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

Annotated bibliography on the history of fundamentality and grounding (N - Z)

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For the work of Kit Fine see:

Annotated bibliography of Kit Fine

Bibliography

1.   Newlands, Samuel. 2018. *Reconceiving Spinoza*. New York: Oxford University Press.
Chapter 3: *Conceptual Dependence Monism*, pp. 57-89.
"2.5 *Eliminativism and the Nature of Grounding*.
We have seen Spinoza account for claims and facts about some putative forms of metaphysical dependence, such as causation and inherence, in terms of conceptual dependence, without ever moving in the reverse direction. I suggested that this unidirectional explanatory priority follows from Spinoza's more general privileging of conceptual dependence over all other putative forms of dependence. Causation, inherence, following-from, and existential dependence obtain *in virtue of* conceptual connections between *relata*. But what is this further in-virtue-of, if not itself a kind of dependence?
In contemporary parlance, how are causal facts dependent on or grounded in conceptual facts, according to Spinoza? By Spinoza's own explanatory demands, we need an explanation of *that* form of dependence too." (p. 79)
(...)
"In the end, I am inclined to think Spinoza embraces the starker eliminative option. There are no distinctions between causation, inherence, following-from, and the rest of his non-conceptual laundry list. All forms and instances of metaphysical dependence just are conceptual in the stronger sense that there are neither extensional nor intensional differences among the conceptual relations that are the truth-makers for ascriptions of causation, inherence, and the rest. Or, if the appeal to truth-making seems worrisome here (what is making, if not yet more dependence?), we could say that for Spinoza, all and only features of conceptual dependence relations are the features of every form and instance of metaphysical dependence. That is, in addition to affirming conceptual sensitivity of causation and the rest,

Spinoza affirms conceptual identification as well. This would also explain why Spinoza treats conceptual dependence as explanatorily prior to (what others take to be) other forms of dependence." (p. 81, a note omitted)

2.   ———. 2024. "Leibniz on Modality." In *Modality: A History*, edited by Melamed, Yitzhak Y. and Newlands, Samuel, 118-143. New York: Oxford University Press.
"Leibniz contributed to three distinct projects involving modality, all of which were lively points of debate in the 17th century. The first concerns the distribution of necessity and contingency. What exists, happens, or is true necessarily? What exists, happens, or is true contingently? The second project concerns the analysis of modality.
What is the nature and true account of necessity and contingency? We might expect an analysis of modality to provide answers to the distribution question, but for Leibniz, the order of discovery usually went in the other direction. He antecedently wanted to avoid certain distribution answers, and he developed various analyses of modality in order to secure the desired distribution. I will present several of his most prominent efforts, some of which seem more promising than others.
Leibniz was also interested in the grounds of modality. Like many early moderns, Leibniz thought that God was the ultimate ground of both modal truths and modal truthmakers. But there was fierce disagreement about exactly how God serves as the ultimate ground of modality.
Leibniz defends an intellectualist account of the divine grounds of possibility and he offers pointed criticisms of the main alternatives.
After exploring Leibniz's grounding account in Section 3, I will conclude by sketching how Leibniz's different modal projects could work in tandem." (p. 119)

3.   Normore, Calvin G. 2024. "Up in the Air: Buridan's Principled Rejection of Grounding." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 239-250. Cham (Switzerland): Springer.
Abstract: "The fourteenth-century theorist Jean Buridan claimed that in a thoroughly bivalent framework central semantic concepts such as truth and signification are both free of paradox and ungrounded. This paper outlines and defends Buridan's approach and suggests that it may give reason to think that ungroundedness is not problematic in semantics or in metaphysics."

4.   Normore, Calvin G., and Schmid. Stephan, eds. 2024. *Grounding in Medieval Philosophy*. Cham (Switzerland): Springer.
Contents: 1. Magali Roques: Introduction: Grounding Then and Now 1; 2. Riin Sirkel: Ontological Priority and Grounding in Aristotle's Categories 33; 3. Petter Sandstad: Grounding and Aristotle's Posterior Analytics 65; 4 Paul Thom: Ground in Avicenna's Logic 83; 5. Christopher J. Martin: Abelard on Grounding in Ontology and Logic 103; 6. Jacob Archambault: Grounding Medieval Consequence 129; 7. Simona Vucu: Thomas Aquinas, Henry of Ghent, and John Duns Scotus on the Causation of Proper and Inseparable Accidents 147; 8. J. T. Paasch: Ockham on Priority and Posteriority 177; 9. Magali Roques: William of Ockham on Essential Dependence and Causation 203; 10. Thomas M. Ward: The Incoherence of Ockham's Ethics 225; 11. Calvin G. Normore: Up in the Air: Buridan's Principled Rejection of Grounding 239; 12. Mikko Yrjönsuuri: Valid on Formal Grounds 251; 13. Stephan Schmid: Two Kinds of Grounding? Suárez on Natural Resultance and Foundation 281; 14. Ricki Bliss: Some Work for a Theory of Grounding? 307; Index 331-333.

