of recent papers, Jonathan Schaffer (2017a,b) presents a novel framework for understanding grounding. Metaphysical laws play a central role. In addition, Schaffer argues that, contrary to what many have thought, there is no special 'explanatory gap' between consciousness and the physical world. Instead, explanatory gaps are everywhere. I draw out and criticize the methodology for metaphysics implicit in Schaffer's presentation. In addition, I argue that even if we accept Schaffer's picture, there remains a residual explanatory gap between consciousness and the physical. The residual gap does most of the same philosophical work as the original (e.g. in conceivability arguments). Schaffer has introduced a troublesome metaphysical methodology that fails to follow through on its biggest promise: to deflate the explanatory gap."
References
Schaffer, J. (2017a) Functionalism as a grounding principle, presented at Grounding and Consciousness, NYU Florence, August 2017.
Schaffer, J. (2017b) The ground between the gaps, *Philosopher's Imprint* , 17 (11).

278.   Rabin, Gabriel Oak, and Rabern, Brian. 2016. "Well Founding Grounding Grounding." *Journal of Philosophical Logic* no. 45:349-379.
Abstract: "Those who wish to claim that all facts about grounding are themselves grounded ("the meta-grounding thesis") must defend against the charge that such a claim leads to infinite regress and violates the well-foundedness of ground. In this paper, we defend. First, we explore three distinct but related notions of "well-founded", which are often conflated, and three corresponding notions of infinite regress. We explore the entailment relations between these notions. We conclude that the meta-grounding thesis need not lead to tension with any of the three notions of "well-founded". Finally, we explore the details of and motivations for further conditions on ground that one might add to generate a conflict between the meta-grounding thesis and a well-founded constraint. We explore these topics by developing and utilizing a formal framework based on the notion of a *grounding structure.* "

279.   Rauti, Antonio. 2012. "Multiple Groundings and Deference." *The Philosophical Quarterly* no. 62:317-336.
Abstract: "The idea that reference is multiply grounded allows causal-historical theories of reference to account for reference change. It also threatens the stability of reference in light of widespread error and confusion. I describe the problem, so far unrecognised, and provide a solution based on the phenomenon of semantic deference, which I differentiate from reference-borrowing. I conclude that deference has an authentic foundational semantic role to play."

280.   Raven, Michael J. 2012. "In Defence of Ground." *Australasian Journal of Philosophy* no. 90:684-701.
Abstract: "I defend *(metaphysical) ground* against recent, unanswered objections aiming to dismiss it from serious philosophical inquiry. Interest in ground stems from its role in the venerable metaphysical project of identifying which facts hold in virtue of others. Recent work on ground focuses on regimenting it.
But many reject ground itself, seeing regimentation as yet another misguided attempt to regiment a bad idea (like phlogiston or astrology). I defend ground directly against objections that it is confused, incoherent, or fruitless. This vindicates the very attempt to regiment ground. It also refocuses our attention on the genuine open questions about ground and away from the distracting, unpersuasive reasons for dismissing them."

281.   ———. 2013. "Is Ground a Strict Partial Order?" *American Philosophical Quarterly* no. 50:193-201.
"A Schism has formed among Devotees.
Orthodoxy says ground induces a strict partial order structure on reality, from the more derivative to the more fundamental. Heresy denies that ground is a strict partial order: ground is either not irreflexive (Jenkins 2011) or not transitive (Schaffer 2012).
What's at stake? The structure of reality, answer Devotees. Even Infidels have a stake: they might take Devotees' infighting as evidence against ground's coherence (cf. Wilson). My aim is to defend Orthodoxy against Heresy. I first characterize Orthodoxy (§ 2) and then the Heresy against it (§ 3). Next, I argue against the Heresy that ground is not irreflexive (§ 4) and then argue against the Heresy that ground is not transitive (§ 5). My defense of Orthodoxy vindicates ground's Orthodox deployment "in the wild" and weakens Infidels's attempts to leverage the Schism into an argument for ground's incoherence (§ 6)." (p. 193)
References
Jenkins, Carrie S. 2011. "Is Metaphysical Grounding Irreflexive?," *Monist* , vol. 94, no. 2, pp. 267-276.
Schaffer, Jonathan. 2012. "Grounding, Transitivity, and Contrastivity," in *Metaphysical Grounding: Understanding the Structure of Realit* y, ed. Fabrice Correia and Benjamin Schnieder (Cambridge: Cambridge University Press), pp. 122-138.
Wilson, Jessica. Unpublished manuscript. "No Work for a Theory of Grounding." [*Inquiry: An Interdisciplinary Journal of Philosophy* , 57, 2014, pp. 535-579]

282.   ———. 2015. "Ground." *Philosophy Compass* no. 10:322-333.
Abstract: "This essay focuses on a recently prominent notion of (metaphysical) ground which is distinctive for how it links metaphysics to explanation. Ground is supposed to serve both as the common factor in diverse in virtue of questions as well as the structuring relation in the project of explaining how some phenomena are "built" from more fundamental phenomena. My aim is to provide an opinionated synopsis of this notion of ground without engaging with others. Ground, so understood, generally resists illumination by appeal to more familiar models of explanation. Nevertheless, its distinctive explanatory and metaphysical aspects guide us on characterizing its explanatory logic and its metaphysical features. Some issues concerning the meta-question of what (if anything) grounds ground are explored, as well as some recent skeptical challenges to ground."

283.   ———. 2017. "New Work for a Theory of Ground." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 60:625-655.
Abstract: "There has been much recent interest in a distinctively metaphysical kind of determinative explanation: ground. This paper concerns various skeptical challenges to ground's relevance to metaphysics, such as that it is an empty posit, that the work it is supposed to do is appropriated by other notions, and that it is inapt for specific issues it should serve. I argue against these challenges. My strategy is both critical and constructive. Critical because I argue that versions of these challenges raised by Elizabeth Barnes, Kathrin Koslicki, Mari Mikkola, and Jessica Wilson are not persuasive. Constructive because we may nevertheless learn from them new work for ground."

284.   ———, ed. 2021. *The Routledge Handbook of Metaphysical Grounding* . New York: Routledge.
Contents: Notes on Contributors XIII, Acknowledgments XVII; 1. Michael J. Raven Introduction 1;

285.   Rettler, Bradley. 2017. "Grounds and 'Grounds'." *Canadian Journal of Philosophy* no. 47:631-655.
Abstract: "In this paper, I offer a new theory of grounding. The theory has is that grounding is a job description that is realized by different properties in different contexts.
Those properties play the grounding role contingently, and grounding is the property that plays the grounding role essentially. On this theory, grounding is monistic, but 'grounding' refers to different relations in different contexts. First, I argue against Kit Fine's monist univocalism. Next, I argue against Jessica Wilson's pluralist multivocalism. Finally, I introduce monist multivocalism, explicate three versions of it, and show its advantages."

286.   Richardson, Kevin. 2020. "Grounding Pluralism: Why and How." *Erkenntnis* no. 85:1399-1415.
Abstract: "Grounding pluralism is the view that there are multiple kinds of grounding. In this essay, I motivate and defend an explanation-theoretic view of grounding pluralism.
Specifically, I argue that there are two kinds of grounding: why-grounding—which tells us why things are the case—and how-grounding—which tells us how things are the case."

287.   ———. 2020. "Varieties." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 194-208. New York: Routledge.
"In this chapter,I describe the state of the art for pluralist theories of grounding.Every pluralist must answer four questions:
• Why should one be a pluralist rather than a monist? (§2)
• What are the varieties of grounding? (§3)
• What is the sense (if any) in which grounding is unified? (§4)
• What is the meaning of "grounds"? (§5)
In what follows, I give various representative pluralist answers to these questions."

288.   ———. 2021. "Grounding Is Necessary and Contingent." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 64:453-480.
Abstract: "Grounding is necessary just in case: if P grounds Q, then necessarily: if P, then Q. Many accept this principle. Others propose counterexamples. Instead of straightforwardly arguing for, or against, necessity, I explain the sense in which grounding is necessary and contingent. I argue that there are two kinds of grounding: what-grounding (which tells us what it is for things to be the case) and why-grounding (which tells us why things are the case), where the former kind is necessary while the latter is contingent."

289.   Roca-Royes, Sonia. 2016. "Rethinking Origin Essentialism (for Artefacts)." In *Reality Making* , edited by Jago, Mark, 152-176. Oxford: Oxford University Press.
Contents: List of Figures VII; List of Contributors VIII; Mark Jago: Reality-Making: Introduction 1; Martin Glazier: Laws and the Completeness of the Fundamental 11; Naomi Thompson: Metaphysical Interdependence 38; Jacek Brzozowski: Monism and Gunk 57; Matthew Tugby: What are Dispositional Properties? 75; Mark Jago: Essence and the Grounding Problem 99; Nicholas K. Jones: Object as a Determinable 121; Sonia Roca-Royes: Rethinking Origin Essentialism (for Artefacts) 152; Nathan Wildman: How (not) to be a Modalist About Essence 177; Index 197-200.

290.   Rodriguez-Pereyra, Gonzalo. 2005. "Why Truthmakers." In *Truthmakers: The Contemporary Debate* , edited by Beebee, Helen and Dodd, Julian, 17-31. Oxford: Clarendon Press.
"Thus the insight behind the idea of truthmakers is that truth is grounded.
In other words, truth is not primitive. If a certain proposition is true, then it owes its truth to something else: its truth is not a primitive, brute, ultimate fact. The truth of a proposition thus depends on what reality, and in particular its subject matter, is like. What reality is like is anterior to the truth of the proposition, it gives rise to the truth of the proposition and thereby accounts for it." (p. 21, a note omitted)

291.   ———. 2015. "Grounding Is Not a Strict Order." *Journal of the American Philosophical Association* no. 1:517-534.
Abstract: "The paper argues that grounding is neither irreflexive nor asymmetric nor transitive. In arguing for that conclusion the paper also argues thattruthmaking is neither irreflexive nor asymmetric nor transitive."

292.   Roland, Jeffrey W. 2010. "Concept Grounding and Knowledge of Set Theory." *Philosophia* no. 38:179-193.
Abstract: "Abstract C. S. Jenkins has recently proposed an account of arithmetical knowledge designed to be realist, empiricist, and apriorist: realist in that what's the case in arithmetic doesn't rely on us being any particular way; empiricist in that

arithmetic knowledge crucially depends on the senses; and apriorist in that it accommodates the time-honored judgment that there is something special about arithmetical knowledge, something we have historically labeled with 'a priori'. I'm here concerned with the prospects for extending Jenkins's account beyond arithmetic—in particular, to set theory. After setting out the central elements of Jenkins's account and entertaining challenges to extending it to set theory, I conclude that a satisfactory such extension is unlikely."
References
Jenkins, C. S. (2008). *Grounding concepts: An empirical basis for arithmetic knowledge* . Oxford: Oxford University Press.

293.   Rooney, James Dominic. 2019. "Grounding Relations Are Not Unified: Aquinas and Heil versus Schaffer." *International Philosophical Quarterly* no. 59:57-64.
Abstract: "Jonathan Schaffer, among others, has argued that metaphysics should deal primarily with relations of "grounding." I will follow John Heil in arguing that this view of metaphysics is problematic, for it draws on ambiguous notions of grounding and fundamentality that are unilluminating as metaphysical explanations. I take Heil's objections to presuppose that "grounding" relations do not form a natural class, where a natural class is one where some member of that class has (analytic or contingent a posteriori) priority among others and explains order among other members in the class. To strengthen Heil's criticism that "grounding" is a non-natural class of relations, I will draw on an unlikely ally. Thomas Aquinas's "analogy of being" doctrine, if accurate, offers reasons that no categorical relations (like grounding relations) form a natural class."

294.   Rosa, Luis. 2019. "Knowledge Grounded on Pure Reasoning." *Pacific Philosophical Quarterly* no. 100:156-173.
Abstract: "In this paper, I deal with epistemological issues that stem from the hypothesis that reasoning is not only a means of transmitting knowledge from premise-beliefs to conclusion-beliefs but also a primary source of knowledge in its own right. The idea is that one can gain new knowledge on the basis of suppositional reasoning. After making some preliminary distinctions, I argue that there are no good reasons to think that purported examples of knowledge grounded on pure reasoning are just examples of premise-based inferences in disguise. Next, I establish what kinds of true propositions can to a first approximation be known on the basis of pure reasoning. Finally, I argue that beliefs that are competently formed on the basis of suppositional reasoning satisfy both externalist and internalist criteria of justification."

295.   Rosen, Gideon. 2010. "Metaphysical Dependence: Grounding and Reduction." In *Modality: Metaphysics, Logic, and Epistemology* , edited by Hale, Bob and Hoffmann, Aviv, 109-135. New York: Oxford University Press.
"Introduction: This essay is a plea for ideological toleration. Philosophers are right to be fussy about the words they use, especially in metaphysics where bad vocabulary has been a source of grief down through the ages. But they can sometimes be too fussy, dismissing as 'unintelligible' or 'obscure' certain forms of language that are perfectly meaningful by ordinary standards and which may be of some real use.
So it is, I suggest, with certain idioms of metaphysical determination and dependence. We say that one class of facts *depends upon* or *is grounded* in another. We say that a thing possesses one property in virtue of possessing another, or that one proposition makes another true. These idioms are common, as we shall see, but they are not part of anyone's official vocabulary. The general tendency is to admit them for heuristic purposes, where the aim is to point the reader's nose in the direction of some philosophical thesis, but then to suppress them in favor of other, allegedly more hygienic formulations when the time comes to say *exactly* what we mean. The thought is apparently widespread that while these ubiquitous idioms are sometimes convenient, they are ultimately too unclear or too confused, or perhaps simply too exotic to figure in our first-class philosophical vocabulary.

