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

Annotated bibliography on metaphysical grounding. Fifth part: Ple-Ski

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For the work of Kit Fine see:

Annotated bibliography of Kit Fine

Bibliography

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

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

3. ———. 2019. "Grounding the Gaps or Bumping the Rug? On Explanatory Gaps and Metaphysical Methodology." *Journal of Consciousness Studies* no. 26:191-203.
    Abstract: In a series of recent papers, Jonathan Schaffer (2017a,b) presents a novel framework for understanding grounding. Metaphysical laws play a central role. In addition, Schaffer argues that, contrary to what many have thought, there is no

special 'explanatory gap' between consciousness and the physical world. Instead, explanatory gaps are everywhere. I draw out and criticize the methodology for metaphysics implicit in Schaffer's presentation. In addition, I argue that even if we accept Schaffer's picture, there remains a residual explanatory gap between consciousness and the physical. The residual gap does most of the same philosophical work as the original (e.g. in conceivability arguments). Schaffer has introduced a troublesome metaphysical methodology that fails to follow through on its biggest promise: to deflate the explanatory gap."
References
Schaffer, J. (2017a) Functionalism as a grounding principle, presented at Grounding and Consciousness, NYU Florence, August 2017.
Schaffer, J. (2017b) The ground between the gaps, *Philosopher's Imprint*, 17 (11).

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

5.   ———. 2016. "A Critical Overview of the Most Recent Logics of Grounding." In *Objectivity, Realism, and Proof: FilMat Studies in the Philosophy of Mathematics* edited by Boccuni, Francesca and Sereni, Andrea, 291-309. Dordrecht: Springer.
Abstract: "In this paper our aim is twofold: on the one hand, to present in a clear and faithful way two recent contributions to the logic of grounding, namely Correia (2014), and Fine (2012a); on the other hand, to argue that some of the formal principles describing the notion of grounding proposed by these logics need to be changed and improved."
References
Correia, F. (2014). Logical grounds. *Review of Symbolic Logic*, 7(1), 31–59.
Fine, K. (2012a). Guide to ground. In F. Correia & B. Schnieder (Eds.), *Metaphysical grounding* (pp. 37–80). Cambridge: Cambridge University Press.
Fine, K. (2012b). The pure logic of ground. *Review of Symbolic Logic*, 25(1), 1–25.

6.   ———. 2018. "On Constructing a Logic for the Notion of Complete and Immediate Formal Grounding." *Synthese* no. 195:1231-1254.
Abstract: "In Poggiolesi (2016b) we have introduced a rigorous definition of the notion of complete and immediate formal grounding; in the present paper our aim is to construct a logic for the notion of complete and immediate formal grounding based on that definition. Our logic will have the form of a calculus of natural deduction, will be proved to be sound and complete and will allow us to have fine-grained grounding principles."
References
Poggiolesi, F. (2016b). On defining the notion of complete and immediate formal grounding. *Synthese*, 193:
3147–3167.

7.   ———. 2020. "Grounding Rules and (Hyper-)Isomorphic Formulas." *Australasian Journal of Logic* no. 17:70-80.
Abstract: "An oft-defended claim of a close relationship between Gentzen inference rules and the meaning of the connectives they introduce and eliminate has given rise to a whole domain called proof-theoretic semantics, see Schroeder-Heister (1991); Prawitz (2006). A branch of proof-theoretic semantics, mainly developed by Došen (2019); Došen and Petrić (2011), isolates in a precise mathematical manner formulas (of a logic L) that have the same meaning. These isomorphic formulas are defined to be those that behave identically in inferences. The aim of this paper is to investigate another type of recently discussed rules in the literature, namely grounding rules, and their link to the meaning of the connectives they provide the grounds for. In particular, by using grounding rules, we will refine the notion of

isomorphic formulas through the notion of hyper-isomorphic formulas. We will argue that it is actually the notion of hyper-isomorphic formulas that identify those formulas that have the same meaning."

References

Došen, K. (2019). Identity of proofs based on normalization and generality. *Bulletin of Symbolic Logic*, 9:477–503.

Došen, K. and Petríc (2011). Isomorphica formulas in classical propositional logic. *Mathematical Logic Quarterly*, 58:1–17.

Prawitz, D. (2006). Meaning approached via proofs. *Synthese*, 148:507–524.

Schroeder-Heister, P. (1991). Uniform proof-theoretic semantics for logical constants (abstract). *Journal of Symbolic Logic*, 56:11–42.

8.   ———. 2020. "Grounding Rules for (Relevant) Implication." *Journal of Applied Non-Classical Logics* no. 31:26-55.

Abstract: "In Poggiolesi (2020a) a definition of the notion of complete and immediate formal grounding in the background of a relevant framework has been introduced; this definition generates some intuitively acceptable grounding principles for relevant implication. In the present paper our aim is to construct a logic for the notion of complete and immediate formal grounding in a relevant framework based on that definition. Our logic will have the form of a calculus of natural deduction and will formalize the relation of grounding both as a meta-linguistic relation and as a connective. The calculus will contain grounding rules for relevant implication and will be proved to be sound and complete with respect to the original definition. Finally we will prove the deduction theorem at the grounding level, i.e. we will show that grounding formalized as a metalinguistic relation is equivalent to grounding formalized as a connective."

References

Poggiolesi, F. (2020a). Grounding principles for (relevant) implication. *Synthese*, pages 1-28.

9.   ———. 2020. "Logics." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 213-227. New York: Routledge.

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

10.   ———. 2021. "Grounding Principles for (Relevant) Implication." *Synthese* no. 198:7351–7376.

Abstract: "Most of the logics of grounding that have so far been proposed contain grounding axioms, or grounding rules, for the connectives of conjunction, disjunction and negation, but little attention has been dedicated to the implication connective. The present paper aims at repairing this situation by proposing adequate grounding principles for relevant implication. Because of the interaction between negation and implication, new grounding principles concerning negation will also arise."