5.   Oberst, Michael. 2021. "Kant on Real Grounds and Grounds of Being." In *The Court of Reason: Proceedings of the 13th International Kant Congress. Vol. 1*, edited by Himmelmann, Beatrix and Serck-Hanssen, Camilla, 591-597. Berlin: de Gruyter.
"In recent years, some scholars have argued that Kant embraces a theory of "real grounds" that is akin to contemporary accounts of grounding. In their view, Kantian real grounds are 'explanatory' grounds, and (real) grounding is an ontological dependence relation.[1] Whilst they acknowledge causality as the paradigmatic case of

grounding, these readers think that causality is by no means the only one (Stratmann 2018, 6–7). Other examples allegedly include mathematical grounding, grounds of possibility, substance-accident and whole-part relations, and noumenal affection. I shall argue that this reading is mistaken. A compelling textual case can be made that, according to Kant, all real grounds are causes(2). Thus, if one wanted to argue against this view, one would need to establish that he considers certain kinds of non-causal grounds as real grounds. The arguably most promising candidate for that are "grounds of being" (*rationes essendi*). Although Kant put some efforts into finding a place for grounds of being within his classification of grounds, he apparently did not reach a solution that he himself considered satisfactory.

Notwithstanding this, I argue that an account would have been available to him that captures the modal intuition behind grounds of being without being real grounds in Kant's sense. I conclude that grounds of being cannot serve as an example for non-causal real grounds" (p. 591)

(1) For example, Stang argues that the grounding relation is a "non-logical non-causal asymmetric real grounding relation between mutually necessarily entailing propositions" (Stang 2016, 236). See also Chignell 2012, 650, Massimi 2017, 156–158, Stratmann 2018, 3–7, Stang 2019.

(2) My view is actually more complex. For some grounds of possibility are not actual causes, but nonetheless potential causes which are actualized under appropriate causal circumstances. As I see it, Kant follows the broadly Aristotelian tradition of understanding possibility in terms of potentiality, yet ultimately goes beyond it. I cannot argue for this view in the present paper.

References

Chignell, Andrew (2012): "Kant, Real Possibility, and the Threat of Spinoza". In: *Mind* 121/483, 635–675.

Massimi, Michela (2017): "Grounds, Modality, and Nomic Necessity in the Critical Kant". In M. Massimi/A. Breitenbach (Eds.): *Kant and the Laws of Nature*. Cambridge: Cambridge University Press, 150–170.

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

Stang, Nicholas F. (2019): "A Guide to Ground in Kant's Lectures on Metaphysics". In: C. Fougate (Ed.): *Kant's Lectures on Metaphysics: a Critical Guide*. Cambridge: Cambridge University Press, 74–101.

Stratmann, Joe (2018): "Kant, Grounding, and Things in Themselves". In: *Philosophers' Imprint* 18/7,

6. Paasch, J. T. 2024. "Ockham on Priority and Posteriority." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 177-201. Cham (Switzerland): Springer.
    Abstract: "Does William Ockham believe in a metaphysical form of grounding? In particular, does Aristotelian natural priority (as Ockham understands it) qualify as a kind of metaphysical grounding? I offer a close analysis of Ockham's texts, and I suggest that the answer is probably no. In the course of my analysis, I show that Ockham sparks a debate about priority that was taken up by other fourteenth century thinkers, and I show that Ockham's view is striking because he so sharply separates natural priority and causal priority. Unlike certain other scholastics who understand natural priority as a kind of dependence, Ockham insists that natural priority is entirely non-causal, and qua natural priority, it involves no dependence between the entities involved. This leads Ockham to deny that natural priority applies to certain cases which otherwise might count as standard candidates."

7. Poggiolesi, Francesca. 2022. "Bolzano, (the Appropriate) Relevant Logic, and Grounding Rules for Implication." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 319-342. New York: Oxford University Press.
    "In the first part of this paper the main aim is to take a closer look at exact deducibility and its relations to contemporary logic. More precisely, we will show that there exists a particular connection between Bolzano's notion of exact

deducibility and the relevant logic *CR* introduced by Tennant (1984). These reflections will not only clarify the notion of exact deducibility per se, but also, in virtue of the connection between exact deducibility and grounding, shed further light on the general Bolzanian conception of grounding In the second part of the paper we will focus on the recent studies on the logic of grounding and in particular on the grounding rules for implication, a topic that, as far as we know, has received relatively little treatment. We will try to argue that the logic CR can again play a role: it is indeed a useful and interesting framework for formulating the grounding rules for implication. The paper is organized as follows. In section 11.2 we will recall Bolzano's notions of deducibility and exact deducibility, emphasizing their logical properties.

In section 11.3 we will introduce the logic *CR*, while in section 11.4 we will explain why this is the adequate contemporary counterpart of Bolzano's notion of exact deducibility. We will use section 11.5 to discuss the issue of the grounding rules for implication. We will show that even in this context the logic CR has a role to play." (pp. 319-320)

References

Tennant, N. 1984. 'Perfect Validity, Entailment and Paraconsistency'. *Studia Logica* 43 (1-2): 179-98.

8.   Priest, Graham. 2018. "Buddhist dependence." In *Reality and its Structure: Essays in Fundamentality*, edited by Bliss, Ricki and Priest, Graham, 126-139. New York: Oxford University Press.

"Many issues in Western philosophy were discussed with great sophistication in the Eastern philosophical traditions. A prime example of this is metaphysical dependence.(1)

This is absolutely central to Buddhist metaphysics. Indeed, there is a wide variety of views about, in particular, the structure of metaphysical dependence.