Against this tendency, I suggest that with a minimum of regimentation these metaphysical notions can be rendered clear enough, and that much is to be gained by incorporating them into our analytic tool kit. I make this proposal in an experimental spirit. Let us see how things look if we relax our antiseptic scruples for a moment and admit the idioms of metaphysical dependence into our official lexicon alongside the modal notions (metaphysical necessity and possibility, the various forms of supervenience) with which they are often said to contrast unfavorably. If this only muddies the waters, nothing is lost; we can always retrench. If something is gained, however, as I believe it is, we may find ourselves in a position to make some progress. (pp. 109-110)

296.   ———. 2015. "Real Definition." *Analytic Philosophy* no. 56:189-209.
"The case can be made that contemporary analytic philosophy is up to its ears in idioms of definition, analysis, reduction and constitution that are best understood in a similarly metaphysical key—as demands for real definition rather than linguistic or conceptual analysis.
(...)
The main argument for this view is that when we try to answer these questions, we are happy to entertain analyses cast in terms that fully competent masters of the analysandum need not grasp.
(...)
In my travels I have encountered some resistance to this idea, even among philosophers who are otherwise sanguine about the recrudescence of premodern metaphysics in postmodern philosophy.
(...)
The best way to overcome this skepticism would be to explain, in clear and independently intelligible terms, what it is to define a thing, or in other words, to provide a (real) definition of (real) definition. The
aim of the present note is to do just that." (p. 189)

297.   ———. 2017. "Ground by Law." *Philosophical Issues* no. 27:279-301.
"It is a commonplace, or anyway it used to be, that one way to explain a fact is to subsume it, together with its conditions, under a general law.
(...)
Metaphysical grounding is an explanatory relation. When a set of facts grounds a fact A , the grounded fact obtains *because* its grounds obtain.
And so we might want to know whether laws play a similar role in the grounding explanation of particular facts, and if so, what that implies about the nature of those laws. This paper explores these questions." (p. 279, a note omitted)

298.   ———. 2017. "What Is a Moral Law?" *Oxford Studies in Metaethics* no. 12:135-159.
"The main metaphysical challenge for realists abut the normative is to characterize this explanatory connection between the particular normative facts and the non-normative facts that 'underlie' them. The most straightforward answer is ethical naturalism, which I take to be the view that every particular normative fact [Fa] is metaphysically grounded without remainder in facts whose constituents are 100 percent non-normative." (p. 135 notes omitted)
(...)
Naturalist and non-naturalist agree that particular moral facts [Fa] always stand in some explanatory relation to the non-normative facts in the vicinity. The non-naturalist's distinctive claim is that this relation is not the much-studied relation of metaphysical grounding; nor is it causation or any other familiar explanatory relation. The challenge for the non-naturalist is to give a positive account of this connection." (pp. 136-137)

299.   ———. 2017. "Metaphysical Relations in Metaethics." In *The Routledge Handbook of Metaethics* , edited by McPherson, Tristam and Plunkett, David, 151-169. New York: Routledge.

"This chapter aims to clarify a question that can be vaguely put as follows: How are the normative facts related to the natural facts?

(...)

Our discussion assumes that there are normative facts—facts about the normative properties of things and the normative relations in which they stand. It also assumes that some facts are clearly "natural," e.g., the fact that the fish will die if they are not fed.

The challenge is to say how facts of the first sort are related to facts of the second sort.

But it must be conceded at the outset that this question is not exactly clear. When we ask how the normative is "related" to the natural, what sort of information are we seeking?

The best way to clarify a question that is unclear in this way is to say what would count as an answer to it, so the plan for what follows is to do just that. Recent work in general metaphysics provides a vocabulary in which hypotheses about the relation between the normative and the natural can be stated with some precision. This chapter explains that vocabulary by putting it to work for the purpose of providing a taxonomy of answers to our target question." (p. 151)

300.　　Roski, Stefan. 2018. "Grounding and the Explanatory Role of Generalizations." *Philosophical Studies* no. 175:1985-2003.

Abstract: "According to Hempel's *(Aspects of scientific explanation and other essays.* The Free Press, New York, 1965) influential theory of explanation, explaining why some a is G consists in showing that the truth that a is G follows from a law-like generalization to the effect that all Fs are G together with the initial condition that a is F. While Hempel's overall account is now widely considered to be deeply flawed, the idea that some generalizations play the explanatory role that the account predicts is still often endorsed by contemporary philosophers of science.

This idea, however, conflicts with widely shared views in metaphysics according to which the generalization that all Fs are G is partially explained by the fact that a is G. I discuss two solutions to this conflict that have been proposed recently, argue that they are unsatisfactory, and offer an alternative."

301.　　Russell, Jeffrey Sanford. 2016. "Qualitative Grounds." *Philosophical Perspectives* no. 30:309-348.

"Ground and Necessity: Shamik Dasgupta argues that we shouldn't think there are any fundamental facts about particular individuals: these would be undetectable danglers, redundant to our scientific explanations (2009; 2014; forthcoming; see also 2011; 2013).

Rather, we should hold that all facts about particular individuals are grounded in what the world is like qualitatively.(1) All non-qualitative facts hold in virtue of qualitative facts. He calls this "qualitativism". (Other names for the view are "generalism", "structuralism", or "metaphysical anti-haecceitism".) I'll call it the Qualitative Grounds thesis. I find this thesis intriguing, but I don't entirely understand it. In this paper I strive to get a clearer view of what it really involves." (p. 309)

References

Dasgupta, Shamik. (2009). "Individuals: An Essay in Revisionary Metaphysics." *Philosophical Studies* 145(1): 35–67.

———. (2011). "The Bare Necessities." *Philosophical Perspectives* 25(1): 115–60.

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———. (2014). "On the Plurality of Grounds." *Philosopher's Imprint* 14(20): 1–28.

———. (forthcoming [2017]). "Quality and Structure." In Elizabeth Barnes (ed.), *Current Controversies in Metaphysics,* Routledge, [with the title *Can We Do Without Fundamental Individuals? Yes* pp. 7-23]

302. Rydéhn, Henrik. 2018. "Grounding and Ontological dependence." *Synthese* no. 198:1231-1256.
Abstract: "Recent metaphysics has seen a surge of interest in grounding—a relation of non-causal determination underlying a distinctive kind of explanation common in philosophy. In this article, I investigate the connection between grounding and another phenomenon of great interest to metaphysics: ontological dependence. There are interesting parallels between the two phenomena: for example, both are commonly invoked through the use of "dependence" terminology, and there is a great deal of overlap in the motivations typically appealed to when introducing them. I approach the question of the relationship between grounding and ontological dependence through an investigation of their modal connections (or lack thereof). I argue, firstly, that on the common assumption that grounding is factive, it can be shown that no known variety of rigid ontological dependence is either necessary or sufficient for grounding. I also offer some suggestions in support of the claim that this generalizes to every possible form of rigid ontological dependence. I then broaden the discussion by considering a non-factive conception of grounding, as well as by looking at forms of generic (rather than rigid) ontological dependence. I argue that there is at least one form of rigid ontological dependence that is sufficient for non-factive grounding, and that a form of generic dependence may be necessary (but not sufficient) both for factive and non-factive grounding. However, justifying even these fairly weak modal connections between grounding and ontological dependence turns out to require some quite specific and substantive assumptions about the two phenomena that have only rarely been discussed."

303. Saenz, Noël B. 2015. "A Grounding Solution to the Grounding Problem." *Philosophical Studies* no. 172:2193-2214.
Abstract: "The statue and the lump of clay that constitutes it fail to share all of their kind and modal properties. Therefore, by Leibniz's Law, the statue is not the lump. Question: What grounds the kind and modal differences between the statue and the lump? In virtue of what is it that the lump of clay, but not the statue, can survive being smashed? This is the grounding problem. Now a number of solutions to the grounding problem require that we substantially revise our view of reality. In this paper, I provide a solution to this problem that does not require such a revision. I then show how my solution to the grounding problem can solve a related problem and answer a related question. The upshot is that the solution I offer is not only nonrevisionary, but also fruitful."

304. ———. 2020. "Ontology." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 361-374. New York: Routledge.
"In this chapter, I will explore a number of ways the literature has said that grounding and ontology relate. To summarize: §2 concerns itself with grounding's ability to save the ontology: to provide a safe and sane way of quantifying over certain kinds of things in our theories. §3 with its ability to price the ontology: to show how we should measure ontological simplicity. And §4 with its ability to restrict derivative ontology: to restrict what can be grounded from what.(7)" (pp. 361-362)
(7) Notice that we can also ask what ontology has to "say" about grounding.This can be divided into two. We can ask about the ontology of grounding: does grounding exist? But we can also ask about what an ontology has to say about grounding: given a preferred ontology, how should we think about grounding? Since we need to assume that grounding exists in order to discuss its import on ontology, and since this chapter is devoted to applying grounding to ontology and not ontologies to grounding, I will not address these questions here.

305. Sandstad, Petter, and Jansen, Ludger. 2021. "A Non-hylomorphic Account of Formal Causation." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 65-86. New York: Routledge.
"In this paper, we develop our own account of formal causation, which is basically inspired by Aristotle's views and might, in a way, be seen as a development of

Lowe's. In Section 2, we present the basic framework of our own account of formal causation. In Section 3, we make clear that our view of formal causation is not committed to, though consistent with, (i) any specific view on universals, (ii) hylomorphism, (iii) individual forms, and (iv) biological kinds, social entities, artefacts, etc. as real kinds. Our view thus has fewer ontological commitments than many rival accounts of formal causation, and may therefore be of more general interest. In Section 4, we contrast our variant of formal causation with a more traditional hylomorphic account. In Section 5, we argue that formal causation is indispensable in explanation, and, more controversially, that it is a type of causation. To back up this position, we explore in Section 6 the dependence relations involved in cases of formal causation, such that formal causes are difference-makers. The seventh section concerns epistemological issues." (p. 66) References
Lowe, E. J. (2006) *The Four-Category Ontology: A Metaphysical Foundation for Natural Science* . Oxford: Oxford University Pres

306.   Sattler, Wolfgang. 2021. "Finean Feature Dependence and the Aristotelian Alternative." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 175-200. New York: Routledge.
"In his seminal paper 'Essence and Modality' Kit Fine argues that traditionally there have been two distinct approaches to essentialism."
(...)
In this paper I discuss the application first of Fine's and then of Aristotle's account of 'ontological dependence' to cases where an attribute that is accidental to its subject(s), depends ontologically on its subject(s). I start with a short exposition of Fine's account of ontological dependence and then apply it to cases concerning accidental attributes, first conceived as 'Aristotelian universals' (in the modern sense of that term), and then conceived as tropes of a sort (Section 2). I then do the same with respect to Aristotle's account (Section 3). I argue, for one, that there are clear differences between the results of applying Fine's account and of applying Aristotle's account. Moreover, some of the results following from Fine's account are prima facie implausible.
(...)
In the last section (4) I argue that the difference in results between applying Fine's account and applying Aristotle's account reflects a difference in method and in commitment between these accounts. I then suggest, and argue in outline for an explanation of these differences, namely, that Fine's essentialism and Aristotle's essentialism aim to explain somewhat different things. And this entails that the notions of what something is and of essence are conceived differently within these two theories." (pp. 175-176, a note omitted)

307.   Savu, Bianca-Alexandra. 2017. "Grounds and Structural Realism: A Possible Metaphysical Framework." *Symposion. Theoretical and Applied Inquiries in Philosophy and Social Sciences* :97-106.
Abstract: "This article discusses the proposal of accommodating grounding theories and structural realism, with the aim to provide a metaphysical framework for structural realism (ST). Ontic structural realism (OSR), one of the most accepted metaphysical versions for structural realism, is taken into account here, with the intention of analyzing the framework in which GT and OSR are compatible, and to what extent."

308.   Schaffer, Jonathan. 2009. "On What Grounds What." In *Metametaphysics: New Essays on the Foundations of Ontology* , edited by Chalmers, David, Manley, David and Wasserman, Ryan, 347-383. Oxford: Clarendon Press.
"On the now dominant Quinean view, metaphysics is about what there is. Metaphysics so conceived is concerned with such questions as whether properties exist, whether meanings exist, and whether numbers exist. I will argue for the revival of a more traditional Aristotelian view, on which metaphysics is about what grounds what. Metaphysics so revived does not bother asking whether properties,

meanings, and numbers exist. Of course they do! The question is whether or not they are fundamental.
In §1 I will distinguish three conceptions of metaphysical structure. In §2 I will defend the Aristotelian view, coupled with a permissive line on existence. In §3 I will further develop a neo-Aristotelian framework, built around primitive grounding relations." (p. 347)

309.   ————. 2010. "Monism: The Priority of theWhole." *Philosophical Review* no. 119:31-76.
"The *monist* holds that the whole is prior to its parts, and thusviews the cosmos as fundamental, with metaphysical explanation dangling downward from the One. The *pluralist* holds that the parts are prior to their whole, and thus tends to consider particles fundamental, with metaphysical explanation snaking upward from the many. Just as the materialist and idealist debate which properties are fundamental, so the monist and pluralist debate which objects are fundamental.
I will defend the monistic view. In particular I will argue that there are physical and modal considerations that favor the priority of the whole.
Physically, there is good evidence that the cosmos forms an entangled system and good reason to treat entangled systems as irreducible wholes. Modally, mereology allows for the possibility of atomless gunk, with no ultimate parts for the pluralist to invoke as the ground of being." (pp. 31-32)

310.   ————. 2010. "The Least Discerning and Most Promiscuous Truthmaker." *Philosophical Quarterly* no. 60:307-324.
Abstract: "I argue that the one and only truthmaker is the world. This view can be seen as arising from (i) the view that truthmaking is a relation of grounding holding between true propositions and fundamental entities, together with (ii) the view that the world is the one and only fundamental entity. I argue that this view provides an elegant and economical account of the truthmakers, while solving the problem of negative existentials, in a way that proves ontologically revealing."