11.   Prasada, Sandeep. 2021. "Formal Explanation and Mechanisms of Conceptual Representation." In *Neo-Aristotelian Perspectives on Formal Causation*, edited by Jansen, Ludger and Sandstad, Petter, 269-286. New York: Routledge.

"The plan for the paper is as follows. Section 2 provides a sketch of the empirical research that suggests that children and adults routinely make use of formal explanations. Section 3 defends the interpretation of those data as revealing the use

of Aristotle's formal *aitia* in generating those explanations. I leave the Greek term *aitia* untranslated as common translations tend to be problematic. Section 4 describes the formal characteristics of the mechanisms that have been proposed to underlie the representation and acquisition of the type of generic knowledge for which formal explanation is intrinsic. Section 5 discusses some of the key characteristics of the mechanisms and the manner in which the mechanisms represent the type of generic knowledge for which formal explanations are crucial. Finally, Section 6 suggests some ways in which the work described may provide a new way to look at some Aristotelian claims regarding the acquisition of first principles and the role of formal explanation in that process." (p. 269)

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

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

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

15. ———. 2013. "Is Ground a Strict Partial Order?" *American Philosophical Quarterly* no. 50:193-201.
"A Schism has formed among Devotees.
Orthodoxy says ground induces a strict partial order structure on reality, from the more derivative to the more fundamental. Heresy denies that ground is a strict partial order: ground is either not irreflexive (Jenkins 2011) or not transitive (Schaffer 2012).
What's at stake? The structure of reality, answer Devotees. Even Infidels have a stake: they might take Devotees' infighting as evidence against ground's coherence (cf. Wilson). My aim is to defend Orthodoxy against Heresy. I first characterize Orthodoxy (§ 2) and then the Heresy against it (§ 3). Next, I argue against the Heresy that ground is not irreflexive (§ 4) and then argue against the Heresy that

ground is not transitive (§ 5). My defense of Orthodoxy vindicates ground's Orthodox deployment "in the wild" and weakens Infidels's attempts to leverage the Schism into an argument for ground's incoherence (§ 6)." (p. 193)

References

Jenkins, Carrie S. 2011. "Is Metaphysical Grounding Irreflexive?," *Monist*, vol. 94, no. 2, pp. 267-276.

Schaffer, Jonathan. 2012. "Grounding, Transitivity, and Contrastivity," in *Metaphysical Grounding: Understanding the Structure of Realit*y, ed. Fabrice Correia and Benjamin Schnieder (Cambridge: Cambridge University Press), pp. 122-138.

Wilson, Jessica. Unpublished manuscript. "No Work for a Theory of Grounding." [*Inquiry: An Interdisciplinary Journal of Philosophy*, 57, 2014, pp. 535-579]

16.   ———. 2015. "Ground." *Philosophy Compass* no. 10:322-333.

Abstract: "This essay focuses on a recently prominent notion of (metaphysical) ground which is distinctive for how it links metaphysics to explanation. Ground is supposed to serve both as the common factor in diverse in virtue of questions as well as the structuring relation in the project of explaining how some phenomena are "built" from more fundamental phenomena. My aim is to provide an opinionated synopsis of this notion of ground without engaging with others. Ground, so understood, generally resists illumination by appeal to more familiar models of explanation. Nevertheless, its distinctive explanatory and metaphysical aspects guide us on characterizing its explanatory logic and its metaphysical features. Some issues concerning the meta-question of what (if anything) grounds ground are explored, as well as some recent skeptical challenges to ground."

17.   ———. 2017. "New Work for a Theory of Ground." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 60:625-655.

Abstract: "There has been much recent interest in a distinctively metaphysical kind of determinative explanation: ground. This paper concerns various skeptical challenges to ground's relevance to metaphysics, such as that it is an empty posit, that the work it is supposed to do is appropriated by other notions, and that it is inapt for specific issues it should serve. I argue against these challenges. My strategy is both critical and constructive. Critical because I argue that versions of these challenges raised by Elizabeth Barnes, Kathrin Koslicki, Mari Mikkola, and Jessica Wilson are not persuasive. Constructive because we may nevertheless learn from them new work for ground."

18.   ———, ed. 2021. *The Routledge Handbook of Metaphysical Grounding*. New York: Routledge.

Contents: Notes on Contributors XIII, Acknowledgments XVII; 1. Michael J. Raven Introduction 1;

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

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

21.   ———. 2020. "Varieties." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 194-208. New York: Routledge.
"In this chapter,I describe the state of the art for pluralist theories of grounding.Every pluralist must answer four questions:
• Why should one be a pluralist rather than a monist? (§2)
• What are the varieties of grounding? (§3)
• What is the sense (if any) in which grounding is unified? (§4)
• What is the meaning of "grounds"? (§5)
In what follows, I give various representative pluralist answers to these questions."

22.   ———. 2021. "Grounding Is Necessary and Contingent." *Inquiry: An Interdisciplinary Journal of Philosophy* no. 64:453-480.
Abstract: "Grounding is necessary just in case: if P grounds Q, then necessarily: if P, then Q. Many accept this principle. Others propose counterexamples. Instead of straightforwardly arguing for, or against, necessity, I explain the sense in which grounding is necessary and contingent. I argue that there are two kinds of grounding: what-grounding (which tells us what it is for things to be the case) and why-grounding (which tells us why things are the case), where the former kind is necessary while the latter is contingent."

23.   Roca-Royes, Sonia. 2016. "Rethinking Origin Essentialism (for Artefacts)." In *Reality Making*, edited by Jago, Mark, 152-176. Oxford: Oxford University Press.
Contents: List of Figures VII; List of Contributors VIII; Mark Jago: Reality-Making: Introduction 1; Martin Glazier: Laws and the Completeness of the Fundamental 11; Naomi Thompson: Metaphysical Interdependence 38; Jacek Brzozowski: Monism and Gunk 57; Matthew Tugby: What are Dispositional Properties? 75; Mark Jago: Essence and the Grounding Problem 99; Nicholas K.