In this essay, I will explain some of these views, and some of their ramifications. The aim is neither to give a scholarly account of any of these views, nor to argue for or against any one of them. Rather, the point of the essay is to open the eyes of philosophers who know little of the Eastern philosophical traditions to important possibilities of which they are likely to be unaware.

In Section 3 of this essay, I will explain three Buddhist positions concerning metaphysical dependence: those of Abhidharma, Madhyamaka, and Huayan. In Section 4, I will turn to some ways in which these positions engage with some Western debates. But first, for those readers whose knowledge of the history and development of Buddhist philosophy may be incomplete, I will explain enough of this in Section 2 to situate what is to follow." (p. 126, two note omitted)

(1) In contemporary Western philosophy, the topic is discussed under a variety of names, such as ontological dependence and grounding. Moreover, there seems to be little unanimity as to whether there is just one relationship here, or, if not, how the different varieties of the species are related.(...).

9.   Puryear, Stephen. 2020. "The Logic of Leibniz's Borrowed Reality Argument." *The Philosophical Quarterly* no. 70:350-370.

Abstract: "Leibniz argues that there must be a fundamental level of simple substances because composites borrow their reality from their constituents and not all reality can be borrowed. I contend that the underlying logic of this 'borrowed reality argument' has been misunderstood, particularly the rationale for the key premise that not all reality can be borrowed. Contrary to what has been suggested, the rationale turns neither on the alleged viciousness of an unending regress of reality borrowers nor on the Principle of Sufficient Reason, but on the idea that composites are phenomena and thus can be real only insofar as they have a foundation in substances, from which they directly 'borrow' their reality. The claim that composites are phenomena rests in turn on Leibniz's conceptualism about relations. So understood, what initially looked like a disappointingly simple argument for simples turns out to be a rather rich and sophisticated one."

10. Raven, Michael J. 2019. "(Re)Discovering Ground." In *The Cambridge History of Philosophy, 1945–2015*, edited by Becker, Kelly and Thomson, Iain D., 147-159. Cambridge: Cambridge University Press.
"Recently, there has been a rapid growth of literature on questions of determination. It has become increasingly clear that subtly different notions of determination are involved. Nevertheless, much of this literature operates under the working hypothesis that there is a distinctive kind of determination that is at issue in these questions and is itself a topic worthy of study on its own.
"Ground" has emerged as the popular, quasi-technical term for this kind of determination. A question of ground asks in virtue of what some phenomenon obtains and is answered either by stating its grounds or that it has none.
Much has recently been written about ground.[1] Here the focus is on its history in the Western analytic philosophical tradition since 1945.[2]" (p. 147)
(2) Although ground does not only appear in the Western analytic philosophical tradition, space requires omitting its appearances elsewhere.

11. Roques, Magali. 2024. "Introduction: Grounding Then and Now." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 1-32. Cham (Switzerland): Springer.
"Sincde the contributions in this volume cticically examines medieval views on non-causal explanation by referring to the current debate on non-causal explanation, I will open the volume with an introduction to this debate, which will motivate the examination of medieval texts. I will begin with an overview of the philosophical background to the neo-Aristotelian turn in metaphysics, in which non-causal explanation occupies a central place. This will lead me to introduce the core features of the notion of non-causal explanation as it is understood in the current debate. I will then present the current state of the debate on the history of non-causal explanation, and will explain why an investigation into medieval views on non-causal explanation is much needed. Before giving a summary of the contributions, I will present the core result to which they converge—namely, that in medieval thought grounding claims are not seen as instances of a univocal concept of non-causal explanation. For medieval thinkers, the kind of claim which we would describe as a grounding claim is either a complex sentence that includes a hyperintensional sentential operator, or an atomic sentence that includes a predicate referring to a relation of priority that relates things that may be of different categories.(2) They are not troubled by working with two different types of grounding claims at the same time, since I will suggest that medieval authors need both kinds of grounding claims in order to articulate their logic and metaphysics." (pp. 2-3)
(2) See Stephan Schmid's chapter in this volume, p. 292, for another scholastic view on this interpretation of the grounding operator. According to Suárez, on Schmid's interpretation, the thought 'Snow is white' is true in virtue of its object being the fact that snow is white and of its being the case that snow is white.

12. ———. 2024. "William of Ockham on Essential Dependence and Causation." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 203-223. Cham (Switzerland): Springer.
Abstract: "It has become a commonly held view that Ockham does not defend a reductionist account of efficient causality, and that for him causal powers cannot be eliminated from causal statements. This paper argues that this reading can be refined, and that according to Ockham the analysis of causality can go one step further. In reaction to Scotus's concept of essentially ordered causes, Ockham claims that a relation of "essential dependence" holds between a total cause and its effect. I argue for a reading of this relation in counterfactual terms. If this reading is correct, Ockham's account is close in spirit to the "neo-Humean" account of causality defended by David Lewis, according to which efficient causality is counterfactual dependence plus restrictive clauses concerning cases of counterfactual dependence that are not causal and cases of redundant causation.

From this view point, Ockham's view is close in spirit to the positivist conception of metaphysics that was prevalent before the "neo-Aristotelian" turn in metaphysics."