311.   ————. 2012. "Grounding, transitivity, and contrastivity." In *Metaphysical Grounding: Understanding the Structure of Reality* , edited by Correia, Fabrice and Schnieder, Benjamin, 122-138. Cambridge: Cambridge University Press.
"Grounding is generally assumed to be transitive. The assumption of transitivity is natural. For instance, if the physical system grounds the chemical arrangement, and the chemical arrangement grounds the biological organism, then it is natural to thereby infer that the physical system must ground the biological organism. Moreover the assumption of transitivity is useful. By treating grounding as transitive (and irreflexive), one generates a strict partial ordering that induces metaphysical structure.
Yet I will offer counterexamples to the transitivity of grounding. Such counterexamples should not be so surprising given that grounding is akin to causation, and that there are known counterexamples to the transitivity of causation. I will conclude by explaining how a contrastive approach can resolve the counterexamples while retaining metaphysical structure." (p. 121)

312.   ————. 2015. "What Not to Multiply Without Necessity." *Australasian Journal of Philosophy* no. 93:644-664.
"Introduction: The Razor commands: *Do not multiply entities without necessity!* Few principles are as pervasive in contemporary metaphysics. Yet I argue that the Razor is too blunt a measure of ontological economy, failing to distinguish fundamental from derivative entities. Instead I recommend the more precise *Laser* , which is focused specifically on fundamental entities, and commands: *Do not multiply fundamental entities without necessity!*
I argue that the Laser represents an improvement over the Razor, I connect the Laser to an underlying 'bang for the buck' methodology, and I trace the implications of this bang-for-the-buck methodology for certain metaphysical debates. What emerges is general pressure towards a *permissive* and abundant view of what there is, coupled with a restrictive and sparse view of what is fundamental.

Classical mereology and pure set theory come out as paradigms of methodological virtue, for making so much from so little.

In arguing that the Laser represents an improvement over the Razor, I take for granted that ontological economy is an aspect of rational theory choice.

(...)

My thesis is that, given that ontological economy is an aspect of rational theory choice, this notion of economy is better scanned through the Laser.

313. ———. 2016. "Grounding in the Image of Causation." *Philosophical Studies* no. 173:49-100.

Abstract: "Grounding is often glossed as metaphysical causation, yet no current theory of grounding looks remotely like a plausible treatment of causation. I propose to take the analogy between grounding and causation seriously, by providing an account of grounding in the image of causation, on the template of structural equation models for causation."

314. ———. 2016. "Ground Rules: Lessons from Wilson." In *Scientific Composition and Metaphysical Ground* , edited by Aizawa, Ken and Gillett, Carl, 143-170. London: Palgrave-Macmillan.

"*Overview* : In section "A Brief Introduction to Grounding", I offer a brief introduction to the notion of grounding. In sections "Are Grounding Claims Informative? and Are Grounding Claims Helpful?", I take up Wilson's two main objections to grounding-based approaches—that bare grounding claims are uninformative, and that such claims are unhelpful—and extract two main lessons. In section "Wilson's Pluralistic Framework", I critique Wilson's rival pluralistic approach for, among other things, not taking up Wilson's own lessons. I conclude in section "Structural Equation Models to the Rescue" by explaining how an approach based on structural equation models for grounding has a special claim to adequacy." (p. 144)

References

Wilson, J. M. (2014). No work for a theory of grounding. Inquiry, 57, 535–79.

315. ———. 2017. "The Ground Between the Gaps." *Philosophers' Imprint* no. 17:1-26.

"*Overview* : In §1 I review and clarify the idea there is a special explanatory gap arising between the physical and the phenomenal. In §2 I examine the usual "transparent" connections such as between the H, H, and O atoms and the H_2O molecule they compose, and argue that such transitions require substantive metaphysical principles (in this case mereological principles about both the existence and the nature of wholes). In §3 I offer a more theoretical route to the more general conclusion that substantive metaphysical principles are needed in all concrete cases, by presenting a formalism for grounding relations generally (based on structural equation models) which requires the specification of dependence functions. Finally, in §4 I articulate a form of physicalism — "ground physicalism" — on which the physical is the ultimate ground for the chemical, the biological, and the psychological, and show how it resolves explanatory gap worries." (p. 2)

316. ———. 2017. "Social Construction as Grounding; or: Fundamentality for Feminists, a Reply to Barnes and Mikkola." *Philosophical Studies* no. 174:2449-2465.

Abstract: "Feminist metaphysics is guided by the insight that gender is socially constructed, yet the metaphysics behind social construction remains obscure. Barnes and Mikkola charge that current metaphysical frameworks—including my grounding framework—are hostile to feminist metaphysics. I argue that not only is a grounding framework hospitable to feminist metaphysics, but also that a grounding framework can help shed light on the metaphysics behind social construction. By treating social construction claims as grounding claims, the feminist metaphysician and the social ontologist both gain a way to integrate social construction claims into a general metaphysics, while accounting for the inferential connections between social construction and attendant notions such as dependence

and explanation. So I conclude that a grounding framework can be helpful for feminist metaphysics and social ontology."

317. ———. 2021. "Ground Functionalism." *Oxford Studies in Philosophy of Mind* no. 1:171-207.
"I have the bold ambition of reviving the hopeful materialist story, by adding a new chapter—*ground functionalism* —which integrates functionalist insights about the mind with ground-theoretic insights about explanation.
The ground functionalist posits a *mind making* principle linking material states to mental states via functional role, such that a properly choreographed system dances out a mind. I argue that ground functionalism preserves the insights of functionalism, while enabling a viable explanation for consciousness." (pp. 171-172)

318. Schnieder, Benjamin. 2006. "A Certain Kind of Trinity: Dependence, Substance, Explanation." *Philosophical Studies* no. 129:393-419.
Abstract: "The main contribution of this paper is a novel account of *ontological dependence* . While dependence is often explained in terms of modality and existence, there are relations of dependence that slip through the mesh of such an account. Starting from an idea proposed by Jonathan Lowe, the article develops an account of ontological dependence based on a notion of *explanation* ; on its basis, certain relations of dependence can be established that cannot be accounted by the modal-existential account.
Dependence is only one of two main topics of this paper, for it is approached via a discussion of the category of *substance* . On a traditional view, substances can be characterised as *independent* entities. Before the background of a modal-existential account of dependence, this idea appears problematic.
The proposed notion of *explanatory* dependence is shown to vindicate the traditional approach to substance."

319. ———. 2006. "Truth-Making without Truth-Makers." *Synthese* no. 152:21-46.
Abstract: "The article is primarily concerned with the notion of a truthmaker.
An explication for this notion is offered, which relates it to other notions of making something such-and-such. In particular, it is shown that the notion of a truth-maker is a close relative of a concept employed by van Inwagen in the formulation of his *Consequence Argument.* This circumstance helps understanding the general mechanisms of the concepts involved. Thus, a schematic explication of a whole battery of related notions is offered. It is based on an explanatory notion, introduced by the sentential connector "because", whose function is examined in some detail. Finally, on the basis of the explication proposed, an argument is developed to the effect that the objects usually regarded as truthmakers are not apt to play this role."

320. ———. 2010. "A Puzzle about 'Because'." *Logique et Analyse* no. 53:317-343.
Abstract: "The essay is a partial investigation into the semantics of the explanatory connective 'because'. After three independently plausible assumptions about 'because' are presented in some detail, it is shown how their interaction generates a puzzle about 'because', once they are combined with a common view on conceptual analysis. Four possible solutions to the puzzle are considered."

321. ———. 2011. "A Logic for 'Because'." *The Review of Symbolic Logic* no. 4:445-465.
Abstract: "In spite of its significance for everyday and philosophical discourse, the explanatory connective 'because' has not received much treatment in the philosophy of logic. The present paper develops a logic for 'because' based on systematic connections between 'because' and the truth-functional connectives."

322. ———. 2016. "In Defence of a Logic for 'Because'." *Journal of Applied Non-Classical Logics* :160-171.
Abstract: "The present author developed a calculus for the logic of 'because'.
In a recent paper in this journal, it has been claimed that the central inference rules for the logic are invalid and that the intuition upon which the rules are based is not

accounted for. This note criticises these arguments and presents an independent argument in favour of the rules used in the logic."
References
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323.   ———. 2018. "On Ground and Consequence." *Synthese* no. 198:1335-1363.
Abstract: "What does it mean that some proposition follows from others? The standard way of spelling out the notion proceeds in modal terms: x follows from y iff necessarily, if y is true, so is x. But although this yields a useful and manageable account of consequence, it fails to capture certain aspects of our pre-theoretical understanding of consequence. In this paper, an alternative notion of logical consequence, based on the idea of grounding, is developed."

324.   ———. 2019. "On the Relevance of Grounds." In *Quo Vadis, Metaphysics?: Essays in Honor of Peter van Inwagen* , edited by Szatkowski, Mirosław, 59-82. Berlin: de Gruyter.
Abstract: "Three traditional philosophical issues that van Inwagen discusses in his metaphysical works are the Principle of Sufficient Reason, the question of why there is something rather than nothing, and the question of whether free will is compatible with determinism. The three topics are connected by a conceptual tie: the notion of a ground. In this essay, it is argued that van Inwagen's take on the three topics, ingenious as it otherwise is, suffers from an inadequate conception of the underlying notion of a ground."

325.   ———. 2020. "Grounding and Dependence." *Synthese* no. 197:95-124.
Abstract: "The paper deals with the notions of grounding and of existential dependence.
It is shown that cases of existential dependence seem to be systematically correlated to cases of grounding and hence the question is raised what sort of tie might hold the two notions together so as to account for the observed correlation. The paper focusses on three possible ties between grounding and existential dependence: identity (as suggested in Jonathan Schaffer's works), definition (as suggested by Fabrice Correia and Benjamin Schnieder), and grounding (as suggested by Kathrin Koslicki and Francesco Orilia). A case for the definitional tie is made."

326.   Schnieder, Benjamin, and Steinberg, Alex. 2016. "Without Reason?" *Pacific Philosophical Quarterly* no. 97:523-541.
Abstract: "The argument for modal collapse is partly responsible for the widespread rejection of the so-called Principle of Sufficient Reason (PSR) in recent times. This paper discusses the PSR against the background of the recent debate about grounding and develops principled reasons for rejecting the argument from modal collapse."

327.   Schnieder, Benjamin, and Werner, Jonas. 2021. "An Aristotelian Approach to Existential Dependence." In *Neo-Aristotelian Perspectives on Formal Causation* , edited by Jansen, Ludger and Sandstad, Petter, 151-174. New York: Routledge.
"According to W. V. Quine, the goal of ontology is simply to determine what there is. But neo-Aristotelians think that this leaves out a crucial aspect of the ontological enterprise. For, not all entities are born equal.
Some entities exist only derivatively: they depend for their existence on other, more fundamental, entities which make the former exist. To study such existential dependencies is a central task of ontology." (p. 151)

328.   Schulte, Peter. 2019. "Grounding Nominalism." *Pacific Philosophical Quarterly* no. 100:482-505.
Abstract: "The notion of grounding has gained increasing acceptance among metaphysicians in recent years. In this paper, I argue that this notion can be used to formulate a very attractive version of (property) nominalism, a view that I call 'grounding nominalism'. Simplifying somewhat, this is the view that *all properties are grounded in things* . I argue that this view is coherent and has a decisive

advantage over competing versions of nominalism: it allows us to accept properties as real, while fully accommodating nominalist intuitions. Finally, I defend grounding nominalism against several seemingly troublesome objections."

329.   Sher, Gila. 2019. "Where Are You Going, Metaphysics, and How Are You Getting There? – Grounding Theory as a Case Study." In *Quo Vadis, Metaphysics?: Essays in Honor of Peter van Inwagen* , edited by Szatkowski, Mirosław, 37-57. Berlin: de Gruyter.

Abstract: "The viability of metaphysics as a field of knowledge has been challenged time and again. But in spite of the continuing tendency to dismiss metaphysics, there has been considerable progress in this field in the 20th- and 21st-centuries. One of the newest – though, in a sense, also oldest – frontiers of metaphysics is the grounding project. In this paper I raise a methodological challenge to the new grounding project and propose a constructive solution. Both the challenge and its solution apply to metaphysics in general, but grounding theory puts the challenge in an especially sharp focus. The solution consists of a new methodology, *holistic grounding* or *holistic metaphysics* . This methodology is modeled after a recent epistemic methodology, *foundational holism* , that enables us to pursue the foundational project of epistemology without being hampered by the problems associated with foundationalism."

330.   Shumener, Eric. 2020. "Identity." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 413-424. New York: Routledge.
"This chapter concerns the nature of identity criteria and the relationship between ground and facts of identity or distinctness.After some preliminaries in Section I, we turn to formulations of identity criteria in terms of ground in Section II. Section III explores reasons for and against taking identity and distinctness facts to be fundamental. Section IV tackles specific proposals for grounding identity and distinctness facts." (p. 413)

331.   Sider, Theodore. 2020. "Ground Grounded." *Philosophical Studies* no. 177:747-767.

Abstract: "Most facts of grounding involve nonfundamental concepts, and thus must themselves be grounded. But how? The leading approaches—due to Bennett, deRosset, and Dagupta—are subject to objections. The way forward is to deny a presupposition common to the leading approaches, that there must be some simple formula governing how grounding facts are grounded. Everyone agrees that facts about cities might be grounded in some complex way about which we know little; we should say the same about the facts of grounding themselves. The kinds of facts that might enter into the grounds of the facts of grounding are explored at length."