Jones: Object as a Determinable 121; Sonia Roca-Royes: Rethinking Origin Essentialism (for Artefacts) 152; Nathan Wildman: How (not) to be a Modalist About Essence 177; Index 197-200.

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

25.   ———. 2015. "Grounding Is Not a Strict Order." *Journal of the American Philosophical Association* no. 1:517-534.
Abstract: "The paper argues that grounding is neither irreflexive nor asymmetric nor transitive. In arguing for that conclusion the paper also argues thattruthmaking is neither irreflexive nor asymmetric nor transitive."

26.   Roland, Jeffrey W. 2010. "Concept Grounding and Knowledge of Set Theory." *Philosophia* no. 38:179-193.
Abstract: "Abstract C. S. Jenkins has recently proposed an account of arithmetical knowledge designed to be realist, empiricist, and apriorist: realist in that what's the case in arithmetic doesn't rely on us being any particular way; empiricist in that arithmetic knowledge crucially depends on the senses; and apriorist in that it accommodates the time-honored judgment that there is something special about arithmetical knowledge, something we have historically labeled with 'a priori'. I'm here concerned with the prospects for extending Jenkins's account beyond arithmetic—in particular, to set theory. After setting out the central elements of Jenkins's account and entertaining challenges to extending it to set theory, I conclude that a satisfactory such extension is unlikely."
References
Jenkins, C. S. (2008). *Grounding concepts: An empirical basis for arithmetic knowledge*. Oxford: Oxford University Press.

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

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

on the basis of suppositional reasoning satisfy both externalist and internalist criteria of justification."

29.   Rosen, Gideon. 2010. "Metaphysical Dependence: Grounding and Reduction." In *Modality: Metaphysics, Logic, and Epistemology*, edited by Hale, Bob and Hoffmann, Aviv, 109-135. New York: Oxford University Press.
"Introduction: This essay is a plea for ideological toleration. Philosophers are right to be fussy about the words they use, especially in metaphysics where bad vocabulary has been a source of grief down through the ages. But they can sometimes be too fussy, dismissing as 'unintelligible' or 'obscure' certain forms of language that are perfectly meaningful by ordinary standards and which may be of some real use.
So it is, I suggest, with certain idioms of metaphysical determination and dependence. We say that one class of facts *depends upon* or *is grounded* in another. We say that a thing possesses one property in virtue of possessing another, or that one proposition makes another true. These idioms are common, as we shall see, but they are not part of anyone's official vocabulary. The general tendency is to admit them for heuristic purposes, where the aim is to point the reader's nose in the direction of some philosophical thesis, but then to suppress them in favor of other, allegedly more hygienic formulations when the time comes to say *exactly* what we mean. The thought is apparently widespread that while these ubiquitous idioms are sometimes convenient, they are ultimately too unclear or too confused, or perhaps simply too exotic to figure in our first-class philosophical vocabulary.
Against this tendency, I suggest that with a minimum of regimentation these metaphysical notions can be rendered clear enough, and that much is to be gained by incorporating them into our analytic tool kit. I make this proposal in an experimental spirit. Let us see how things look if we relax our antiseptic scruples for a moment and admit the idioms of metaphysical dependence into our official lexicon alongside the modal notions (metaphysical necessity and possibility, the various forms of supervenience) with which they are often said to contrast unfavorably. If this only muddies the waters, nothing is lost; we can always retrench. If something is gained, however, as I believe it is, we may find ourselves in a position to make some progress. (pp. 109-110)

30.   ———. 2015. "Real Definition." *Analytic Philosophy* no. 56:189-209.
"The case can be made that contemporary analytic philosophy is up to its ears in idioms of definition, analysis, reduction and constitution that are best understood in a similarly metaphysical key—as demands for real definition rather than linguistic or conceptual analysis.
(...)
The main argument for this view is that when we try to answer these questions, we are happy to entertain analyses cast in terms that fully competent masters of the analysandum need not grasp.
(...)
In my travels I have encountered some resistance to this idea, even among philosophers who are otherwise sanguine about the recrudescence of premodern metaphysics in postmodern philosophy.
(...)
The best way to overcome this skepticism would be to explain, in clear and independently intelligible terms, what it is to define a thing, or in other words, to provide a (real) definition of (real) definition. The
aim of the present note is to do just that." (p. 189)

31.   ———. 2017. "Ground by Law." *Philosophical Issues* no. 27:279-301.
"It is a commonplace, or anyway it used to be, that one way to explain a fact is to subsume it, together with its conditions, under a general law.
(...)
Metaphysical grounding is an explanatory relation. When a set of facts grounds a fact *A,* the grounded fact obtains *because* its grounds obtain.

And so we might want to know whether laws play a similar role in the grounding explanation of particular facts, and if so, what that implies about the nature of those laws. This paper explores these questions." (p. 279, a note omitted)

32.   ———. 2017. "What Is a Moral Law?" *Oxford Studies in Metaethics* no. 12:135-159.
"The main metaphysical challenge for realists abut the normative is to characterize this explanatory connection between the particular normative facts and the non-normative facts that 'underlie' them. The most straightforward answer is ethical naturalism, which I take to be the view that every particular normative fact [*Fa*] is metaphysically grounded without remainder in facts whose constituents are 100 percent non-normative." (p. 135 notes omitted)
(...)
Naturalist and non-naturalist agree that particular moral facts [Fa] always stand in some explanatory relation to the non-normative facts in the vicinity. The non-naturalist's distinctive claim is that this relation is not the much-studied relation of metaphysical grounding; nor is it causation or any other familiar explanatory relation. The challenge for the non-naturalist is to give a positive account of this connection." (pp. 136-137)