13.   Roski, Stefan. 2017. *Bolzano's Conception of Grounding*. Frankfurt: Vittorio Klostermann.
Contents: Preface IX; I. Introduction 1; 2. Objective truth, variation & truth-preservation 19; 3. Explanatory priority: Bolzano's pure logic of grounding 55; 4. Simplicity and economy: Bolzano's impure logic of grounding 109; 5. Bolzano's logic of grounding and the logic of metaphysical grounding 215; 6. Conclusion 233; l ist of abbreviations 251; List of symbols, definitions, and principles 253; Bibliography 257; Index 267-269.
"Overview of the book
As each of the following chapters will be accompanied by a detailed overview of its content and line of argumentation, I will confine myself here to a brief overview of the main line of argumentation of the book.
At the core of Bolzano's theory of grounding lies a set of general principles that express properties the relation exhibits according to him. An analysis of these principles, their interrelation, and their role in Bolzano's methodology will form the main bulk of the book. It is heuristically useful to divide these principles into two classes. The first class contains principles that hold for every case of grounding, irrespective of any specific properties of the relata. These principles capture, as it were, minimal conditions an explanatory relation has to satisfy according to Bolzano. The second class consists of more specific principles that mostly apply only to truths from deductive or a priori sciences. Adapting a distinction by Kit Fine, I will call the former Bolzano's *pure logic of grounding* and the latter his *impure logic of grounding*.(52) Before we can dive into the details of Bolzano's theory, we will have to gain some familiarity with the nuts and bolts of his logical framework. This will be done in Chapter Two. Chapter Three then discusses Bolzano's pure logic of grounding, while Chapter Four is concerned with the impure logic of grounding. Chapter Five wraps up and draws some connections to the recent debate on grounding. In what follows I will sketch the content of each of these chapters in a little more detail." (p. 16)
(52) Cf. (Fine [The Pure Logic of Ground. *Review of Symbolic Logic* 5(1) 1-25] 2012b). The justification for employing this distinction will be given further below.

14.   ———. 2019. "Bolzano and Kim on Grounding and Unification." *Synthese* no. 196:2971-2999.
Abstract: "It is sometimes mentioned that Bernard Bolzano'swork on grounding anticipates many insights of the current debate on metaphysical grounding. The present paper discusses a certain part of Bolzano's theory of grounding that has thus far not been discussed in the literature. This part does not so much anticipate what are nowadays common assumptions about grounding, but rather goes beyond them. Central to the discussion will be a thesis of Bolzano's by which he tries to establish a connection between grounding and (deductive) unification. The paper spells out this thesis in detail and discusses the assumptions on which it rests. Next to this mainly historical aim, the paper also presents reasons why philosophers who are not interested in the historical Bolzano should find the thesis interesting by relating it to a certain view on unification and explanation that has been put forward by Kim. A final part of the paper provides a critical evaluation of the thesis against the background of current accounts of grounding."

15.   ———. 2020. "Bolzano." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 76-89. New York: Routledge.
"This chapter provides an overview of Bernard Bolzano's views about grounding. On Bolzano's account, grounding is an objective priority relation among true propositions that has certain explanatory features.The chapter briefly highlights historical influences on Bolzano's account of grounding and subsequently provides an overview of the most important aspects of it. As we shall see, Bolzano's account resembles current accounts of metaphysical grounding in many respects and can

thus easily be related to many positions in the current debate.This is going to be a main focus of this chapter.Apart from that, we shall investigate some Bolzanian ideas about grounding that differ from the current orthodoxy but may constitute interesting additions, challenges or inspirations for those working in the current debate." (p. 76)

16. Roski, Stefan, and Rumberg, Antje. 2016. "Simplicity and Economy in Bolzano's Theory of Grounding." *Journal of the History of Philosophy* no. 54:469-496.
Abstract: This paper is devoted to Bolzano's theory of grounding (*Abfolge*) in his *Wissenschaftslehre*. Bolzanian grounding is an explanatory consequence relation that is frequently considered an ancestor of the notion of metaphysical grounding. The paper focuses on two principles that concern grounding in the realm of conceptual sciences and relate to traditionally widespread ideas on explanations: the principles, namely, that grounding orders conceptual truths from simple to more complex ones (Simplicity), and that it comes along with a certain theoretical economy among them (Economy). Being spelled out on the basis of Bolzano's notion of deducibility (*Ableitbarkeit*), these principles are revealing for the question to what extent grounding can be considered a formal relation."

17. Roski, Stefan, and Rusnock, Paul. 2014. "Bolzano on Necessary Existence." *Archiv für Geschichte der Philosophie* no. 96:320-359.
Abstract: "This paper is devoted to an examination of Bolzano's notion of necessary existence, which has so far received relatively little attention in the literature.
We situate Bolzano's ideas in their historical context and show how he proposed to correct various flaws of his predecessors' definitions. Further, we relate Bolzano's conception to his metaphysical and theological assumptions, arguing that some consequences of his definition which have been deemed counterintuitive by some of his interpreters turn out to be more reasonable given the broadly Leibnizian background of his metaphysics. Finally, we consider some difficulties that arise from Bolzano's evolving views on freedom, which, at least in his early thought, was intimately linked with contingency. In an appendix, we discuss a recent debate on Bolzano's notion of necessary truth between Textor and Rusnock that has some bearing on our overall line of interpretation of Bolzano's notion of *necessary existence*."
References
Rusnock, P. 2012. "On Bolzano's Conception of Necessary Truth". *British Journal of the History of Philosophy* 20, 817-837.
Textor, M. 2013. "Bolzano on the Source of Necessity: A Reply to Rusnock". *British Journal of the History of Philosophy* 21, 381-392.