332.   Sijuwade, Joshua. 2021. "Grounding and the Existence of God." *Metaphysica* . First online December 16, 2021.

Abstract: "In this article, I seek to assess the extent to which Theism, the claim that there is a God, can provide a true fundamental explanation for the instantiation of the grounding relation that connects the various entities within the layered structure of reality. More precisely, I seek to utilise the explanatory framework of Richard Swinburne within a specific metaphysical context, a ground-theoretic context, which will enable me to develop a true fundamental explanation for the existence of grounding. And thus, given the truth of this type of explanation, we will have a further reason to believe in the existence of God."

333.   Sirkel, Riin, and Tahko, Tuomas E. 2014. "Editorial: Aristotelian Metaphysics: Essence and Ground." *Studia Philosophica Estonica* no. 7:1-4.
Articles: Justin Zylstra: Dependence and Fundamentality 5-28; Margaret Anne Cameron: Is Ground Said-in-Many-Ways? 29-55; Pablo Carnino: On the Reduction of Grounding to Essence 56-71; Ryan Christensen: Essence, Essence, and Essence 72-87; Lucas Angioni: Aristotle on Necessary Principles and on Explaining X through X's essence 88-112; Kathrin Koslicki: The Causal Priority of Form in Aristotle 113-141; Michail Peramatzis: Sameness, Definition, and Essence 142-167;

Christine J. Thomas: Plato on Metaphysical Explanation: Does 'Participating' Mean Nothing? 168-194; Travis Dumsday: E.J. Lowe on the Unity Problem 195-218. "This special issue of *Studia Philosophica Estonica* centers around Aristotelian metaphysics, construed broadly to cover both scholarly research on Aristotle's metaphysics as well as work by contemporary metaphysicians on Aristotelian themes.

(...)

"The contribution this special issue makes to the ongoing discussion is twofold. First, the special issue promotes a deeper interaction between scholars of Aristotle and contemporary metaphysicians. We hope that the papers encourage people working in the history of philosophy to relate to contemporary discussions and people working in contemporary metaphysics to engage with Aristotle and Ancient scholarship. Second, the special issue is unified in its focus on two themes in Aristotelian metaphysics, essence and grounding. The papers address questions concerning fundamentality and dependence, ontological independence or priority, the causal priority of forms, the unity of grounding, the reduction of grounding to essence, the unity of essence, the roles of essence, and explanation and definition. We hope that this issue opens up fresh and exciting avenues for future research both in Ancient scholarship as well as in contemporary metaphysics. A brief summary of the volume's papers follows."(p. 1)

334. Siscoe, Robert Weston. 2021. "Grounding and a Priori Epistemology: Challenges for Conceptualism." *Synthese* no. 199:11445-11463.
Abstract: "Traditional rationalist approaches to a priori epistemology have long been looked upon with suspicion for positing a faculty of rational intuition capable of knowing truths about the world apart from experience. Conceptualists have tried to fill this void with something more empirically tractable, arguing that we know a priori truths due to our understanding of concepts. All of this theorizing, however, has carried on while neglecting an entire cross section of such truths, the grounding claims that we know a priori. Taking a priori grounding into account poses a significant challenge to conceptualist accounts of a priori knowledge, as it is unclear how merely understanding conceptual connections can account for knowledge of grounding. The fact that we do know some grounding truths a priori, then, is a significant mark in traditional rationalism's favor, and the next frontier for those who aim to eliminate the mystery surrounding a priori knowledge."

335. ———. 2021. "Grounding, Understanding, and Explanation." *Pacific Philosophical Quarterly* .
Abstract: "Starting with the slogan that understanding is a 'knowledge of causes', Stephen Grimm and John Greco have argued that understanding comes from a knowledge of dependence relations. Grounding is the trendiest dependence relation on the market, and if Grimm and Greco are correct, then instances of grounding should also give rise to understanding. In this paper, I will show that this prediction is correct – grounding does indeed generate understanding in just the way that Grimm and Greco anticipate. However, grounding examples of understanding also show that Grimm and Greco are not telling the full story when it comes to understanding. Understanding can only be generated by a particular subset of dependence relations – those dependence relations that are also explanatory. Grimm and Greco should thus appeal to a privileged class of dependence relations, relations like grounding that can also give rise to explanation."

336. Skiles, Alexander. 2014. "Primitivism about Intrinsicality." In *Companion to Intrinsic Properties* , edited by Francescotti, Robert M., 221-252. Berlin: de Gruyter.
"Objections to the thesis that intrinsicality fails to succumb to reductive analysis have not been fully articulated or defended anywhere in the literature. Indeed, the thesis is rarely mentioned even as an option (let alone a live one). Nor has it been discussed what a viable account of intrinsicality along these lines could,or should, look like.

The goal of this chapter is to explore the prospects of the view I shall call *primitivism about intrinsicality* , and offer a limited defense. A key component of this limited defense consists simply in clarifying what it could be, exactly, for intrinsicality to be "primitive". As we shall see, at least some *prima facie* decisive objections to primitivism seem less convincing once this has been done.

Doing so is the task of section 1. In section 2, I then consider several arguments for primitivism about intrinsicality. And finally, in section 3, I consider several arguments against it." (p. 222, a note omitted)

337.   ———. 2015. "Against Grounding Necessitarianism." *Erkenntnis* no. 80:717-751.

Abstract: "Can there be grounding without necessitation? Can a fact obtain wholly in virtue of metaphysically more fundamental facts, even though there are possible worlds at which the latter facts obtain but not the former? It is an orthodoxy in recent literature about the nature of grounding, and in first-order philosophical disputes about what grounds what, that the answer is no. I will argue that the correct answer is yes. I present two novel arguments against grounding necessitarianism, and show that grounding contingentism is fully compatible with the various explanatory roles that grounding is widely thought to play."

338.   ———. 2020. "Necessity." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 148-163. New York: Routledge.

"In §1, I discuss the main arguments in the literature for necessitarianism and consider responses to them. In §2, contingentism is subjected to the same treatment. In §3, I survey the internalism versus externalism dispute. (Since the necessitarianism vs. contingentism dispute has been explored in more depth than the internalism vs. externalism dispute, and because many of the maneuvers available within the first dispute have analogues in the second, I will focus more attention on the former.)" (pp. 148-149)

339.   Skiles, Alexander, and Trogdon, Kelly. 2013. "Grounding." In *The Routledge Handbook of Metametaphysics* , edited by Bliss, Ricki and Miller, J. T. M., 199-210. New York: Routledge.

"Metametaphysics concerns foundational metaphysics. Questions of foundational metaphysics include: What is the subject matter of metaphysics? What are its aims? What is the methodology of metaphysics? Are metaphysical questions coherent? If so, are they substantive or trivial in nature? Some have claimed that the notion of grounding is useful in addressing such questions. In this chapter, we introduce some core debates about whether – and, if so, how – grounding should play a role in metametaphysics." (p. 199)

(...)

"In what follows, we focus on three of the most interesting and widely discussed roles that have been assigned to grounding in metametaphysics. Specifically, we consider how grounding might be relevant to whether metaphysical questions are substantive (§1), how to choose between metaphysical theories (§2), and how to understand so-called 'location problems' (§3)." (.p 200, anote omitted)

340.   ———. 2019. "Maurin on Grounding and Explanation." In *Maurinian Truths – Essays in Honour of Anna-Sofia Maurin on her 50th Birthday* , edited by Wahlberg, Tobias Hansson and Stenwall, Robin, 159-172. Lund: Lund University.

"In the classical and contemporary literature on grounding, explanatory language is routinely used to communicate what it is and to motivate substantive principles about how it behaves."

(...)

"Two views have emerged about how to answer this question.

Some stipulate that by 'grounding' they mean a distinctive form of determination, what we will call *determination*$_G$, where to determine is, roughly speaking, to *produce* or *bring about* (Audi 2012; Schaffer 2016; and Trogdon 2013)."

(...)

"Others stipulate that by 'grounding' they mean a distinctive form of explanation, what we will call *explanation$_G$* (Dasgupta 2017; Litland 2015; and Rosen 2010). (...)

As is customary, let us call the latter view *Unionism* (grounding is explanation$_G$) and the former view *Separatism* (grounding is determination$_G$).

Compatible with Separatism is the idea that there are conditions under which grounding backs or underwrites explanations, and Unionism is compatible with the view that there are conditions under which grounding itself is backed or underwritten by other relations.

In "Grounding and Explanation: It's Complicated" (2019), Anna-Sofia Maurin aims to show that, despite appearances, Unionism and Separatism in fact undermine the use that explanatory language has been put to in elucidating grounding, rather than undergird it. In what follows we will critically assess her interesting argument." (pp. 159-160)

References

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Litland, J. (2015) Grounding, Explanation, and the Limit of Internality, *Philosophical Review* 124, 481–532.

Maurin, A.-S. (2019) Grounding and Explanation: It's Complicated, *Philosophical Studies* 176, 1573–1594.

Rosen, G. (2010) Metaphysical Dependence: Grounding and Reduction. In R. Hale and A. Hoffman (eds.) *Modality: Metaphysics, Logic, and Epistemology* . Oxford: Oxford University Press.

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Trogdon, K. (2013) An Introduction to Grounding. In B. Schnieder, M. Hoeltje, & A. Steinberg (eds.), *Varieties of Dependence* . Munich: Philosophia Verlag.

341.　　　———. 2021. "Should Explanation Be a Guide to Ground?" *Philosophical Studies* no. 178:4083-4098.
Abstract: "Grounding and explanation are said to be intimately connected. Some even maintain that grounding just is a form of explanation. But grounding and explanation also seem importantly different—on the face of it, the former is 'worldy' or 'objective' while the latter isn't. In this paper, we develop and respond to an argument to the effect that there is no way to fruitfully address this tension that retains orthodox views about grounding and explanation but doesn't undermine a central piece of methodology, namely that explanation is a guide to ground."

342.　　　Skow, Bradford. 2016. *Reasons Why* . New York: Oxford University Press.
"Why-questions are important in metaphysics. The obvious example is their importance to the theory of grounding. Many metaphysicians are very busy producing theories of grounding—but what is grounding? A common strategy for helping initiates get a handle on the subject matter of these theories is to say that when one fact grounds another, the first may be used to answer the question why the second obtains. Another example of a part of metaphysics where why-questions are important is the theory of modality. If some fact F obtains in two possible worlds W andV, then those worlds are in one respect similar. Boris Kment argues, in "Counterfactuals and Explanation," that this respect of similarity matters for how close V and W are, in the sense of closeness relevant to evaluating counterfactuals, if and only if the question why F obtains has the same answer in both worlds." (p. 2)
References
Kment, Boris. "Counterfactuals and Explanation." *Mind* vol. 115, 2006, 261-309.

343.　　　Smithson, Robert. 2020. "Metaphysical and Conceptual Grounding." *Erkenntnis* no. 85:1501-1525.

Abstract: "In this paper, I clarify the relation between two types of grounding: metaphysical and conceptual. Metaphysical grounding relates entities at more and less fundamental ontological levels. Conceptual grounding relates semantically primitive sentences and semantically derivative sentences. It is important to distinguish these relations given that both types of grounding can underwrite non-causal "in-virtue-of" claims. In this paper, I argue that conceptual and metaphysical grounding are exclusive: if a given in-virtue-of claim involves conceptual grounding, then it does not involve metaphysical grounding. I then present two heuristics for deciding which type of grounding is relevant to a given case. These heuristics suggest that certain proposed cases of metaphysical grounding may not actually involve metaphysical grounding at all."

344. Solomyak, Olla. 2020. "Realism." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 375-386. New York: Routledge.
"Questions of ground and questions of realism appear to be tightly connected in a number of ways, but there has not been consensus on precisely how these connections should be understood nor a full explication of the various approaches one might take on this issue. My aim in this chapter will be to spell out several ways in which we might see these questions as connected and thereby clarify the role for questions of ground in metaphysical inquiry more generally." (p. 375)

345. Steinberg, Alex. 2013. "Supervenience: A Survey." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 123-166. Munich: Philosophia Verlag.
"Many philosophers think that an important sort of dependence that relates conjunctive facts to atomic facts and the primary colours to the specific shades can be captured by supervenience claims."
(...)
"Supervenience, then, promises to be one of the dependence relations that structure the world we live in. This paper aims to give an overview of the subject. Section 1 introduces the main kinds of supervenience.
Section 2 discusses their relations. And section 3 makes the case that purely modal definitions of supervenience can fruitfully be improved upon.
In the rest of the paper I will follow the bulk of the philosophical literature in focusing exclusively on properties as the relata of supervenience." (pp. 123-124)

346. Stenwall, Robin. 2017. "Causal Grounds for Negative Truths." *Philosophical Studies* no. 174:2973-2989.
Abstract: "Among truthmaker theorists it is generally thought that we are not able to use the entailment principle (i.e. the principle according to which truthmaking distributes across entailment) to ground negative truths. But these theorists usually only discuss truthmakers for truth-functional complexes, thereby overlooking the fact that there are non-truth-functional complexes whose truth values are not solely determined by the truth or falsity of their atomic propositions. And once we expand the class of truths that require their own bespoke truthmakers to also include these, there is no reason to exempt negative truths from grounding. For given that truthmaking is closed under entailment and every negative truths is entailed by some non-truth-functional complex or other, any resources rich enough to ground the truth of the latter will do the same job for the former."