33.   ———. 2017. "Metaphysical Relations in Metaethics." In *The Routledge Handbook of Metaethics*, edited by McPherson, Tristam and Plunkett, David, 151-169. New York: Routledge.
"This chapter aims to clarify a question that can be vaguely put as follows: How are the normative facts related to the natural facts?
(...)
Our discussion assumes that there are normative facts—facts about the normative properties of things and the normative relations in which they stand. It also assumes that some facts are clearly "natural," e.g., the fact that the fish will die if they are not fed.
The challenge is to say how facts of the first sort are related to facts of the second sort.
But it must be conceded at the outset that this question is not exactly clear. When we ask how the normative is "related" to the natural, what sort of information are we seeking?
The best way to clarify a question that is unclear in this way is to say what would count as an answer to it, so the plan for what follows is to do just that. Recent work in general metaphysics provides a vocabulary in which hypotheses about the relation between the normative and the natural can be stated with some precision. This chapter explains that vocabulary by putting it to work for the purpose of providing a taxonomy of answers to our target question." (p. 151)

34.   Roski, Stefan. 2018. "Grounding and the Explanatory Role of Generalizations." *Philosophical Studies* no. 175:1985-2003.
Abstract: "According to Hempel's *(Aspects of scientific explanation and other essays.* The Free Press, New York, 1965) influential theory of explanation, explaining why some a is G consists in showing that the truth that a is G follows from a law-like generalization to the effect that all Fs are G together with the initial condition that a is F. While Hempel's overall account is now widely considered to be deeply flawed, the idea that some generalizations play the explanatory role that the account predicts is still often endorsed by contemporary philosophers of science. This idea, however, conflicts with widely shared views in metaphysics according to which the generalization that all Fs are G is partially explained by the fact that a is G. I discuss two solutions to this conflict that have been proposed recently, argue that they are unsatisfactory, and offer an alternative."

35.   Russell, Jeffrey Sanford. 2016. "Qualitative Grounds." *Philosophical Perspectives* no. 30:309-348.
"Ground and Necessity: Shamik Dasgupta argues that we shouldn't think there are any fundamental facts about particular individuals: these would be undetectable

danglers, redundant to our scientific explanations (2009; 2014; forthcoming; see also 2011; 2013).
Rather, we should hold that all facts about particular individuals are grounded in what the world is like qualitatively.(1) All non-qualitative facts hold in virtue of qualitative facts. He calls this "qualitativism". (Other names for the view are "generalism", "structuralism", or "metaphysical anti-haecceitism".) I'll call it the Qualitative Grounds thesis. I find this thesis intriguing, but I don't entirely understand it. In this paper I strive to get a clearer view of what it really involves."
(p. 309)
References
Dasgupta, Shamik. (2009). "Individuals: An Essay in Revisionary Metaphysics." *Philosophical Studies* 145(1): 35–67.
———. (2011). "The Bare Necessities." *Philosophical Perspectives* 25(1): 115–60.
———. (2013). "Absolutism Vs Comparativism About Quantity." *Oxford Studies in Metaphysics*
———. (2014). "On the Plurality of Grounds." *Philosopher's Imprint* 14(20): 1–28.
———. (forthcoming [2017]). "Quality and Structure." In Elizabeth Barnes (ed.), *Current Controversies in Metaphysics,* Routledge, [with the title *Can We Do Without Fundamental Individuals? Yes* pp. 7-23]

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

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

38. ———. 2020. "Ontology." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 361-374. New York: Routledge.

"In this chapter, I will explore a number of ways the literature has said that grounding and ontology relate. To summarize: §2 concerns itself with grounding's ability to save the ontology: to provide a safe and sane way of quantifying over certain kinds of things in our theories. §3 with its ability to price the ontology: to show how we should measure ontological simplicity. And §4 with its ability to restrict derivative ontology: to restrict what can be grounded from what.(7)" (pp. 361-362)

(7) Notice that we can also ask what ontology has to "say" about grounding. This can be divided into two. We can ask about the ontology of grounding: does grounding exist? But we can also ask about what an ontology has to say about grounding: given a preferred ontology, how should we think about grounding? Since we need to assume that grounding exists in order to discuss its import on ontology, and since this chapter is devoted to applying grounding to ontology and not ontologies to grounding, I will not address these questions here.

39. Sandstad, Petter, and Jansen, Ludger. 2021. "A Non-hylomorphic Account of Formal Causation." In *Neo-Aristotelian Perspectives on Formal Causation*, edited by Jansen, Ludger and Sandstad, Petter, 65-86. New York: Routledge.
"In this paper, we develop our own account of formal causation, which is basically inspired by Aristotle's views and might, in a way, be seen as a development of Lowe's. In Section 2, we present the basic framework of our own account of formal causation. In Section 3, we make clear that our view of formal causation is not committed to, though consistent with, (i) any specific view on universals, (ii) hylomorphism, (iii) individual forms, and (iv) biological kinds, social entities, artefacts, etc. as real kinds. Our view thus has fewer ontological commitments than many rival accounts of formal causation, and may therefore be of more general interest. In Section 4, we contrast our variant of formal causation with a more traditional hylomorphic account. In Section 5, we argue that formal causation is indispensable in explanation, and, more controversially, that it is a type of causation. To back up this position, we explore in Section 6 the dependence relations involved in cases of formal causation, such that formal causes are difference-makers. The seventh section concerns epistemological issues." (p. 66)
References
Lowe, E. J. (2006) *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*. Oxford: Oxford University Pres

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

notions of what something is and of essence are conceived differently within these two theories." (pp. 175-176, a note omitted)

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

42. Schaffer, Jonathan. 2009. "On What Grounds What." In *Metametaphysics: New Essays on the Foundations of Ontology*, edited by Chalmers, David, Manley, David and Wasserman, Ryan, 347-383. Oxford: Clarendon Press.
"On the now dominant Quinean view, metaphysics is about what there is. Metaphysics so conceived is concerned with such questions as whether properties exist, whether meanings exist, and whether numbers exist. I will argue for the revival of a more traditional Aristotelian view, on which metaphysics is about what grounds what. Metaphysics so revived does not bother asking whether properties, meanings, and numbers exist. Of course they do! The question is whether or not they are fundamental.
In §1 I will distinguish three conceptions of metaphysical structure. In §2 I will defend the Aristotelian view, coupled with a permissive line on existence. In §3 I will further develop a neo-Aristotelian framework, built around primitive grounding relations." (p. 347)

