

[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. Third part: Fis-Lan

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For the work of Kit Fine see:

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Bibliography

1. 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."
2. 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."
3. 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.

4. 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."
5. 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."
6. 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."
7. 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.
8. 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."
 9. 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)
 10. 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."

11. ———. 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)
12. ———. 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."
13. 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)
14. 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."
15. 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.

16. 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."
17. ———. 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.
18. 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."

19. 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, the 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.
 Campbell, K. (1990) *Abstract Particulars*. Oxford: Blackwell Publishing.
 Ehring, D. (2011) *Tropes: Properties, Objects, and Mental Causation*. Oxford: Oxford University Press.
 Smith, D. (2016) 'Quid Quidditism Est?' *Erkenntnis* 81(2), 237-57.
20. 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 Kripke's own theory are solved." (p. 216)
 (1) Kripke, Saul. 'Outline of a Theory of Truth'. *The Journal of Philosophy* 72 (1975): 690–716.
21. ———. 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."
22. 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)

23. 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)
24. 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)
25. Hoeltje, Miguel, Schnieder, Benjamin, and Steinberg, Alex, eds. 2013. *Varieties of Dependence: Ontological dependence, Grounding, Supervenience, Response-*

- Dependence*. Munich: Philosophia Verlag.
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26. 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.
27. 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."
28. 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)
29. 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 Religion* 4 (2012). pp. 173-201.
30. Jago, Mark, ed. 2016. *Reality Making*. 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.
31. ———. 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 Naomi Thompson, 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?"
32. ———. 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-
33. ———. 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)
34. 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;
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35. ———. 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)
36. 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."
37. ———. 2018. "When are Structural Equation Models Apt? Causation versus Grounding." In *Explanation Beyond Causation: Philosophical Perspectives on Non-Causal Explanations*, edited by Reutlinger, Alexander and Saatsi, Juha, 250-266. New York: Oxford University Press.
 "In section 2 I will briefly review how structural equation modelling works in the causal case before showing how the formal framework can be extended to the grounding case.
 In section 3 I will argue that it is only the formal framework that carries over to the grounding case. In particular, the seeming unification of the structural equations approach to explanation disappears once we take into account what it takes for a structural equations model to have appropriately captured the situation that we are

modelling. As Schaffer (2016) and Blanchard and Schaffer (2017) emphasize, structural equation modelling is a type of modelling. Once we are given a model of some scenario or system, the obvious question to ask is whether the model is any good. That is, is the model an apt or fitting one (for the purpose at hand)? For a model to be a good one for the purposes at hand it has to contain appropriate (whatever that turns out to mean) variables and appropriately (whatever that turns out to mean) represent the relations of causal or grounding relevance." (p. 251)

References

Blanchard, T. and Schaffer, J. (2017), 'Cause without Default', in H. Beebe, C. Hitchcock, and H. Price (eds.), *Making a Difference: Essays on the Philosophy of Causation* (Oxford: Oxford University Press), 175–214.

Schaffer, J. (2016), 'Grounding in the Image of Causation', *Philosophical Studies* 173: 49–100.

38. 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.
39. 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.
40. ———. 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 schmeppendence (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? 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)

41. 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.
42. 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."
43. 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."
44. 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."
45. 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)
46. ———. 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."
47. 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.
"In recent years, many metaphysicians, following the lead of Kit Fine, have used the term 'grounding' to represent a relation of metaphysical dependency: if x is grounded in y, then x (in a certain sense) depends upon y, for its existence, or truth, or nature. We could identify fundamental entities or truths with those that are not grounded in other entities or truths, either by being absolutely ungrounded or by being in some special way grounded without being grounded in or by anything." (pp. 47-48)
48. 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."

49. ———. 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 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."
50. ———. 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 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."
51. 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, as we will discover below, grounding nevertheless suffers from some of the 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)
52. ———. 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 of grounding 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."
53. ———. 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.
54. 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."
55. ———. 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."
56. ———. 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.”
57. ———. 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)
58. ———. 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."
59. 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."
60. ———. 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 that any sentences of the form $A \wedge B$ and $B \wedge A$ 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 modified truthmaker theory of content presented in my recent paper 'Towards a theory of ground-theoretic content' (Krämer in *Synthese* 195(2):785–814, 2018)."

61. ———. 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)
62. 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.
63. 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. A grounding 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."
64. 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."

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"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)

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66. 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."

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