347. ———. 2021. "A Grounding Physicalist Solution to the Causal Exclusion Problem." *Synthese* no. 198:11775-11795.
Abstract: "Remember how Kim (*Philos Perspect* 3:77–108, 1989, in: Heil and Mele (eds) *Mental causation* , Clarendon Press, Oxford, 1993b) used to argue against non-reductive physicalism to the effect that it cannot accommodate the causal efficacy of the mental?
The argument was that if physicalists accept the causal closure of the physical, they are faced with an exclusion problem. In the original version of the argument, the dependence holding between the mental and the physical was cashed out in terms of

supervenience. Due to the work or Fine (*Philos Perspect* 8:1–16, 1994) and others, we have since come to realize that modal notions are not well-suited to perform the work of properly characterizing dependence. As a consequence of this, an increasingly larger community of contemporary metaphysicians prefer to spell out mental-physical dependence in terms of a non-causal and non-reductive notion called grounding, which is intended to target a particular sort of metaphysical relation that takes us from ontologically less fundamental features of the world to that which is more fundamental. In this paper I join forces with those who think that this shift in focus is on the right track.
More specifically, I will argue that the grounding physicalist can solve the exclusion problem in a way that is preferable to the supervenience-based nonreductive physicalist solution, as well as in a way that is compatible with the externalist picture of the mental."
References
Fine, K. (1994). Essence and modality. *Philosophical Perspectives* , 8, 1–16.
Kim, J. (1989). Mechanism, purpose, and explanatory exclusion. *Philosophical Perspectives* , 3, 77–108. (Reprinted in Kim 1993a, pp. 237–64).
Kim, J. (1993a). *Supervenience and mind: Selected philosophical essays* . Cambridge:Cambridge University Press.

348.   Tahko, Tuomas E. 2013. "Truth-Grounding and Transitivity." *Thought: A Journal of Philosophy* no. 2:332-340.
Abstract: "It is argued that if we take grounding to be univocal, then there is a serious tension between truth-grounding and one commonly assumed structural principle for grounding, namely transitivity.
The primary claim of the article is that truth-grounding cannot be transitive. Accordingly, it is either the case that grounding is not transitive or that truth-grounding is not grounding, or both."

349.   ———. 2020. "Structure." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 387-395. New York: Routledge.
WIn this chapter, I will discuss both of these senses of structure as well as their potential connections. I will first briefly outline a potential connection between ground, structure, and fundamentality. Next we take up the idea that reality has a hierarchical structure and we will then examine whether there could be a systematic connection between ground and structure via the Lewisian notion of *naturalness* .This leads us to a question about the relationship between reality and representation, before concluding with a more detailed discussion about a famous principle regarding fundamentality, namely, the principle of *purity* ." (p. 387)

350.   Tajer, Diego. 2016. "Grounding and Logical Basing Permissions." *Diametros* no. 50:81-96.
Abstract: "The relation between logic and rationality has recently re-emerged as an important topic of discussion. Following the ideas of Broome [1999] and Macfarlane [2004], the debate focused on providing rational requirements, which work as bridges between logic and epistemic norms. However, as Broome [2014] and Way [2011] observed, the usual requirements cannot capture some important aspects of rationality, such as how one can rationally believe something on the basis of believing something else. Broome [2014] proposed a few additional principles ("basing permissions") for this purpose. In this paper I develop a more systematic family of basing permissions using the recent notion of grounding (Fine [2012], Correia [2014]). In particular, I claim that if Γ (logically) grounds A, and you believe Γ then rationality permits you to believe A on the basis of believing Γ."
References
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Correia [2014] - F. Correia, " Logical Grounds," *Review of Symbolic Logic* (7/1) 2014, p. 31-59.

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Macfarlane [2004] - J. Macfarlane, "What (if any) is the normative role of logic?", unpublished talk at APA 2004, available on the website of the author.
Way [2011] - J. Way, "The symmetry of rational requirements," *Philosophical Studies* (155/2) 2011, p. 227- 239.

351.   Tallant, Jonathan. 2018. *Truth and World: An Explanationist Theory* . New York: Routledge.
"My starting point for many of the arguments will be Armstrong's canonical *Truth and Truthmaking* . So, to the theory. I borrow (with slight emendation) from Cameron (2008a).(1)
Maximalism: for any true proposition, there exists some thing or things that necessitate(s) the truth of that proposition. (cf. Cameron, 2008a: 292)
Maximalism is an extreme version of truthmaker theory.
The truthmaker theorist merely holds that:
Truthmaker theory: for some true propositions, there exists some thing or things that necessitate(s) the truth of that proposition.
As we move through this chapter, we will have to refine these principles. For one thing, note that this treats necessitation as the truthmaker relation (as do, e.g., both Armstrong (2004) and Cameron (2008a)). I will suggest that mere necessitation is not fit to play the role of the truthmaker relation. Following a number of others (e.g., Schaffer, 2008a, 2008b, 2009: 365), I suggest that the truthmaker relation should be treated as a grounding relation – the 'in virtue of' relation. I take this relation to be a primitive and unanalysable relation, though there are things that can be said to cast light on its nature."
(1) The emendation: Cameron states that truthmakers must be pluralities: things. There is no obvious reason that a truthmaker might not, instead, be a thing.
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352.   Thompson, Naomi. 2014. *Structuring Reality* .
PhD thesis at the University of Birmingham; available at Academia.edu.
Abstract: "This thesis explores attempts to characterise the structure of reality. Three notions stand out: Lewisian *naturalness* , Sider's '*structure* ', and *grounding* , where the latter has become the most popular way to characterise the structure of reality in the contemporary literature. I argue that none of these notions, as they are currently understood, are suited for limning the metaphysical structure of reality. In the first part of the thesis I argue that, by the lights of the relevant theories, both naturalness and structure fall short of the theoretical role carved out for those posits. In the second part of the thesis I present two challenges to the ‗orthodox' conception of grounding. The first contests the standard assumption that grounding is asymmetric, both by citing what I take to be best described as symmetric instances of grounding, and by developing and arguing for a new theory of metaphysical structure – ‗metaphysical interdependence' – which takes grounding to be nonsymmetric. The second challenge concerns the relationship between grounding and (metaphysical) explanation, and leads to a dilemma for the grounding theorist. My proposed resolution to the dilemma is to adopt an antirealist approach to grounding, which I further motivate and develop in the final chapter."

353.   ————. 2016. "Grounding and Metaphysical Explanation." *Proceedings of the Aristotelian Society* no. 116:395-402.

Abstract: "Attempts to elucidate grounding are often made by connecting grounding to metaphysical explanation, but the notion of metaphysical explanation is itself opaque, and has received little attention in the literature. We can appeal to theories of explanation in the philosophy of science to give us a characterisation of metaphysical explanation, but this reveals a tension between three theses: that grounding relations are objective and mind-independent; that there are pragmatic elements to metaphysical explanation; and that grounding and metaphysical explanation share a close connection. Holding fixed the mind-independence of grounding, I show that neither horn of the resultant dilemma can be blunted. Consequently, we should reject the assumption that grounding relations are mind-independent."

354.   ————. 2016. "Metaphysical Interdependence." In *Reality Making* , edited by Jago, Mark, 38-56. Oxford: Oxford University Press.

"I assume the existence of a distinctive relation of non-causal dependence: the grounding relation. Intuitive examples of grounding can help to elucidate the notion. Consider, for example, the relationship that obtains between Socrates's singleton—the set that only has Socrates as a member—and Socrates himself (see Fine 1995, 271), where Socrates's singleton exists because Socrates exists. Grounding can be understood as a relation of metaphysical explanation, as emphasized by the 'because' in the previous sentence. Claims about the dependence of truths on their truthmakers are also plausibly construed as grounding claims (e.g. Rodriguez-Pereyra 2006, 960; Correia 2011)—we get a particular truth in virtue of the existence of the relevant truthmaker. The truth is thus grounded in the truthmaker. Borrowing another kind of example of grounding from Schaffer 2009, 375), the Euthyphro dilemma concerns whether an act is morally right because it is approved by the gods, or is approved by the gods because it is morally right. If we take the first horn of the dilemma, then the rightness of the act is grounded in the approval of the gods. If the latter, the approval of the gods is grounded in the rightness of the act." (p. 38)

References

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355.   ————. 2018. "Irrealism about Grounding." *Royal Institute of Philosophy Supplement* no. 172:2405-2425.

Abstract: "Grounding talk has become increasingly familiar in contemporary philosophical discussion. Most discussants of grounding think that grounding talk is useful, intelligible, and accurately describes metaphysical reality. Call them *realists* about grounding. Some dissenters reject grounding talk on the grounds that it is unintelligible, or unmotivated. They would prefer to eliminate grounding talk from philosophy, so we can call them *eliminitivists* about grounding. This paper outlines a new position in the debate about grounding, defending the view that grounding talk is (or at least can be) intelligible and useful. Grounding talk does not, however, provide a literal and veridical description of mind-independent metaphysical reality. This (non-eliminative) *irrealism* about grounding treads a path between realism and eliminativism."

356.   ———. 2019. "Questions and Answers: Metaphysical Explanation and the Structure of Reality." *Journal of the American Philosophical Association* :98-116.
Abstract: "This paper develops an account of metaphysical explanation according to which metaphysical explanations are answers to what-makes-it-the-case-that questions. On this view, metaphysical explanations are not to be considered entirely objective, but are subject to epistemic constraints imposed by the context in which a relevant question is asked. The resultant account of metaphysical explanation is developed independently of any particular views about grounding.
Toward the end of the paper an application of the view is proposed that takes metaphysical explanations conceived in this way to characterize reality's structure. According to this proposal, reality's structure is partly constituted by a projection of our explanatory practices onto reality."

357.   ———. 2020. "Strict Partial Order." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 259-270. New York: Routledge.
"This chapter explores aspects of the logic of ground.A strict partial order is transitive, irreflexive, and asymmetric.Whilst it is generally assumed that grounding exhibits these properties, this has consequences for other aspects of the study of ground, and so each assumption has been challenged in the grounding literature.The present chapter critically discusses those challenges and explores reasons for thinking that grounding forms a strict partial order in the first place." (p. 259)

358.   Tiehen, Justin. 2015. "Grounding Causal Closure." *Pacific Philosophical Quarterly* no. 96:501-522.
Abstract: "What does itmean to say thatmind-body dualismis causally problematic in a way that othermind-body theories, such as the psychophysical type identity theory, are not? After considering and rejecting various proposals, I advance my own, which focuses on what grounds the causal closure of the physical realm.
A metametaphysical implication of my proposal is that philosophers working without the notion of grounding in their toolkit aremetaphysically impoverished. They cannot do justice to the thought, encountered in every introductory class in the philosophy of mind, that dualism has a special problem accounting for mental causation."

359.   ———. 2015. "Explaining Causal Closure." *Philosophical Studies* no. 172:2405-2425.
Abstract: "The physical realm is causally closed, according to physicalists like me. But why is it causally closed, what metaphysically explains causal closure? I argue that reductive physicalists are committed to one explanation of causal closure to the exclusion of any independent explanation, and that as a result, they must give up on using a causal argument to attack mind–body dualism. Reductive physicalists should view dualism in much the way that we view the hypothesis that unicorns exist, or that the Kansas City Royals won the 2003 World Series: false, but not objectionable in any distinctively causal way. My argument turns on connections between explanation, counterfactuals, and inductive confirmation."

360.   Torza, Alessandro. 2020. "Ground and Modality." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 63:563-585.
Abstract: "The grounding relation is routinely characterized by means of logical postulates.
The aim of this paper is twofold. First, I show that a subset of those postulates is incompatible with a minimal characterization of metaphysical modality. Then I consider a number of ways for reconciling ground with modality. The simplest and most elegant solution consists in adopting serious actualism, which is best captured within a first-order modal language with predicate abstraction governed by negative free logic. I also explore a number of alternative strategies by revising the ground-theoretic postulates, while keeping the modal ones fixed. As I argue, each of those strategies is either unviable, highly contentious, or insufficiently motivated."

361.   Trogdon, Kelly. 2013. "Grounding: Necessary or Contingent?" *Pacific Philosophical Quarterly* no. 94:465-485.

Abstract: "Recent interest in the nature of grounding is due in part to the idea that purely modal notions are too coarse-grained to capture what we have in mind when we say that one thing is grounded in another. Grounding not being purely modal in character, however, is compatible with it having modal consequences.

Is grounding a necessary relation? In this article I argue that the answer is 'yes' in the sense that propositions corresponding to full grounds modally entail propositions corresponding to what they ground. The argument proceeds upon two substantive principles: the first is that there is a broadly epistemic constraint on grounding, while the second links this constraint with Fine's Aristotelian notion of essence. Many think grounding is necessary in something like the sense specified above, but just why it's necessary is an issue that hasn't been carefully addressed. If my argument is successful, we now know why grounding is necessary."

362.   ———. 2013. "An Introduction to Grounding." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence* , edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 97-122. Munich: Philosophia Verlag.

"There is a burgeoning literature on grounding. The primary goal of this chapter is to set out and clarify some of the central issues and disputes concerning this notion. In the course of the chapter I'll weigh in on certain positions, treat others as working assumptions, and remain neutral on others. In some cases philosophers either explicitly endorse or reject the positions I discuss, while in other cases the positions have yet to be discussed in any detail.

The plan for the chapter is as follows. I begin by distinguishing two general approaches to grounding-on one our talk of grounding in philosophy is univocal, and on the other it isn't-and consider different ways in which each view might be further developed (§2). Then I consider the logical form of grounding statements as well as the tructural principles that govern grounding (§3-4). Next, I take up the matter of how the notions of grounding, modality, and reduction interact (§5-6). I close with a brief discussion of the grounds for what grounds what (§7)." (pp. 97-98)

363.   ———. 2015. "Placement, Grounding, and Mental Content." In *The Palgrave Handbook of Philosophical Methods* , edited by Daly, Chris, 481-496. London: Palgrave-Macmillan.