18. Roski, Stefan, and Schnieder, Benjamin. 2016. "Gründe aller Arten? Der Anspruch auf Vereinheitlichung in Bolzanos Abfolgetheorie." In *Geschichte - Gesellschaft - Geltung: XXIII. Deutscher Kongress Für Philosophie 28. September - 2. Oktober 2014 an der Westfälischen Wilhelms-Universität Münster. Kolloquienbeiträge*, edited by Quante, Michael, 891-912. Hamburg: Meiner.

19. ———. 2019. "Fundamental Truths and the Principle of Sufficient Reason in Bolzano's Theory of Grounding." *Journal of the History of Philosophy* no. 57:675-706.
Abstract: "Bernard Bolzano developed his theory of grounding in opposition to the rationalists' Principle of Sufficient Reason (the PSR). He argued that the PSR fails because there are fundamental, that is, ungrounded truths. The current paper examines Bolzano's views on fundamentality, relating them to ongoing debates about grounding and fundamentality."

20. ———. 2022. "A Survey of Bolzano's Theory of Grounding." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 4-34. New York: Oxford University Press.
"Reality is not an unordered blob of phenomena. Instead, the diverse elements of reality are structured by a web of priorities so that not all of them are on a par: some elements hold in virtue of prior elements. The prior elements may be called grounds

of the posterior elements that hold because of them; the relation connecting them may be called grounding.

This view, popular in contemporary metaphysics, is as ancient as philosophy itself. It is rooted in ideas that go back at least to Plato and Aristotle and that have remained influential throughout the entirety of Western philosophy until the twenty-first century.Bernard Bolzano's theory of grounding is a peak in the history of these ideas, as it exceeds most earlier theories in scope, depth, and rigour.

Moreover, it anticipates a range of ideas that take a prominent place in the contemporary metaphysical debate.

In this survey paper, we pursue three aims:

- First, we briefly sketch the origins of Bolzano's views on grounding and the role that grounding plays in his philosophy.

- Second, we give an overview of Bolzano's mature conception of grounding, focussing on its most detailed exposition, which can be found in his *Theory of Science*.

- Third, we introduce elements and terminology from Bolzano's conceptual framework that are required to understand his theory of grounding." (p. 4)

21. ———, eds. 2022. *Bolzano's Philosophy of Grounding: Translations and Studies*. New York: Oxford University Press.

Table of Contents: Acknowledgements IX; List of Tables and Figures XI; List of Contributors XIII; Part I: Stefan Roski, Benjamin Schnieder: Introduction 3; 1. Preamble; 2. A Survey of Bolzano's Theory of Grounding 4; 3. On the Contents of This Volume 35; Part II: Bolzano's Writings on Grounding (in English Translations); 4. Early Period: Scientific Method and the Foundations of Mathematics 45; 5. Middle Period: Theology and Metaphysics 85; 6. Mature Period: A Theory of Grounding 107; Part III: Research Papers on Bolzano's Theory; 7. Mark Malink: Aristotle and Bolzano on Grounding 221; 8. Kevin Mulligan: Logic, Logical Norms, and (Normative) Grounding 244, 9. Kit Fine:Some Remarks on Bolzano on Ground 276; 10. Mark Textor: Grounding, Simplicity, and Repetition 301; 11. Francesca Poggiolesi: Bolzano, (the Appropriate) Relevant Logic, and Grounding Rules for Implication 319; 12. Edgar Morscher: The Grounds of Moral 'Truths' 343; 13. Paul Rusnock: Grounding in Practice: Bolzano's *Purely Analytic Proof* in Light of the Contributions 364; 14. Marc Lange: Bolzano, the Parallelogram of Forces, and Scientific Explanation 394; 15. Benjamin Schnieder: A Fundamental Being: Bolzano's Cosmological Argument and Its Leibnizian Roots 418; Glossary of German Terms 445; Name Index 447; Subject Index 450-458.

"Premble: One of the liveliest debates in contemporary philosophy concerns the notions of grounding and metaphysical explanation. Many consider these notions to be of prime importance for metaphysics and the philosophy of explanation, or even for philosophy in general, and lament that they had been neglected for far too long. Although the current debate about grounding is of recent origin, its central ideas have a long and rich history in Western philosophy, going back at least to the works of Plato and Aristotle.(1) Bernard Bolzano's theory of grounding, developed in the first half of the nineteenth century, is a peak in the history of these ideas. On Bolzano's account, grounding lies at the heart of a broad conception of explanation encompassing both causal and non-causal cases. Not only does his theory exceed most earlier theories in scope, depth, and rigour, it also anticipates a range of ideas that take a prominent place in the contemporary debate. But despite the richness and modernity of his theory, it is known only by a comparatively small circle of philosophers predominantly consisting of Bolzano scholars.