43. ———. 2010. "Monism: The Priority of the Whole." *Philosophical Review* no. 119:31-76.
"The *monist* holds that the whole is prior to its parts, and thusviews the cosmos as fundamental, with metaphysical explanation dangling downward from the One. The *pluralist* holds that the parts are prior to their whole, and thus tends to consider particles fundamental, with metaphysical explanation snaking upward from the many. Just as the materialist and idealist debate which properties are fundamental, so the monist and pluralist debate which objects are fundamental.
I will defend the monistic view. In particular I will argue that there are physical and modal considerations that favor the priority of the whole.
Physically, there is good evidence that the cosmos forms an entangled system and good reason to treat entangled systems as irreducible wholes. Modally, mereology allows for the possibility of atomless gunk, with no ultimate parts for the pluralist to invoke as the ground of being." (pp. 31-32)

44. ———. 2010. "The Least Discerning and Most Promiscuous Truthmaker." *Philosophical Quarterly* no. 60:307-324.
Abstract: "I argue that the one and only truthmaker is the world. This view can be seen as arising from (i) the view that truthmaking is a relation of grounding holding between true propositions and fundamental entities, together with (ii) the view that the world is the one and only fundamental entity. I argue that this view provides an elegant and economical account of the truthmakers, while solving the problem of negative existentials, in a way that proves ontologically revealing."

45. ———. 2012. "Grounding, Transitivity, and Contrastivity." In *Metaphysical Grounding: Understanding the Structure of Reality*, edited by Correia, Fabrice and Schnieder, Benjamin, 122-138. Cambridge: Cambridge University Press.
"Grounding is generally assumed to be transitive. The assumption of transitivity is natural. For instance, if the physical system grounds the chemical arrangement, and the chemical arrangement grounds the biological organism, then it is natural to thereby infer that the physical system must ground the biological organism.
Moreover the assumption of transitivity is useful. By treating grounding as

transitive (and irreflexive), one generates a strict partial ordering that induces metaphysical structure.
Yet I will offer counterexamples to the transitivity of grounding. Such counterexamples should not be so surprising given that grounding is akin to causation, and that there are known counterexamples to the transitivity of causation. I will conclude by explaining how a contrastive approach can resolve the counterexamples while retaining metaphysical structure." (p. 121)

46.   ———. 2015. "What Not to Multiply Without Necessity." *Australasian Journal of Philosophy* no. 93:644-664.
"Introduction: The Razor commands: *Do not multiply entities without necessity!* Few principles are as pervasive in contemporary metaphysics. Yet I argue that the Razor is too blunt a measure of ontological economy, failing to distinguish fundamental from derivative entities. Instead I recommend the more precise *Laser*, which is focused specifically on fundamental entities, and commands: *Do not multiply fundamental entities without necessity!*
I argue that the Laser represents an improvement over the Razor, I connect the Laser to an underlying 'bang for the buck' methodology, and I trace the implications of this bang-for-the-buck methodology for certain metaphysical debates. What emerges is general pressure towards a *permissive* and abundant view of what there is, coupled with a restrictive and sparse view of what is fundamental. Classical mereology and pure set theory come out as paradigms of methodological virtue, for making so much from so little.
In arguing that the Laser represents an improvement over the Razor, I take for granted that ontological economy is an aspect of rational theory choice.
(...)
My thesis is that, given that ontological economy is an aspect of rational theory choice, this notion of economy is better scanned through the Laser.

47.   ———. 2016. "Grounding in the Image of Causation." *Philosophical Studies* no. 173:49-100.
Abstract: "Grounding is often glossed as metaphysical causation, yet no current theory of grounding looks remotely like a plausible treatment of causation. I propose to take the analogy between grounding and causation seriously, by providing an account of grounding in the image of causation, on the template of structural equation models for causation."

48.   ———. 2016. "Ground Rules: Lessons from Wilson." In *Scientific Composition and Metaphysical Ground*, edited by Aizawa, Ken and Gillett, Carl, 143-170. London: Palgrave-Macmillan.
"*Overview*: In section "A Brief Introduction to Grounding", I offer a brief introduction to the notion of grounding. In sections "Are Grounding Claims Informative? and Are Grounding Claims Helpful?", I take up Wilson's two main objections to grounding-based approaches—that bare grounding claims are uninformative, and that such claims are unhelpful—and extract two main lessons. In section "Wilson's Pluralistic Framework", I critique Wilson's rival pluralistic approach for, among other things, not taking up Wilson's own lessons. I conclude in section "Structural Equation Models to the Rescue" by explaining how an approach based on structural equation models for grounding has a special claim to adequacy." (p. 144)
References
Wilson, J. M. (2014). No work for a theory of grounding. Inquiry, 57, 535–79.