"Introduction: One central issue concerning philosophical methodology is this: what concepts should go into our philosophical toolbox? That is to say, what notions are appropriate to rely on in doing philosophy? This issue is relevant not only to how we should go about addressing philosophical problems but also how we're to formulate those problems in the first place. There is a burgeoning literature on the notion of grounding. I'm a proponent of grounding – I think the notion of grounding is coherent and theoretically useful. Supposing that the notion of grounding belongs in our philosophical toolbox, what consequences might this have for familiar philosophical problems? In this chapter I focus on what Jackson (1998) calls *placement problems* – problems concerning how the manifest facts (e.g. facts concerning ordinary macroscopic objects, the mental, and the moral) "fit into" the world given that the world is ultimately physical in nature.

If we formulate placement problems in terms of grounding, we should expect new possibilities to open up with respect to how to solve them. My goal in this chapter is to show that this is precisely what happens with respect to the *content* placement problem, the problem of how to fit facts concerning mental content into the actual world given that it's ultimately physical in nature." (p. 481, anote omitted)

References

Jackson, F. 1998. *From Metaphysics to Ethics* . Oxford UP.

364.   ———. 2018. "Grounding-Mechanical Explanation." *Philosophical Studies* no. 175:1289-1309.

Abstract: "I argue that there is an important similarity between causation and grounding. In particular I argue that, just as there is a type of scientific explanation that appeals to causal mechanisms—causal-mechanical explanation—there is a type of metaphysical explanation that appeals to grounding mechanisms—grounding-mechanical explanation. The upshot is that the role that grounding mechanisms play in certain metaphysical explanations mirrors the role that causal mechanisms play in certain scientific explanations. In this light, it becomes clear that grounding-mechanical explanations make crucial contributions to the evaluation of a variety of important philosophical theses, including priority monism and physicalism."

365.   ———. 2020. "Truthmaking." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 396-407. New York: Routledge.
"Before getting into the details, I should note some of the assumptions I'm going to make about grounding and truthmaking. While each of these assumptions has been challenged in the literature, they strike me as reasonable starting points. As for regimentation, I assume that grounding and truthmaking claims are to be formulated with the predicates "grounds" and "makes true" rather than sentential connectives such as "because".As for the ontological status of grounding and truthmaking, I assume that they're relations 'out there' in the domain of our ontology rather being primitive pieces of ideology. As for their relata, I assume that something is a ground, a grounded entity, or a truthmaker only if it's a *fact* , and something is made true only if it's a *proposition* . I assume that facts and propositions are structured entities, where the former are worldly in that they lack concepts or modes of presentation as constituents, and the latter are representational in that they do have such constituents. Collections of one or more facts ground other facts, and collections of one or more facts make true propositions." (p. 396, anote omitted)

366.   Trogdon, Kelly, and Witmer, D. Gene. 2021. "Full and Partial Grounding." *Journal of the American Philosophical Association* no. 7:252-271.
Abstract: "While controversy about the nature of grounding abounds, our focus is on a question for which a particular answer has attracted something like a consensus. The question concerns the relation between *partial* grounding and *full* grounding. The apparent consensus is that the former is to be defined in terms of the latter. We argue that the standard way of doing this faces a significant problem and that we ought to pursue the reverse project of defining full grounding in terms of partial grounding. The guiding idea behind the definition we propose is that full grounding is what happens when partial grounding works in a way that ensures that the grounded is nothing over and above the grounds. We ultimately understand this idea in terms of iterated nothing-over-and-above claims."

367.   Trueman, Robert. 2021. "Truthmaking, Grounding and Fitch's Paradox." *Analysis* no. 81:270-274.
Abstract: "Jago and Loss have recently used variations on Fitch's paradox to argue that every truth has a truthmaker, and that every fact is grounded. In this paper, I show that Fitch's paradox can also be adapted to prove the exact opposite conclusions: no truth has a truthmaker, and no fact is grounded. All of these arguments are as dialectically effective as each other, and so they are all in bad company."
References
Jago M. 2020. A short argument for truthmaker maximalism. *Analysis* 80: 40-44.
Loss R. forthcoming [2021]. There are no fundamental facts. *Analysis* 81: 32-39.

368.   Tsohatzidis, Savas L. 2015. "A Problem for a Logic of 'Because'." *Journal of Applied Non-Classical Logics* no. 25:46-49.
Abstract: "A problem is raised for the introduction rules proposed in Benjamin Schnieder's (2011) 'A logic for "because"', arising in connection with (a) inferences that the"rules should not, but do, validate and (b) inferences that the rules should, but do not, validate."
References

Schnieder, B. (2011). A logic for 'because'. *The Review of Symbolic Logic* , 4, 445–465.

369.   Tugby, Matthew. 2016. "What are Dispositional Properties?" In *Reality Making* , edited by Jago, Mark, 75-98. Oxford: Oxford University Press.
Contents: List of Figures VII; List of Contributors VIII; Mark Jago: Reality-Making: Introduction 1; Martin Glazier: Laws and the Completeness of the Fundamental 11; Naomi Thompson: Metaphysical Interdependence 38; Jacek Brzozowski: Monism and Gunk 57; Matthew Tugby: What are Dispositional Properties? 75; Mark Jago: Essence and the Grounding Problem 99; Nicholas K. Jones: Object as a Determinable 121; Sonia Roca-Royes: Rethinking Origin Essentialism (for Artefacts) 152; Nathan Wildman: How (not) to be a Modalist About Essence 177; Index 197-200.

370.   ———. 2021. "Grounding Theories of Powers." *Synthese* no. 198:11187-11216.
Abstract: "Necessitarianism, as we shall use the term, is the view that natural properties and causal powers are necessarily connected in some way. In recent decades the most popular forms of necessitarianism have been the anti-Humean powers-based theories of properties, such as dispositional essentialism and the identity theory. These versions of necessitarianism have come under fire in recent years and I believe it is time for necessitarians to develop a new approach. In this paper I identify unexplored ways of positing metaphysically necessary connections in nature, using the concepts of grounding and essential dependence. For example, I show that one could be a necessitarian by insisting that the properties of things necessarily *ground* their powers, and that one can maintain this while rejecting dispositional essentialism. Using different combinations of claims about grounding and essential dependence (or lack thereof), I map out a spectrum of new positions and compare them to previous theories of natural modality. Some of these positions are compatible with Humean metaphysics (given certain readings of Hume's Dictum) while others are not. The overall aim of the paper is to provide a new metaphysical framework for understanding theories of powers and thereby launch a new necessitarian research programme."

371.   Turner, Jason. 2016. "Curbing Enthusiasm About Grounding." *Philosophical Perspectives* no. 30:366-396.
"Metaphysics in the high old style is back in fashion, and this season's favorite accessory is a relation philosophers are pleased to call metaphysical grounding. By 'grounding', the fashionistas do not intend merely the venerable project of trying to figure out how the ordinary appearances are settled by ultimate reality. They mean, instead, a very particular sort of metaphysical relation (or something like a relation) used to tie together the fundamental with the non-fundamental— a kind of priority relation that structures the world.
Some stodgier critics have objected that metaphysics' newfound enthusiasm for grounding is misguided, because the notion is in fact *unintelligible* : Talk of the alleged relation makes no sense, and metaphysicians have simply fooled themselves into thinking otherwise. I do not share this diagnosis—as far as I can see, talk of the relation makes perfect sense. But I too want to curb the discipline's grounding-based enthusiasm. The enthusiasm has led many to make wild claims about grounding's virtues, such as that we can use it to shield entities from Ockham's razor. And it has led many to embark on grand grounding-theoretic projects, such as the search for its 'logic'. I think many of these claims unfounded and projects unpromising: Grounding's marketing campaign has made promises which, I will argue, it cannot deliver." (p. 366)

372.   Valore, Paolo. 2021. "A Proposed Taxonomy of Realism in Conceptual Frameworks." *European Journal of Pragmatism and American Philosophy* no. 13:1-10.
"One of the complications of a clear evaluation of different positions in metaphysics and ontology is discrepancy in terminology and variance, if not incongruity, of basic concepts associated to relevant notions. This is a common problem in

philosophy, but it seems that it has been exacerbated in recent debates about different clusters of positions called "realism."

(...)

Evidently, a significant reconstruction of the various systems (not even of the most important authors) and the many possible foundations and justifications of "realism" is out of the scope of this paper (a well-done comprehensive synopsis of versions of "realism" can be easily found in several other papers and encyclopedia entries, for instance Miller 2019). Instead of trying to infer a definition of "realism," as if by induction, from the countless pictures given by philosophers identifying (or identified by others) as "realists" in the history of philosophy or in a catalogue of current debates, here I offer a taxonomy provided by a conceptual analysis of the notion of "realism" in what I think are its sub-concepts, recognizing three different conceptual frameworks." (p. 2)

References

Miller Alexander, (2019), "Realism," in E. N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy* (Winter 2019 Edition).

373. Väyrynen, Pekka. 2013. "Grounding and Normative Explanation." *Aristotelian Society Supplementary Volume* no. 87:156-178.

Abstract: "This paper concerns non-causal normative explanations such as 'This act is wrong because/in virtue of ' (where the blank is often filled out in non-normative terms, such as 'it causes pain'). The familiar intuition that normative facts aren't brute or ungrounded but anchored in non-normative facts seems to be in tension with the equally familiar idea that no normative fact can be fully explained in purely non-normative terms. I ask whether the tension could be resolved by treating the explanatory relation in normative explanations as the sort of 'grounding' relation that receives extensive discussion in recent metaphysics. I argue that this would help only under controversial assumptions about the nature of normative facts, and perhaps not even then. I won't try to resolve the tension, but draw a distinction between two different sorts of normative explanations (one concerning 'bearers', the other concerning 'sources' of normativity) which helps to identify constraints on a resolution. One distinctive constraint on normative explanations in particular might be that they should be able to play a role in normative justification."

374. von Solodkoff, Tatjana. 2012. "Straightening Priority Out." *Philosophical Studies* no. 161:391-401.

Abstract: "In recent work, Louis deRosset (*Philosophical Studies* 149:73-97, 2010) has argued that priority theorists, who hold that truths about macroscopic objects can be metaphysically explained without reference to such things, cannot meet an independently motivated constraint upon good explanation. By clarifying the nature of the priority theorist's project, I argue that deRosset's argument fails to establish its conclusion."

References

deRosset, L. (2010). Getting priority straight. *Philosophical Studies,* 149, 73-97.

375. Wallner, Michael. 2021. "The Ground of Ground, Essence, and Explanation." *Synthese* no. 198:1257-1277.

Abstract: "This paper is about the so-called meta-grounding question, i.e. the question of what grounds grounding facts of the sort 'φ is grounded in Γ '. An answer to this question is pressing since some plausible assumptions about grounding and fundamentality entail that grounding facts must be grounded. There are three different accounts on the market which each answer the meta-grounding question differently: Bennett's and deRosset's "Straight Forward Account" (SFA), Litland's "Zero-Grounding Account" (ZGA), and "Grounding Essentialism" (GE). I argue that if grounding is to be regarded as metaphysical explanation (i.e. if unionism is true), (GE) is to be preferred over (ZGA) and (SFA) as only (GE) is compatible with a crucial consequence of the thought that grounding is metaphysical explanation. In this manner the paper contributes not only to

discussions about the ground of ground but also to the ongoing debate concerning the relationship between ground, essence, and explanation."
"Versions of (GE) are discussed in Rosen (2010), Fine (2012) and Dasgupta (2014)." (p. 1258)

References

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Dasgupta, S. (2014). The possibility of physicalism. *Journal of Philosophy* , 111(9/10), 557–592.
deRosset, L. (2013). Grounding explanations. *Philosopher's Imprint* , 13(7), 1–26.
Fine, K. (2012). Guide to ground. In F. Correia & B. Schnieder (Eds.), *Metaphysical grounding: Understanding the structure of reality* (pp. 37–80). Cambridge: CUP.
Litland, J. E. (2017). Grounding ground. In K. Bennett & D. Zimmerman (Eds.), *Oxford studies in metaphysic* s (Vol. 10, pp. 279–315). Oxford: OUP.
Rosen, G. (2010). Metaphysical dependence: Grounding and reduction. In B. Hale & A. Hoffmann (Eds.), *Modality: Metaphysics, logic, and epistemology* (pp. 109–136). Oxford: OUP.