This book is meant to make Bolzano's ideas on grounding accessible to a broader audience. The book gathers translations of Bolzano's most important writings on these issues, including material that has hitherto not been available in English. Additionally, it contains a survey article on Bolzano's conception (see Chapter 2) and nine research papers critically assessing elements of the theory and/or exploring its broad range of applications in Bolzano's philosophy and beyond (for a more detailed overview of the book's contents, see Chapter 3)." (p. 3)

1 See Raven, M. (ed.) 2020. [The Routledge Handbook of Metaphysical Grounding. Oxford and New York: Routledge], chs 1-6.

22. ———. 2022. "On the Contents of This Volume." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 35-42. New York: Oxford University Press.
"Bolzano's published works do not contain any self-standing treatise on grounding. What comes closest to this would be a part in his *Theory of Science* (WL II, §§198-222) that is exclusively dedicated to the topic of grounding. But for a full apprehension of Bolzano's views on grounding one has to take into account several other passages-scattered across the *Theory of Science*, but also across many of his other writings-in which he illuminates his ideas on grounding and/or applies them to a broad range of philosophical issues. Moreover, a complete picture of Bolzano's views should also take into account how some of his ideas significantly changed over the years. So in this book, we not only present the central
part on grounding from the *Theory of Science*, but also gather a selection of further passages on grounding, taking into accounts texts from Bolzano's entire philosophical career." (p. 35)

23. ———. 2022. "[Bolzano's Writings on Grounding] Early Period: Scientific Method and the Foundations of Mathematics." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 45-84. New York: Oxford University Press.
"This chapter contains translations of excerpts from three early texts by Bolzano (written around 1810):
- the booklet *Contributions to a Better-Grounded Presentation of Mathematics* (published 1810);
- the unpublished manuscript *Aetiology*;
- the unpublished manuscript *General Mathematics*." (p. 45)

24. ———. 2022. "[Bolzano's Writings on Grounding] Middle Period: Theology and Metaphysics." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 85-106. New York: Oxford University Press.
"This chapter contains translations of excerpts from three texts by Bolzano: the *Athanasia*, the *Treatise of the Science of Religion*, and his *Philosophical Notebooks*." (p. 85)

25. ———. 2022. "[Bolzano's Writings on Grounding] Mature Period: A Theory of Grounding." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 107-218. New York: Oxford University Press.
"This chapter contains translations of texts in which Bolzano develops and applies his mature theory of grounding. The heart of the chapter are excerpts from Bolzano's main work *Theory of Science*, where he gives the most comprehensive account of his conception of grounding and discusses the role of grounding in several philosophical areas ranging from the methodology of science, to the philosophy of causation, to metaphysics. In addition to that, the chapter includes a brief excerpt from a survey of Bolzano's *Theory of Science* and his *Theory of the Science of Religion,* in which Bolzano gives a succinct summary of central ideas of his mature theory. Finally, the chapter includes the complete translation of Bolzano's essay *What Is Philosophy?* which defends a ground-theoretical conception of philosophy." (p. 107)

26. Rumberg, Antje. 2013. "Bolzano's Concept of Grounding (*Abfolge*) Against the Background of Normal Proofs." *Review of Symbolic Logic* no. 6:424-459.
Abstract: "In this paper, I provide a thorough discussion and reconstruction of Bernard Bolzano's theory of grounding and a detailed investigation into the parallels between his concept of grounding and current notions of normal proofs. Grounding (*Abfolge*) is an objective ground-consequence relation among true propositions that is explanatory in nature. The grounding relation plays a crucial role in Bolzano's

proof-theory, and it is essential for his views on the ideal buildup of scientific theories. Occasionally, similarities have been pointed out between Bolzano's ideas on grounding and cut-free proofs in Gentzen's sequent calculus. My thesis is, however, that they bear an even stronger resemblance to the normal natural deduction proofs employed in proof-theoretic semantics in the tradition of Dummett and Prawitz."

27.   Rusnock, Paul. 2022. "Grounding in Practice. Bolzano's Purely Analytic Proof in Light of the *Contributions*." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 364-393. New York: Oxford University Press.
"Introduction
Bolzano's best-known mathematical work, the *Rein analytischer Beweis* of 1817, promises to deliver a 'purely analytic' proof of a theorem from the theory of equations.(1) He also claims that this proof is not a mere certification (*Gewissmachung*), but rather a ground-revealing proof *(Begrundung)* of this truth. In this paper I will undertake to explain and assess these claims against the background of his early account of mathematical method and the relation of grounding, with occasional reference to the later development of his thought. I begin with an overview of the C*ontributions to a Better-Grounded Presentation of Mathematics*,(2) which presents Bolzano's early views on these and related matters." (p. 364)
(1) Bolzano 1817a =RB. English translation in Russ 2004 [*The Mathematical Works of Bernard Bolzano*, edited and translated by Steve B. Russ. Oxford: Oxford University Press]
(2) Bolzano 1810 = BD; English translation in Russ 2004

28.   Sandstad, Petter. 2024. "Grounding and Aristotle's *Posterior Analytics*." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 65-81. Cham (Switzerland): Springer.
Abstract: "Abstract Fabrice Correia and Benjamin Schnieder suggest that Aristotle's account of formal causation in the *Posterior Analytics* is a type of grounding. While there are many similarities, I will argue that what Aristotle had in mind differs from contemporary standard accounts of grounding. First, I give a brief account of formal causation as presented in the *Posterior Analytics*. Second, I show that formal causation differs from grounding in at least two crucial respects. (1) Formal causation involves a priority relation between different ontological categories, namely, states of affairs and substantial forms. In allowing for transcategorial grounding, Aristotle's theory is similar to that of Jonathan Schaffer and Bernard Bolzano. (2) Formal causation is not transitive, both because there are no chains of formal causes, and because Aristotle is interested only in the full and ultimate, yet at the same time immediate, ground. There are two further differences: Aristotle does not think that a conjunction is always grounded in its conjuncts, nor that a universal quantification is always grounded in its instances. His theory is in some sense narrower than grounding, in that it allows only for full immediate grounds. In another sense it is closer to truthmaking, both in that truthmaking is transcategorial and that it does not allow for chains. However, Aristotle's formal cause should rather be seen as a "beingmaker," since truthmaking has to do with linguistic entities and truthbearers. Aristotle's formal cause thus fits well into the framework of grounding, as an immediate full ground, but fits poorly with the standard claims about grounding."