49.   ———. 2017. "The Ground Between the Gaps." *Philosophers' Imprint* no. 17:1-26.
"*Overview*: In §1 I review and clarify the idea there is a special explanatory gap arising between the physical and the phenomenal. In §2 I examine the usual "transparent" connections such as between the H, H, and O atoms and the H_2O molecule they compose, and argue that such transitions require substantive metaphysical principles (in this case mereological principles about both the existence and the nature of wholes). In §3 I offer a more theoretical route to the

more general conclusion that substantive metaphysical principles are needed in all concrete cases, by presenting a formalism for grounding relations generally (based on structural equation models) which requires the specification of dependence functions. Finally, in §4 I articulate a form of physicalism — "ground physicalism" — on which the physical is the ultimate ground for the chemical, the biological, and the psychological, and show how it resolves explanatory gap worries." (p. 2)

50.   ———. 2017. "Social Construction as Grounding; or: Fundamentality for Feminists, a Reply to Barnes and Mikkola." *Philosophical Studies* no. 174:2449-2465.
Abstract: "Feminist metaphysics is guided by the insight that gender is socially constructed, yet the metaphysics behind social construction remains obscure. Barnes and Mikkola charge that current metaphysical frameworks—including my grounding framework—are hostile to feminist metaphysics. I argue that not only is a grounding framework hospitable to feminist metaphysics, but also that a grounding framework can help shed light on the metaphysics behind social construction. By treating social construction claims as grounding claims, the feminist metaphysician and the social ontologist both gain a way to integrate social construction claims into a general metaphysics, while accounting for the inferential connections between social construction and attendant notions such as dependence and explanation. So I conclude that a grounding framework can be helpful for feminist metaphysics and social ontology."

51.   ———. 2021. "Ground Functionalism." *Oxford Studies in Philosophy of Mind* no. 1:171-207.
"I have the bold ambition of reviving the hopeful materialist story, by adding a new chapter—*ground functionalism*—which integrates functionalist insights about the mind with ground-theoretic insights about explanation.
The ground functionalist posits a *mind making* principle linking material states to mental states via functional role, such that a properly choreographed system dances out a mind. I argue that ground functionalism preserves the insights of functionalism, while enabling a viable explanation for consciousness." (pp. 171-172)

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

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

54.   ———. 2011. "A Logic for 'Because'." *The Review of Symbolic Logic* no. 4:445-465.
Abstract: "In spite of its significance for everyday and philosophical discourse, the explanatory connective 'because' has not received much treatment in the philosophy of logic. The present paper develops a logic for 'because' based on systematic connections between 'because' and the truth-functional connectives."

55.   ———. 2016. "In Defence of a Logic for 'Because'." *Journal of Applied Non-Classical Logics*:160-171.
Abstract: "The present author developed a calculus for the logic of 'because'.
In a recent paper in this journal, it has been claimed that the central inference rules for the logic are invalid and that the intuition upon which the rules are based is not accounted for. This note criticises these arguments and presents an independent argument in favour of the rules used in the logic."
References
Tsohatzidis, S. (2015). *A problem for a logic of 'because'.* Journal of Applied Non-Classical Logics, 25, 46–49.

56.   ———. 2018. "On Ground and Consequence." *Synthese* no. 198:1335-1363.
Abstract: "What does it mean that some proposition follows from others? The standard way of spelling out the notion proceeds in modal terms: x follows from y iff necessarily, if y is true, so is x. But although this yields a useful and manageable account of consequence, it fails to capture certain aspects of our pre-theoretical understanding of consequence. In this paper, an alternative notion of logical consequence, based on the idea of grounding, is developed."

57.   ———. 2019. "On the Relevance of Grounds." In *Quo Vadis, Metaphysics?: Essays in Honor of Peter van Inwagen*, edited by Szatkowski, Mirosław, 59-82. Berlin: de Gruyter.
Abstract: "Three traditional philosophical issues that van Inwagen discusses in his metaphysical works are the Principle of Sufficient Reason, the question of why there is something rather than nothing, and the question of whether free will is compatible with determinism. The three topics are connected by a conceptual tie: the notion of a ground. In this essay, it is argued that van Inwagen's take on the three topics, ingenious as it otherwise is, suffers from an inadequate conception of the underlying notion of a ground."

58.   ———. 2020. "Grounding and Dependence." *Synthese* no. 197:95-124.
Abstract: "The paper deals with the notions of grounding and of existential dependence.
It is shown that cases of existential dependence seem to be systematically correlated to cases of grounding and hence the question is raised what sort of tie might hold the two notions together so as to account for the observed correlation. The paper focusses on three possible ties between grounding and existential dependence: identity (as suggested in Jonathan Schaffer's works), definition (as suggested by Fabrice Correia and Benjamin Schnieder), and grounding (as suggested by Kathrin Koslicki and Francesco Orilia). A case for the definitional tie is made."

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

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

61.   Schulte, Peter. 2019. "Grounding Nominalism." *Pacific Philosophical Quarterly* no. 100:482-505.

Abstract: "The notion of grounding has gained increasing acceptance among metaphysicians in recent years. In this paper, I argue that this notion can be used to formulate a very attractive version of (property) nominalism, a view that I call 'grounding nominalism'. Simplifying somewhat, this is the view that *all properties are grounded in things*. I argue that this view is coherent and has a decisive advantage over competing versions of nominalism: it allows us to accept properties as real, while fully accommodating nominalist intuitions. Finally, I defend grounding nominalism against several seemingly troublesome objections."

62. Sher, Gila. 2019. "Where Are You Going, Metaphysics, and How Are You Getting There? – Grounding Theory as a Case Study." In *Quo Vadis, Metaphysics?: Essays in Honor of Peter van Inwagen*, edited by Szatkowski, Mirosław, 37-57. Berlin: de Gruyter.
Abstract: "The viability of metaphysics as a field of knowledge has been challenged time and again. But in spite of the continuing tendency to dismiss metaphysics, there has been considerable progress in this field in the 20th- and 21st-centuries. One of the newest – though, in a sense, also oldest – frontiers of metaphysics is the grounding project. In this paper I raise a methodological challenge to the new grounding project and propose a constructive solution. Both the challenge and its solution apply to metaphysics in general, but grounding theory puts the challenge in an especially sharp focus. The solution consists of a new methodology, *holistic grounding* or *holistic metaphysics*. This methodology is modeled after a recent epistemic methodology, *foundational holism*, that enables us to pursue the foundational project of epistemology without being hampered by the problems associated with foundationalism."