376.   Wang, Jennifer. 2020. "Cause." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 300-311. New York: Routledge.
"The notion of ground is often introduced as the metaphysical analogue of the notion of cause. For the most part, no more is said about the connection between the two notions, for instance, the extent of the analogy or whether theorizing about one notion might shed light on the other. But in recent literature, some philosophers have developed a sustained analogy between grounding and causation, with the end goal of showing that they present a unified phenomenon.Although there are other questions about the connection between grounding and causation, this chapter centers on the unification claim." (300, a note omitted)

377.   Werner, Jonas. 2020. "Plural Grounding and the Principle of Sufficient Reason." *Analysis* no. 80:90-95.
"McDaniel (2019) presents a novel argument that aims to establish that the principle of sufficient reason fails if there is a contingent truth. It is a variant of an argument to the same conclusion that has been presented by van Inwagen 1983: 202–4. Van Inwagen's argument has been shown to fail if the principle of sufficient reason is formulated as the thesis that every truth has a full ground (see e.g. Schnieder and Steinberg 2015). The crucial aspect of McDaniel's new argument is that it employs a notion of plural grounding, with plural grounding allowing that 'many facts can collectively ground many facts collectively' (McDaniel 2019: 232). McDaniel defines that 'a plurality of truths are contingently true if and only if at least one of them is contingently true' (2019: 233) and he formulates the principle of sufficient reason as the thesis that 'any plurality of contingent truths has a full ground'(2019: 232). I will henceforth use '(PPSR)' (for 'plural principle of sufficient reason') to refer to this thesis." (p. 90)
(...)
"General irreflexivity is an assumption that is needed for McDaniel's argument against (PPSR) to work. If I have been successful in showing that (PPSR) only captures the spirit of the principle of sufficient reason if it is formulated in terms of a notion of plural grounding for which general irreflexivity fails, then I have rebutted McDaniel's attack on the principle of sufficient reason." (p. 94)
References

McDaniel, K. 2019. The principle of sufficient reason and necessitarianism. *Analysis* 79: 230–36.
Schnieder, B. and A. Steinberg. 2015. Without reason? *Pacific Philosophical Quarterly* 96: 523–41.
van Inwagen, P. 1983. *An Essay on Free Will.* Oxford: Oxford University Press.

378.   ———. 2021. "Arbitrary Grounding." *Philosophical Studies* .
First Online 10 July 2021.

Abstract: "The aim of this paper is to introduce, elucidate and defend the usefulness of a variant of grounding, or metaphysical explanation, that has the feature that the grounds explain of some states of affairs that one of them obtains without explaining which one obtains. I will dub this variant *arbitrary grounding* . After informally elucidating the basic idea in the first section, I will provide three metaphysical hypotheses that are best formulated in terms of arbitrary grounding in the second section. The third section will be concerned with the relation between arbitrary grounding and non-arbitrary grounding. The fourth section will compare arbitrary grounding to two extant proposals in the literature."

379.   ————. 2022. *The Modalities of Essence and Ground* . Frankfurt: Vittorio Klostermann.
Contents: Acknowledgements IX; 1. Introduction 1; 2. Immediate Minimal Grounds 19; 3. Constructing the Semantics 39: 4. Essence 75; 5. Necessity and Possibility 111; 6. Grounding 133; 7. Comparison and Conclusion 163; Final Remarks 175; Bibliography 177-183.
"Introduction: In this first chapter I present the core idea of this book and lay out its structure. Furthermore, I introduce its main topics. I will start by painting a big picture of the view I want to develop in this work and I situate it in the present philosophical landscape. Afterwards, I will briefly discuss the central concepts of essence, grounding and metaphysical modality and I will specify the ways in which I will use them in the subsequent chapters. Finally, an overview of the following chapters will be provided.
1.1 The Basic Idea
In this book I develop and defend a unified semantic treatment of essence, grounding and metaphysical modality. Statements like "Socrates is essentially wise", "Possibly the number of ducks in Hamburg is odd" and "Bob the ball is red grounds Bob the ball is coloured" can be modelled in the resulting semantics. It will take the form of a world semantics similar to the standard possible world semantics for metaphysical modality. One of its central features will be that not only possible worlds, but also impossible worlds - ways the world might not have been - are its semantic values. The smantics will be argued to shed light on the deep philosophical connections between three of the most important posits of contemporary metaphysics. It will be shown to bear relevance to some important and controversial issues regarding the relations between essence, ground and modality.
The core idea standing in the background of my semantics is to model essences with accessibility-relations, relations that specify which worlds can see other worlds, metaphorically speaking. Essences modelled with accessibility-relations will be the sole primitive of the view to be developed. Accounts of grounding and metaphysical modality will be given in terms of essence." (p. 1)

380.   Whitcomb, Dennis. 2012. "Grounding and Omniscience." *Oxford Studies in Philosophy of Religion* no. Vol. 4:173-201.
Abstract: "This chapter argues that omniscience is impossible and therefore that there is no God. The argument turns on the notion of grounding. The chapter begins by illustrating and clarifying that notion. It then lays out five claims, one of which is the claim that there is an omniscient being, and the other four of which are claims about grounding. It shows that these five claims are jointly inconsistent. It then argues for the truth of each of them, except the claim that there is an omniscient being. From these arguments it follows that there are no omniscient beings and thus that there is no God."

381.   Wigglesworth, John. 2018. "Grounding in Mathematical Structuralism." In *Reality and its Structure: Essays in Fundamentality* , edited by Bliss, Ricki Leigh and Priest, Graham, 217-236. Oxford: Oxford University Press.
"Conclusion:L We have argued for two grounding claims involving mathematical entities that are relevant to the mathematical structuralist: that the identity of a mathematical object is grounded in the identity of the structure it belongs to, and in

the identities of other mathematical objects in that structure. This argument has proceeded by describing mathematical structures in terms of unlabelled graphs.With this account of structure to hand, we present standard identity conditions for objects in a structure and for structures themselves, which allow us to articulate the notion of the identity of a mathematical entity in the context of structuralism. We then interpret grounding claims involving these entities as claims about what happens in the space of possible mathematical structures. This is an interpretation which makes no reference to any particular systems or realizations that exemplify the structures in question. And so, unlike Linnebo's account, it is an account of grounding that is available to both the ante rem and in re non-eliminativist structuralists. On this interpretation, we argue that the grounding claims are true.Their truth follows from, or is at least evidenced by, the truth of the relevant corresponding necessity claims, claims ranging over the space of possible mathematical structures." (p. 232)

382.   Wildman, Nathan. 2016. "How (not) to be a Modalist About Essence." In *Reality Making* , edited by Jago, Mark, 177-196. Oxford: Oxford University Press.
Contents: List of Figures VII; List of Contributors VIII; Mark Jago: Reality-Making: Introduction 1; Martin Glazier: Laws and the Completeness of the Fundamental 11; Naomi Thompson: Metaphysical Interdependence 38; Jacek Brzozowski: Monism and Gunk 57; Matthew Tugby: What are Dispositional Properties? 75; Mark Jago: Essence and the Grounding Problem 99; Nicholas K. Jones: Object as a Determinable 121; Sonia Roca-Royes: Rethinking Origin Essentialism (for Artefacts) 152; Nathan Wildman: How (not) to be a Modalist About Essence 177; Index 197-200.

383.   Wilhelm, Isaac. 2020. "An Argument for Entity Grounding." *Analysis* no. 80:500-507.
"According to those I will call 'fact-only grounders' (Rosen 2010 and Fine 2012), grounding only obtains between facts. Physical objects, abstract objects, events and other non-fact entities do not ground anything. According to those I will call 'entity grounders' (Schaffer 2009 and deRosset 2013), nonfact entities can serve as grounds. Facts can ground, but so can physical objects, abstract objects and perhaps other kinds of entities.
In this paper, I give an argument in favour of entity grounding over fact only grounding. Put roughly, the argument is this: entity grounders can give a more unified, less disjunctive account of the grounds of identity facts than fact-only grounders. After presenting the argument, I consider some responses that fact-only grounders might give." (p. 500, a note omitted)
Referencs
deRosset, L. 2013. Grounding explanations. *Philosophers' Imprint* 13: 1–26.
Fine, K. 2012. Guide to ground. In *Metaphysical Grounding* , eds. F. Correia and B. Schnieder, 37–80. Cambridge: Cambridge University Press.
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Schaffer, J. 2009. On what grounds what. In *Metametaphysics* , eds. D. Chalmers, D. Manley and R. Wasserman, 347–83. New York, NY: Oxford University Press.

384.   ———. 2021. "Grounding and Propositional Identity." *Analysis* no. 81:80-81.
Abstract: "I show that standard grounding conditions contradict standard conditions for the identities of propositions."

385.   Williams, J. Robert G. 2012. "Requirements on Reality." In *Metaphysical Grounding: Understanding the Structure of Reality* edited by Correia, Fabrice and Schnieder, Benjamin, 165-185. Cambridge: Cambridge University Press.
"My focus in this chapter is how *revisionary* we need to be about wider theory, in order to incorporate the minimal metaphysics.
In Section 6.1 I outline a 'Moorean' epistemological challenge: that overly revisionary or error-theoretical theories of the world will *not be reasonable to believe* for those that start off with a fair share of common sense and a healthy respect for the testimony of best science. I outline two strategies for responding to

this challenge by reconciling educated common sense and minimal metaphysics – 'structured metaphysics', in the mode of Fine and Schaffer, and the linguistic strategies favoured by Quine and contemporary fictionalists. Section 6.2 focuses on some familiar 'representational' strategies; and Section 6.3 develops my own favoured version of this strategy" (p. 165)

386.   Wilsch, Tobias. 2015. "The Nomological Account of Ground." *Philosophical Studies* no. 172:3293-3312.
Abstract: "The article introduces and defends the Nomological Account of ground, a reductive account of the notion of metaphysical explanation in terms of the laws of metaphysics. The paper presents three desiderata that a theory of ground should meet: it should explain the modal force of ground, the generality of ground, and the interplay between ground and certain mereological notions. The bulk of the paper develops the Nomological Account and argues that it meets the three desiderata. The Nomological Account relies on two central notions: the notion of a 'law of metaphysics' and the notion of 'determination via the laws'. The paper offers the constructional conception of the laws of metaphysics, on which the metaphysical laws are general principles that characterize construction–operations such as composition, constitution, or set-formation. The role of determination in the account is explained and some reductive approaches to the notion are sketched. The case for the Nomological Account presented in this article is also a case for the laws of metaphysics. Since the Nomological Account offers a promising approach to metaphysical explanation we should take the laws of metaphysics seriously."

387.   ———. 2016. "The Deductive-Nomological Account of Metaphysical Explanation." *Australasian Journal of Philosophy* no. 94:1-23.
Abstract: "The paper explores a deductive-nomological account of metaphysical explanation: some truths metaphysically explain, or ground, another truth just in case the laws of metaphysics determine the latter truth on the basis of the former. I develop and motivate a specific conception of metaphysical laws, on which they are general rules that regulate the existence and features of derivative entities. I propose an analysis of the notion of 'determination via the laws', based on a restricted form of logical entailment. I argue that the DN-account of ground can be defended against the well-known objections to the DN-approach to scientific explanation. The goal of the paper is to show that the DN-account of metaphysical explanation is a well-motivated and defensible theory."

388.   ———. 2020. "Laws of Metaphysics." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 425-436. New York: Routledge.
"If causal explanations are supported by general laws, non-causal explanation might be supported by general laws as well. Consider metaphysical explanations like 'Peter the elephant is colored because he is grey'and '{Socrates} exists because Socrates exists'.These explanations might arise from general laws which entail that any grey object is also colored and that any object is the member of its singleton set (see Glazier's entry "Ground and Explanation", Chapter 8 in this volume).The role of such laws of metaphysics is to guide the bottom-up development of facts, much like the role of laws of nature is to govern facts along the temporal axis." (p. 425)

389.   Wilson, Alastair. 2018. "Grounding Entails Counterpossible Non-Triviality." *Philosophy and Phenomenological Research* no. 92:716-728.
Abstract. "This paper outlines a non-reductive counterfactual account of grounding along interventionist lines, and uses the account to argue that taking grounding seriously requires ascribing non-trivial truth-conditions to a range of counterpossible counterfactuals. This result allows for a diagnosis of a route to scepticism about grounding, as deriving at least in part from scepticism about non-trivial counterpossible truth and falsity."

390.   ———. 2018. "Metaphysical Causation." *Noûs* no. 52:723-751.

Abstract: "There is a systematic and suggestive analogy between grounding and causation. In my view, this analogy is no coincidence. Grounding and causation are alike because grounding is a type of causation: metaphysical causation. In this paper I defend the identification of grounding with metaphysical causation, drawing on the causation literature to explore systematic connections between grounding and metaphysical dependence counterfactuals, and I outline a non-reductive counterfactual theory of grounding along interventionist lines."

391.   ————. 2020. "Classifying Dependencies." In *The Foundation of Reality: Fundamentality, Space, and Time* , edited by Glick, David, Darby, George and Marmodoro, Anna, 46-68. Oxford: Oxford University Press.
"These days, metaphysical questions are frequently cast in terms of the ideology of grounding. This notion is usually introduced in explicit contrast to causation: ground is supposed to be a non-causal dependency relation that supports metaphysical explanations, just as causal relations support causal explanations. But the distinction between causation and grounding has never been very clear-cut, and recent work (Schaffer 2016; A. Wilson 2018a) has highlighted how deep the structural similarities between the notions run. Schaffer concludes that causation and grounding are merely closely analogous, whereas I have defended the more radical view that grounding is a specific type of causation; however, I set that heterodox view aside for the purposes of this chapter and proceed on the assumption that there is a coherent distinction to be drawn between the two notions." (p. 46)
(...)
"First, Section 2.2 provides some relevant background on causation and grounding. Then in Sections 2.3-28 I examine six obvious criteria by which to distinguish these two notions. I argue that each of the criteria is problematic in some way or other, which motivates the search for a better criterion. In Section 2.9 I offer my own account of the distinction between grounding and causation in terms of how the dependency is mediated. This mediation criterion can explain the appeal of the next best candidate criteria—the temporal criterion and the modal criterion—without suffering from their problems. Section 2.10 provides further support for the mediation criterion by arguing that it makes the classification of dependencies in physics appropriately sensitive to the interpretation of the physical theories involved.
Section 2.11 is a conclusion." (p. 47)

392.   Wilson, Jessica M. 2014. "No Work for a Theory of Grounding." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 57:535-579.
Abstract: "It has recently been suggested that a distinctive metaphysical relation — 'Grounding'—is ultimately at issue in contexts in which some goings-on are said to hold 'in virtue of'', be (constitutively) 'metaphysically dependent on', or be 'nothing over and above' some others. Grounding is supposed to do good work (better than merely modal notions, in particular) in illuminating metaphysical dependence. I argue that Grounding is also unsuited to do this work. To start, Grounding alone cannot do this work, for bare claims of Grounding leave open such basic questions as whether Grounded goings-on exist, whether they are reducible to or rather distinct from Grounding goings-on, whether they are efficacious, and so on; but in the absence of answers to such basic questions, we are not in position to assess the associated claim or theses concerning metaphysical dependence. There is no avoiding appeal to the specific metaphysical relations typically at issue in investigations into dependence—for example, type or token identity, functional realization, classical mereological parthood, the set membership relation, the proper subset relation, the determinable/determinate relation, and so on—which are capable of answering these questions. But, I argue, once the specific relations are on the scene, there is no need for Grounding."