29.   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)

30. Schechtman, Anat. 2023. "Modern." In *The Routledge Handbook of Essence in Philosophy*, edited by Koslicki, Kathrin and Raven, Michael J., 41-52. New York: Routledge.

"The early modern period in the history of philosophy—roughly, from the middle of the seventeenth century to the end of the eighteenth century—was a time of dramatic shifts in philosophical positions and traditions. At the beginning of this period, the Aristotelian paradigm that shaped most medieval philosophy was still dominant. But early modern thinkers increasingly subjected it to scrutiny, criticism, and creative reinterpretation.

Naturally, discussions of essence by central figures in the period exemplify this dynamic.

My aim here is to survey some of the most important developments, highlighting the ways in which early modern thinkers gradually leave the medieval Aristotelian tradition behind.

A central theme is how differing conceptions of the scope of essence lead to differing conceptions of its theoretical roles." (p. 41)

31. ———. 2024. "Modality and Essence in Early Modern Philosophy: Descartes, Malebranche, and Locke." In *Modality: A History*, edited by Melamed, Yitzhak Y. and Newlands, Samuel, 61-84. New York: Oxford University Press.

"Philosophers in the 17th century engaged in a range of debates about modality, including its nature (what it is for something to be necessary, possible, or impossible), scope (what is necessary, possible, or impossible), and knowability (how, if at all, we can know modal facts). They also debated the explanation or ground of modality: that in virtue of which something is necessary, possible, or impossible. My interest in this essay is to explore this latter debate, and to tentatively defend two theses about it.

The first thesis is that for central philosophers in the period, a range of important modal facts are grounded in essences. That is, what explains why something is necessary, possible, or impossible is that some entities have the essences they do—where an entity's essence, as will be discussed further below, is what it is to be that entity. The second thesis is that as the 17th century progresses, we witness growing reluctance to admit that some facts are necessary, due to growing reluctance to admit that certain properties belong to essences, or even that essences exist." (pp.61-62, a note omitted)

32. Schmid, Stephan. 2024. "Two Kinds of Grounding? Suárez on Natural Resultance and Foundation." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 281-306. Cham (Switzerland): Springer.

Abstract: "In contemporary metaphysics the notion of grounding plays a crucial role, and though its precise meaning is debated, there seems to be a widespread consensus that grounding is the same in all its typical instances. In this chapter I show that the late scholastic philosopher Francisco Suárez (1549–1617) can be seen as challenging this consensus since he gives an altogether different account of the way vital capacities are "grounded" in their underlying soul and the way the truth of a thought is "grounded" in its object: while a vital capacity is something over and above the soul, from which it "naturally results," the truth of a thought is no additional entity apart from the thought and its object, in which it is "founded." So, in addition to contributing two intriguing accounts of vital capacities and truth, Suárez's theories of natural resultance and foundation make an interesting case for

the possibility that grounding might not be a single and unified form of metaphysical dependence as contemporary metaphysicians seem to presuppose."

33. Schnieder, Benjamin. 2014. "Bolzano on Causation and Grounding." *Journal of the History of Philosophy* no. 52:309-337.
"This paper is an exploration of Bolzano's views on causation, which have not been thoroughly examined yet. The paper reconstructs Bolzano's position, with a focus on his analysis of the concept of causation, on its ontological presuppositions, and on how he relates causation to his theory of grounding.(1) A comparison with standard positions from the contemporary debate on causation will prove his views to be quite original. Moreover, they are a valuable addition to the more recent debate on metaphysical grounding,(2) in which grounding is sometimes informally described as something like metaphysical causation with the exact connection of the two notions seldom being elaborated. Bolzano's theory explicitly addresses the issue and takes an innovative stance. However, it will also be revealed that his account is beset with problems. But even if his position should ultimately not be tenable, discussing it can deepen our understanding of problems raised in the current debates about causation and grounding and shed new light on them." (p. 309)
(1) The paper concentrates on general conceptual and metaphysical issues of causation. It will not discuss Bolzano's views on the epistemology of causation, nor his views on detailed matters of fact perhaps better to be treated in physics and its philosophy (such as the question of how causal powers are actually distributed in the world, what kind of basic causal powers there are, etc.).
(2) See e.g. Rosen, "Metaphysical Dependence"; Schaffer, "What Grounds"; and Fine, "Guide to Ground."
References
Fine, Kit. "Guide to Ground." In *Metaphysical Grounding*, edited by F. Correia and B. Schnieder, 37–80. Cambridge: Cambridge University Press, 2012.
Rosen, Gideon. "Metaphysical Dependence: Grounding and Reduction." In *Modality*, edited by Bob Hale and Avrid Hoffmann, 109–35. Oxford: Oxford University Press, 2010.
Schaffer, Jonathan. "On What Grounds What." In *Metametaphysics*, edited by David Chalmers et al., 347–383. Oxford: Oxford University Press, 2009.