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

64. Sider, Theodore. 2020. "Ground Grounded." *Philosophical Studies* no. 177:747-767.
Abstract: "Most facts of grounding involve nonfundamental concepts, and thus must themselves be grounded. But how? The leading approaches—due to Bennett, deRosset, and Dagupta—are subject to objections. The way forward is to deny a presupposition common to the leading approaches, that there must be some simple formula governing how grounding facts are grounded. Everyone agrees that facts about cities might be grounded in some complex way about which we know little; we should say the same about the facts of grounding themselves. The kinds of facts that might enter into the grounds of the facts of grounding are explored at length."

65. ———. 2020. *The Tools of Metaphysics and the Metaphysics of Science*. Oxford: Oxford University Press.
Chapter 1: Postmodal Metaphysics and Structuralism 1; Chapter 2: Nomic Essentialism 23-44.
"Recently there has been a shift to new tools (or perhaps a return to old ones), which I will call "postmodal". David Lewis (who had also been a leader in the modal revolution) enriched his conceptual toolkit with the concept of natural properties and relations—those elite properties and relations that determine objective similarities, occur in the fundamental laws, and whose distribution ?xes everything else. I myself have argued for the centrality of a concept that is closely related to Lewis's notion of naturalness: the concept of structure, or as I'll put it here, the concept of a fundamental concept. Fundamental concepts are not limited to those expressed by predicates; we may ask, for instance, whether quanti?ers or modal operators express fundamental concepts—whether they help to capture the world's fundamental structure. Kit Fine (re-)introduced the concept of essence, and argued

that it should not be understood modally. He pointed out that although it does seem to be an essential feature of the singleton set [Socrates] that it contain Socrates, it does not seem to be an essential feature of Socrates that he be contained in [Socrates]; being a member of this set is not "part of what Socrates is". Thus we cannot define a thing's essential features, as it had been common to do in the halcyon days of the modal era, as those features that the thing possesses necessarily, for it is plausible that Socrates possesses the feature of being a member of [Socrates] necessarily.(2) Fine also (re-)introduced a notion of ground. One fact grounds another, he said, if the second holds in virtue of the first—if the first explains, in a distinctively metaphysical way, the second. Interest in ground and related concepts over the past ten years or so has been intense." (p. 2)
(2) See also Dunn (1990, section 4).
References
Dunn, J. Michael (1990). Relevant predication 3: Essential properties. In T*ruth or Consequences (e*dited by J. Dunn and A. Gupta), pp. 77–95. Kluwer Academic Publishers, Dordrecht.

66. Sijuwade, Joshua. 2021. "Grounding and the Existence of God." *Metaphysica*. First online December 16, 2021.
Abstract: "In this article, I seek to assess the extent to which Theism, the claim that there is a God, can provide a true fundamental explanation for the instantiation of the grounding relation that connects the various entities within the layered structure of reality. More precisely, I seek to utilise the explanatory framework of Richard Swinburne within a specific metaphysical context, a ground-theoretic context, which will enable me to develop a true fundamental explanation for the existence of grounding. And thus, given the truth of this type of explanation, we will have a further reason to believe in the existence of God."

67. Sirkel, Riin, and Tahko, Tuomas E. 2014. "Editorial: Aristotelian Metaphysics: Essence and Ground." *Studia Philosophica Estonica* no. 7:1-4.
Articles: Justin Zylstra: Dependence and Fundamentality 5-28; Margaret Anne Cameron: Is Ground Said-in-Many-Ways? 29-55; Pablo Carnino: On the Reduction of Grounding to Essence 56-71; Ryan Christensen: Essence, Essence, and Essence 72-87; Lucas Angioni: Aristotle on Necessary Principles and on Explaining X through X's essence 88-112; Kathrin Koslicki: The Causal Priority of Form in Aristotle 113-141; Michail Peramatzis: Sameness, Definition, and Essence 142-167; Christine J. Thomas: Plato on Metaphysical Explanation: Does 'Participating' Mean Nothing? 168-194; Travis Dumsday: E.J. Lowe on the Unity Problem 195-218.
"This special issue of *Studia Philosophica Estonica* centers around Aristotelian metaphysics, construed broadly to cover both scholarly research on Aristotle's metaphysics as well as work by contemporary metaphysicians on Aristotelian themes.
(...)
"The contribution this special issue makes to the ongoing discussion is twofold. First, the special issue promotes a deeper interaction between scholars of Aristotle and contemporary metaphysicians. We hope that the papers encourage people working in the history of philosophy to relate to contemporary discussions and people working in contemporary metaphysics to engage with Aristotle and Ancient scholarship. Second, the special issue is unified in its focus on two themes in Aristotelian metaphysics, essence and grounding. The papers address questions concerning fundamentality and dependence, ontological independence or priority, the causal priority of forms, the unity of grounding, the reduction of grounding to essence, the unity of essence, the roles of essence, and explanation and definition. We hope that this issue opens up fresh and exciting avenues for future research both in Ancient scholarship as well as in contemporary metaphysics. A brief summary of the volume's papers follows."(p. 1)

68. Siscoe, Robert Weston. 2021. "Grounding and a Priori Epistemology: Challenges for Conceptualism." *Synthese* no. 199:11445-11463.

Abstract: "Traditional rationalist approaches to a priori epistemology have long been looked upon with suspicion for positing a faculty of rational intuition capable of knowing truths about the world apart from experience. Conceptualists have tried to fill this void with something more empirically tractable, arguing that we know a priori truths due to our understanding of concepts. All of this theorizing, however, has carried on while neglecting an entire cross section of such truths, the grounding claims that we know a priori. Taking a priori grounding into account poses a significant challenge to conceptualist accounts of a priori knowledge, as it is unclear how merely understanding conceptual connections can account for knowledge of grounding. The fact that we do know some grounding truths a priori, then, is a significant mark in traditional rationalism's favor, and the next frontier for those who aim to eliminate the mystery surrounding a priori knowledge."

