

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

Annotated bibliography on metaphysical grounding. Second part: D-G

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From the section **Ontologists of 19th and 20th centuries**:

Annotated bibliography of Kit Fine:

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Unpublished Papers (available on line)

Kit Fine. Annotated bibliography of the studies on His Philosophy



Annotated bibliography of Kit Fine: Complete PDF Version on the website [Academia.edu](https://www.academia.edu)

Bibliography

1. 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."
2. 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 explanation on its own." (pp. 1-2)
3. ———. 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 ground 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).
 4. ———. 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."
 5. ———. 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.
 6. 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."
7. 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 *fundamental* 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)
 8. ———. 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."
 9. ———. 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."
 10. ———. 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."
 11. 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
12. 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!.
13. ———. 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)
14. 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)."
15. ———. 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."
16. ———. 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.
17. ———. 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."
18. ———. 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, every 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)

References

Armstrong, D. M. 1997: *A World of States of Affairs*. Cambridge: Cambridge University Press.

Beebe, H. and J. Dodd (eds.) 2005: *Truthmakers: The Contemporary Debate*, Oxford: Oxford University Press.

Cameron, R. P. 2008: 'Truthmakers and Ontological Commitment'. *Philosophical Studies* 140, pp. 1-18.

Chalmers, D., D. Manley and R. Wasserman (eds.) 2009: *Metametaphysics*. Oxford: Oxford University Press.

Melia, J. 2005: 'Truthmaking without Truthmakers'. In Beebe and Dodd 2005, pp. 67-83.

Schaffer, J. 2007: 'From Nihilism to Monism'. *Australasian Journal of Philosophy* 85, pp. 175-91.

- 2009: 'On What Grounds What'. In Chalmers, Manley and Wasserman 2009, pp. 357-83.

- 2010a: 'Monism: The Priority of the Whole'. *The Philosophical Review* 119, pp. 31-76.

19. ———. 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."
20. ———. 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)

21. ———. 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."
22. ———. 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."
 References
 Daly, Chris. Skepticism About Grounding. In *Metaphysical Grounding: Understanding the Structure of Reality*, pages 81–100. Cambridge: Cambridge University Press, 2012.
 Hofweber, Thomas. Ambitious, Yet Modest, Metaphysics. In David Chalmers, David Manley, and Ryan Wasserman, editors, *Metametaphysics: New Essays on the Foundations of Ontology*, pages 260–79. Oxford: Oxford University Press, 2009.
 Koslicki, Kathrin. The Coarse-Grainedness of Grounding. *Oxford Studies in Metaphysics*, 9: 306–44, 2015.
 Thompson, Naomi. Grounding and Metaphysical Explanation. *Proceedings of the Aristotelian Society*, 116(3): 395–402, October 2016a.
 Turner, Jason. Curbing Enthusiasm About Grounding. In *Philosophical Perspectives: Metaphysics*, volume 30, pages 366–96. Malden, MA: Wiley, 2016.
 Wilson, Jessica M. No Work for a Theory of Grounding. *Inquiry*, 57(5): 535–79, 2014.

23. 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 version 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."
24. ———. 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."
25. ———. 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."
26. ———. 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)
27. 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

Rosen, Gideon (2010) 'Metaphysical Dependence: Grounding and Reduction,' in Bob Hale and Aviv Hoffmann (eds.), *Modality: Metaphysics, Logic, and Epistemology*, pp. 109–136. Oxford: Oxford University Press.

Schwartzkopff, Robert (2011) 'Numbers as Ontologically Dependent Objects: Hume's Principle Revisited,' in *Grazer Philosophische Studien* 82(1):353–373.

28. ———. 2020. "Analyticity." 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)
29. 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."
 References
 Paul Audi, "Grounding: Toward a Theory of the In-Virtue-of Relation," *Journal of Philosophy*, vol. 109, no. 12 (2012), pp. 685-711.
 Gideon Rosen, "Metaphysical Dependence: Grounding and Reduction," in *Modality: Metaphysics, Logic, and Epistemology*, ed. Bob Hale and Aviv Hoffman (New York: Oxford University Press, 2010), pp. 109-135.
30. 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

Oderberg, D. (2007). *Real Essentialism*, Routledge, London.

Oderberg, D. (2011). Essence and properties, *Erkenntnis* 75: 85-111.

31. 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)
32. 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."
33. 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 then outline 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."
34. ———. 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)
35. 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)
36. 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)
37. ———. 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 the 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 the 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)

38. ———. 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)
39. ———. 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)

40. ———. 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].

References

[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.
41. ———. 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.
- References
- Audi, P. forthcoming. Grounding: Toward a Theory of the In-Virtue-Of Relation', *Journal of Philosophy* [109, 2012, pp. 685-711.]
- Batchelor, R. 2010. 'Grounds and Consequences', *Grazer Philosophische Studien* 80: 65–77
- Correia, F. 2005. *Existential Dependence and Cognate Notions*. Munich: Philosophia Verlag
- 2010. 'Grounding and Truth-Functions', *Logique et Analyse* 53: 251–79
- Raven M. 2009. *Ontology, From a Fundamentalist Point of View*. Ph.D., New York University
- Rosen, G. 2010. 'Metaphysical Dependence: Grounding and Reduction', in Hale and Hoffman 2010, (eds.), 2010. *Modality: Metaphysics, Logic, and Epistemology*. New York: Oxford University Press 109–36
- Schaffer, J. 2009b. 'On What Grounds What', in Chalmers, Manley, and Wasserman 2009 (eds.), 2009. *Metametaphysics: New Essays on the Foundations of Ontology*. Oxford University Press 347–83
- Schnieder, B. 2011. 'A Logic for "Because"', *The Review of Symbolic Logic* 4: 445–65
42. ———. 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 prescind 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)

43. ———. 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)
44. ———. 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]
45. ———. 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) I 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.
46. ———. 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)
47. ———. 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)
48. Fine, Kit, and de Rosset, Louis. 2021. "A Semantics for the Impure Logic of Ground." Available at <https://www.uvm.edu/~ldeRosset/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 quantifiers, 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).

49. 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."
50. 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."
51. 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.

52. 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."
53. 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."
54. 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."
55. 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.

56. 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."
57. 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)
58. 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."
59. ———. 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)
60. ———. 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."
61. 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)
62. 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."
63. 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

- Bennett, Karen. 2011a. "By Our Bootstraps." *Philosophical Perspectives* 25: 27–41.
- Dasgupta, Shamik. 2014. "The Possibility of Physicalism." *Journal of Philosophy* 111: 557–92.
- Fine, Kit. 2001. "The Question of Realism." *Philosophers' Imprint* 1: 1–30.
- 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.
64. 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."
65. ———. 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.
66. 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."