393.   ————. 2016. "The Unity and Priority Arguments for Grounding." In *Scientific Composition and Metaphysical Ground* , edited by Aizawa, Ken and Gillett, Carl,

171-204. London: Palgrave MacMillan.

"...in two recent papers, however, Jonathan Schaffer (2016 and this volume) aims to develop a better version of the Unity argument, and off ers certain objections to my reasons for rejecting the Priority argument. In this paper, I consider and respond to these new motivations for Grounding. I start with some clarificatory remarks concerning the dialectical import of Grounding, its assumed relata, and how I take the ideology/ontology distinction to be relevant to the discussion; I then present and respond to Schaffer's new versions of the Unity and Priority arguments." (p. 172)

References

Schaff er, J. (this volume). Ground Rules: Lessons from Wilson.

Schaff er, J. (2016). Grounding in the image of causation. *Philosophical Studies* , 173 , 49–100.

394.   ———. 2016. "Grounding-Based Formulations of Physicalism." *Topoi* no. 35:1-18.

Abstract: "I problematize Grounding-based formulations of physicalism. More specifically, I argue, first, that motivations for adopting a Grounding-based formulation of physicalism are unsound; second, that a Grounding-based formulation lacks illuminating content, and that attempts to imbue Grounding with content by taking it to be a (nonmonotonic, hyperintensional) strict partial order are unuseful (since 'over and above' relations such as strong emergence may also be non-monotonic hyperintensional strict partial orders) and problematic (in ruling out reductive versions of physicalism, and relatedly, in undermining the ostensive definition of primitive Grounding as operative in any context where idioms of dependence are at issue); third, that conceptions of Grounding as constitutively connected to metaphysical explanation conflate metaphysics and epistemology, are ultimately either circular or self-undermining, and controversially assume that physical dependence is incompatible with explanatory gaps; fourth, that in order to appropriately distinguish physicalism from strong emergentism (physicalism's primary rival), a Grounding-based formulation must introduce one and likely two primitives in addition to Grounding; and fifth, that understanding physical dependence in terms of Grounding gives rise to 'spandrel' questions, including, e.g., "What Grounds Grounding?", which arise only due to the overly abstract nature of Grounding."

395.   ———. 2016. "Metaphysical Emergence; Weak and Strong." In *Metaphysics in Contemporary Physics* , edited by Bigaj, Tomasz and Wüthrich, Christian 345-398. Leiden: Brill Rodopi.

Abstract: "Motivated by the seeming structure of the sciences, metaphysical emergence combines broadly synchronic dependence coupled with some degree of ontological and causal autonomy. Reflecting the diverse, frequently incompatible interpretations of the notions of dependence and autonomy, however, accounts of emergence diverge into a bewildering varieties.

Here I argue that much of this apparent diversity is superficial. I first argue, by attention to the problem of higher-level causation, that two and only two strategies for addressing this problem accommodate the genuine emergence of special science entities. These strategies in turn suggest two distinct schema for metaphysical emergence – 'Weak' and 'Strong' emergence, respectively. Each schema imposes a condition on the powers of (features of) entities taken to be emergent: Strong emergence (associated with British emergentism) requires that higher-level features have more token powers than their dependence base features, whereas (following Wilson 1999) Weak emergence (associated with non-reductive physicalism) requires that higher-level features have a proper subset of the token powers of their dependence base features. Importantly, the notion of 'power' at issue here is metaphysically neutral, primarily reflecting commitment just to the plausible thesis that what causes an entity may (perhaps only contingently) bring about are associated with how the entity is – that is, with its features."

References

Wilson, J. (1999). How Superduper does a Physicalist Supervenience Need to Be? *The Philosophical Quarterly* 49, 33–52.

396.   Wirling, Ylwa Sjölin. 2020. "Is Backing Grounding?" *Ratio* no. 33:129-137.
Abstract: "Separatists are grounding theorists who hold that grounding relations and metaphysical explanations are distinct, yet intimately connected in the sense that grounding relations back metaphysical explanations, just as causal relations back causal explanations. But Separatists have not elaborated on the nature of the 'backing' relation. In this paper, I argue that backing is a form of (partial) grounding. In particular, backing has many of the properties commonly attributed to grounding, and taking backing to be partial grounding allows Separatists to make the most of their position vis-à-vis their Unionist opponents."

397.   Witmer, D. Gene, Butchard, William, and Trogdon, Kelly. 2005. "Intrinsicality without Naturalness." *Philosophy and Phenomenological Research* no. 70:326-350.
Abstract: "Rae Langton and David Lewis have proposed an account of "intrinsic property" that makes use of two notions: being independent of accompaniment and being natural. We find the appeal to the first of these promising; the second notion, however, we find mystifying.
In this paper we argue that the appeal to naturalness is not acceptable and offer an alternative definition of intrinsicality. The alternative definition makes crucial use of a notion commonly used by philosophers, namely, the notion of one property being had in virtue of another property. We defend our account against three arguments for thinking that this "in virtue of" notion is unacceptable in this context. We also take a look at a variety of cases in which the definition might be applied and defend it against potential counterexamples. The upshot, we think, is a modest but adequate account of what we understand by "intrinsic property.""
References
Langton, R. and Lewis, D. 1998. "Defining 'Intrinsic'," *Philosophy and Phenomenological Research* 58, 333-45. Reprinted (1999) in Lewis' *Papers in Metaphysics and Epistemology* (Cambridge: Cambridge University Press).

398.   Woods, Jack. 2017. "Emptying a Paradox of Ground." *Journal of Philosophical Logic* no. 47:631-648.
Abstract: "Sometimes a fact can play a role in a grounding explanation, but the particular content of that fact make no difference to the explanation—any fact would do in its place. I call these facts vacuous grounds. I show that applying the distinction between-vacuous grounds allows us to give a principled solution to Kit Fine and Stephen Kramer's paradox of (reflexive) ground. This paradox shows that on minimal assumptions about grounding and minimal assumptions about logic, we can show that grounding is reflexive, contra the intuitive character of grounds. I argue that we should never have accepted that grounding is irreflexive in the first place; the intuitions that support the irreflexive intuition plausibly only require that grounding be non-vacuously irreflexive. Fine and Kramer's paradox relies, essentially, on a case of vacuous grounding and is thus no problem for this account."
References
Fine, K. (2010). Some puzzles of ground. *Notre Dame Journal of Formal Logic* , 51(1), 97–118.
Krämer, S. (2013). A simpler puzzle of ground. *Thought: A Journal of Philosophy* , 2(2), 85–89.

399.   Wygoda Cohen, Shlomit. 2020. "Not All Partial Grounds Partly Ground: Some Useful Distinctions in the Theory of Grounding." *Philosophy and Phenomenological Research* no. 100:75-92.
Abstract: "The aim of this paper is to argue for some useful distinctions in the theory of grounding. I do so by first introducing the notion of grounding, discussing some of its features, and arguing that grounds must play some role in bringing about what they ground (sec. 1). I then argue that there are various distinct roles a fact may play in bringing about another, and more particularly that we should distinguish between three such roles; enablers, partial grounds, and facts that partly ground (sec. 2). Finally, I present two theoretical advantages to incorporating these

distinctions into our theory of grounding. Namely, that it reframes, and arguably dissolves, the contingentist-necessitarian debate (sec. 3), and that it helps to elegantly deal with the purported counterexamples to the transitivity of grounding and thus maintain the plausible elements of the assumption that grounding is a transitive relation (sec. 4)."

400.   Yablo, Stephen. 1982. "Grounding, Dependence, and Paradox." *Journal of Philosophical Logic* no. 11:117-137.
"The idea that grounding is an important component of our intuitive notion of well-definedness has long formed part of the conceptual background axiomatic set theory.' Yet only in recent years have we come to appreciate how heavily grounding figures in our intuitions of semantical well- definedness. The culmination of this developing appreciation, for the present at least, is Kripke's celebrated Theory of Truth; and while it would be a mistake to say that Kripke's ideas came as a complete surprise to concerned semanticists, it would be."
(...)
"The first purpose of this paper is to hasten the process by attempting to place some aspects of Kripke's work into formal and philosophical perspective. The second purpose has to do with my feeling that Kripke has only done half, albeit the first and therefore by far the most important half, of the The intuition of grounding is, I want to maintain, a two-sided intuition. the one side is what I'll call the *inheritance* aspect. (pp. 117-118)
(...)
"This paper is divided into two parts, one theoretical and one (compara- tively) applied. Sections 2-7 deal with the development of dependence in an abstract setting. Our main result is that any collection with an inheritance- style characterization admits a canonically related dependence-style charac- terization. In Sections 8-10 we show in a series of applications how the dependence way of doing things can improve our understanding of truth, semantic level, and paradoxicality."
(p- 119)

401.   Zanetti, Luca. 2021. "Grounding and Auto-abstraction." *Synthese* no. 198:10187-10205.
Abstract: "Abstraction principles and grounding can be combined in a natural way (Rosen in Hale B, Hoffmann A (eds) *Modality: metaphysics, logic, and epistemology* , Oxford University Press, Oxford, pp 109–136, 2010; Schwartzkopff in *Grazer philosophische studien* 82(1):353–373, 2011). However, some ground-theoretic abstraction principles entail that there are circles of partial ground (Donaldson in *Noûs* 51(4):775–801, 2017).
I call this problem auto-abstraction. In this paper I sketch a solution. Sections 1 and 2 are introductory. In Sect. 3 I start comparing different solutions to the problem. In Sect. 4 I contend that the thesis that the right-hand side of an abstraction principle is (metaphysically) prior to its left-hand side motivates an independence constraint, and that this constraint leads to predicative restrictions on the acceptable instances of ground-theoretic abstraction principles. In Sect. 5 I argue that auto-abstraction is acceptable unless the left-hand side is essentially grounded by the right-hand side. In Sect. 6 I highlight several parallelisms between auto-abstraction and the puzzles of ground. I finally compare my solution with the strategies listed in Sect. 3."

402.   Zimmermann, Alexander, Kleinknecht, Reinhard, and Dorn, Georg J. W. 2020. "Grounding from a Syntactic Point of View: A Sentential-Logical Approach." *Erkenntnis* .
First online 3 March 2020.
Abstract: "We define the term ⌜a set T of sentential-logical formulae grounds a sentential-logical formula A from a syntactic point of view⌝ in such a way that A is a syntactic sentential-logical consequence of T, and specific additional syntactic requirements regarding T and A are fulfilled. These additional requirements are developed strictly within the syntactics of sentential-logical languages, the three most important being new, namely: to be atomically minimal, to be minimal in

degree, and not to be conjunction-like. Our approach is independent of any specific sentential-logical calculus."

403.   Zylstra, Justin. 2018. "The Essence of Grounding." *Synthese* no. 196:5137-5152.
Abstract: "I develop a reduction of grounding to essence. My approach is to think about the relation between grounding and essence on the model of a certain concept of existential dependence. I extend this concept of existential dependence in a couple of ways and argue that these extensions provide a reduction of grounding to essence if we use sorted variables that range over facts and take it that for a fact to obtain is for it to exist. I then use the account to resolve various issues surrounding the concept of grounding and its connection with essence; apply the account to paradigm cases and to the impure logic of grounding; and respond to objections."

404.   ———. 2018. "Essence with Ground." *Analytic Philosophy* no. 59:193-207.
"Many metaphysicians would like to have both essence and ground in their toolkit.
(1) Applications of one concept often invoke the other.
(...)
In this paper, I argue that the compatibility of essence and ground is not simply given. I do this by first giving a pentad of claims that plausibly govern the concepts of essence and ground, and how they interact. I argue that each claim in the pentad has independent albeit defeasible support but that they are jointly inconsistent. I then offer a way out of inconsistency by expanding our ideology: I introduce a non-factive operator that expresses the sort of thing an item is, in a distinctive sense of the term. The upshot is that we can make sense of the idea that something pertains to the essence of an item but involves contingency." (p. 193)

405.   ———. 2019. "Making Semantics for Essence." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 62:859-876.
Abstract: "In this paper, I develop a truthmaker semantics for essence and use the semantics to investigate the explanatory role of essence."

406.   ———. 2020. "Essence." In *The Routledge Handbook of Metaphysical Grounding* , edited by Raven, Michael J., 324-335. New York: Routledge.
"Philosophers have recently explored various interesting relations between metaphysical grounding and essence, not all of which are compatible.
(...)
The aim of this chapter is to provide an overview of this literature. To achieve this aim in a systematic way, I divide the chapter into four sections. In the first section, I review the literature on essence. In the second section, I outline various reductive proposals: reductions of essence to ground, reductions of ground to essence, and reductions of both to a third party. In the third section, I outline various proposed entailments: entailments from essence to ground and entailments from ground to essence. In the fourth section, I outline how essence and ground have been jointly applied toward various theoretical ends." (p. 325)