69.　　　———. 2021. "Grounding, Understanding, and Explanation." *Pacific Philosophical Quarterly*.
Abstract: "Starting with the slogan that understanding is a 'knowledge of causes', Stephen Grimm and John Greco have argued that understanding comes from a knowledge of dependence relations. Grounding is the trendiest dependence relation on the market, and if Grimm and Greco are correct, then instances of grounding should also give rise to understanding. In this paper, I will show that this prediction is correct – grounding does indeed generate understanding in just the way that Grimm and Greco anticipate. However, grounding examples of understanding also show that Grimm and Greco are not telling the full story when it comes to understanding. Understanding can only be generated by a particular subset of dependence relations – those dependence relations that are also explanatory. Grimm and Greco should thus appeal to a privileged class of dependence relations, relations like grounding that can also give rise to explanation."

70.　　Skiba, Lukas. 2022. "In Defence of Hybrid Contingentism." *Philosophers' Imprint* no. 22:1-30.
"After situating, in §2, the haecceities objection more carefully in the overall context of Williamson's case for uniform necessitism and clarifying it in some important respects, I turn to the notion of non-causal explanation it involves and whose role in the objection has, surprisingly, not yet received much attention. I fill this lacuna in §3, where I argue that the objection can be fruitfully understood as challenging the contingentists to provide metaphysical grounds for the haecceity facts in question. In §4, I propose a way in which contingentists can meet this challenge, drawing n recent work concerning the interaction of round and essence. In §5, I develop and defend the resulting hybrid contingentist position by showing that, first impression to the contrary, it coheres well with an essence-based account of ontological dependence.9" (p. 3, notes omitted)
References
Williamson, T. (2013). *Modal Logic as Metaphysics.* Oxford University Press.

71.　　Skiles, Alexander. 2014. "Primitivism about Intrinsicality." In *Companion to Intrinsic Properties*, edited by Francescotti, Robert M., 221-252. Berlin: de Gruyter.
"Objections to the thesis that intrinsicality fails to succumb to reductive analysis have not been fully articulated or defended anywhere in the literature. Indeed, the thesis is rarely mentioned even as an option (let alone a live one). Nor has it been discussed what a viable account of intrinsicality along these lines could, or should, look like.
The goal of this chapter is to explore the prospects of the view I shall call *primitivism about intrinsicality*, and offer a limited defense. A key component of this limited defense consists simply in clarifying what it could be, exactly, for intrinsicality to be "primitive". As we shall see, at least some *prima facie* decisive objections to primitivism seem less convincing once this has been done.
Doing so is the task of section 1. In section 2, I then consider several arguments for primitivism about intrinsicality. And finally, in section 3, I consider several arguments against it." (p. 222, a note omitted)

72.   ———. 2015. "Against Grounding Necessitarianism." *Erkenntnis* no. 80:717-751.
Abstract: "Can there be grounding without necessitation? Can a fact obtain wholly
in virtue of metaphysically more fundamental facts, even though there are possible
worlds at which the latter facts obtain but not the former? It is an orthodoxy in
recent literature about the nature of grounding, and in first-order philosophical
disputes about what grounds what, that the answer is no. I will argue that the correct
answer is yes. I present two novel arguments against grounding necessitarianism,
and show that grounding contingentism is fully compatible with the various
explanatory roles that grounding is widely thought to play."

73.   ———. 2020. "Necessity." In *The Routledge Handbook of Metaphysical
Grounding*, edited by Raven, Michael J., 148-163. New York: Routledge.
"In §1, I discuss the main arguments in the literature for necessitarianism and
consider responses to them. In §2, contingentism is subjected to the same treatment.
In §3, I survey the internalism versus externalism dispute. (Since the
necessitarianism vs. contingentism dispute has been explored in more depth than the
internalism vs. externalism dispute, and because many of the maneuvers available
within the first dispute have analogues in the second, I will focus more attention on
the former.)" (pp. 148-149)

74.   Skiles, Alexander, and Trogdon, Kelly. 2013. "Grounding." In *The Routledge
Handbook of Metametaphysics*, edited by Bliss, Ricki and Miller, J. T. M., 199-210.
New York: Routledge.
"Metametaphysics concerns foundational metaphysics. Questions of foundational
metaphysics include: What is the subject matter of metaphysics? What are its aims?
What is the methodology of metaphysics? Are metaphysical questions coherent? If
so, are they substantive or trivial in nature? Some have claimed that the notion of
grounding is useful in addressing such questions. In this chapter, we introduce some
core debates about whether – and, if so, how – grounding should play a role in
metametaphysics." (p. 199)
(...)
"In what follows, we focus on three of the most interesting and widely discussed
roles that have been assigned to grounding in metametaphysics. Specifically, we
consider how grounding might be relevant to whether metaphysical questions are
substantive (§1), how to choose between metaphysical theories (§2), and how to
understand so-called 'location problems' (§3)." (.p 200, anote omitted)

75.   ———. 2019. "Maurin on Grounding and Explanation." In *Maurinian Truths –
Essays in Honour of Anna-Sofia Maurin on her 50th Birthday*, edited by Wahlberg,
Tobias Hansson and Stenwall, Robin, 159-172. Lund: Lund University.
"In the classical and contemporary literature on grounding, explanatory language is
routinely used to communicate what it is and to motivate substantive principles
about how it behaves."
(...)
"Two views have emerged about how to answer this question.
Some stipulate that by 'grounding' they mean a distinctive form of determination,
what we will call *determination$_G$*, where to determine is, roughly speaking, to
produce or *bring about* (Audi 2012; Schaffer 2016; and Trogdon 2013)."
(...)
"Others stipulate that by 'grounding' they mean a distinctive form of explanation,
what we will call *explanation$_G$* (Dasgupta 2017; Litland 2015; and Rosen 2010).
(...)
As is customary, let us call the latter view *Unionism* (grounding is explanation$_G$)
and the former view *Separatism* (grounding is determination$_G$).

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

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

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76. ———. 2021. "Should Explanation Be a Guide to Ground?" *Philosophical Studies* no. 178:4083-4098.

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