34. ———. 2022. "A Fundamental Being. Bolzano's Cosmological Argument and Its Leibnizian Roots." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 418-443. New York: Oxford University Press.
"Bernard Bolzano believed he can offer an a priori proof of the existence of a fundamental entity, relying on his conception of grounding. It seems fair to say that the argument is a philosophical gem, whether or not one endorses it in its entirety (no vulgar suspense: I will argue we should not follow in Bolzano's footsteps here). Since the conception of grounding Bolzano works with is, moreover, remarkably modern in spirit, his argument can be treated and discussed like a contribution to the contemporary debate about grounding and fundamentality. This paper will reconstruct Bolzano's reasoning, explain its historical context, and put his argument under scrutiny." (p. 418)

35. 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: Routlege.
"5 Conclusion
We think that there are different, legitimate definitions of concepts that can go by the name of existential dependence, suited for different theoretical purposes. But we also argued that a definition in terms of grounding or metaphysical explanation, the basic idea of which can be traced back to Aristotle's *Categories* (Section 1), is particularly interesting for ontological inquiries: it yields a notion of dependence which is the converse of productive priority, so that if an entity depends on another, the latter helps bring about the existence of the dependent entity (Section 2).

We discussed the role that conceptual explanations play for such a notion of dependence, and in metaphysics more generally (Section 3). And we defended the definition of dependence in terms of grounding from some recent criticisms (Section 4). We hope to have thereby shown that the definition yields a theoretically fruitful concept that deserves to be in the standard toolkit of ontology." (p. 172)

36. Shatalov, Keren Wilson. 2024. "Aristotle on Non-Substantial Particulars, Fundamentality, and Change." *Archiv für Geschichte der Philosophie*:1-31.
Abstract: "There is a debate about whether particular properties are for Aristotle non-recurrent and trope-like individuals or recurrent universals. I argue that *Physics* I.7 provides evidence that he took non-substantial particulars to be neither; they are instead non-recurrent modes. *Physics* I.7 also helps show why this matters. Particular properties must be individual modes in order for Aristotle to preserve three key philosophical commitments: that objects of ordinary experience are primary substances, that primary substances undergo genuine change, and that primary substances are ontologically fundamental."

37. Silverman, Allan. 2013. "Grounding, Analogy, and Aristotle's Critique of Plato's Idea of the Good." In *Aristotle on Method and Metaphysics*, edited by Feser, Edward, 102-120. New York: Palgrave Macmillan.
"In what follows, I want to examine some ways in which Schaffer, Fine and Aristotle think about grounding and dependence. In Section 1, I will focus on some problems arising from the manner in which the contemporary metaphysicians characterize their notion of ground. In Section 2, I will explore Aristotle's ideas of focal meaning and especially analogy, as developed in remarks on *energeia* in *Metaphysics Thet*a and his criticism of Plato's Idea of the Good in *Nicomachean Ethics* I.6, in the hope that they may help us understand how to think about the relation between ground and the various grounding relations." (pp. 102-103)

38. Sirkel, Riin. 2018. "Essence and Cause: Making Something Be What It Is." *Discipline Filosofiche* no. 28:89-112.
Abstract: "Aristotle frequently describes essence as a "cause" or "explanation" (αἴτιον or αἰτία), thus ascribing to essence some sort of causal or explanatory role. This explanatory role is often explicated by scholars in terms of essence "making the thing be what it is" or "making it the very thing that it is". I argue that this is problematic, at least on the assumption that "making" expresses an explanatory relation, since it violates certain formal features of explanation (especially the requirement that the explanans be distinct from the explanandum). I then consider whether Aristotle is vulnerable to this problem by examining the explanatory role of essence in *Posterior Analytics* and *Metaphysics* Z 17."

39. ———. 2024. "Ontological Priority and Grounding in Aristotle's *Categories*." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 33-63. Cham (Switzerland): Springer.
Abstract: "In the *Categorie*s, Aristotle intends to ascribe to particular substances ontological priority over all other things, but it is far from obvious what notion of priority would make this plausible. This question is the focus of my paper. I will examine what has been the standard account of his notion of ontological priority—the "modal-existential" account—and the problems it entails, as well as some scholarly alternatives to it. I will defend my own alternative account—the "explanatory-existential" account—which addresses the problems that arise for other proposed accounts, and will make plausible Aristotle's claim that particular substances have priority over all other things. I will argue that he puts forth this notion of priority in *Categories* 12, and that it bears a similarity to the notion of grounding as discussed in contemporary metaphysics."

40. Stang, Nicholas F. 2019. "A Guide to Ground in Kant's *Lectures on Metaphysics*." In *Kant's "Lectures on Metaphysics": A Critical Guide*, edited by Fugate, Courtney D., 74-101. Cambridge: Cambridge University Press.
"The Principle of Sufficient Reason (PSR) says that everything has a reason that fully explains it. Leibniz expresses the PSR in Latin and French, respectively, as the

principle that everything has a ratio or raison. When German philosophers of the eighteenth century, heavily influenced by the Leibnizian writings available to them, formulated similar ideas in their native tongue, they translated ratio as Grund and expressed the PSR accordingly as: Everything has a ground that fully explains it. This Principle of Sufficient Ground (*Satz des zureichenden Grundes*) or PSG is, so to speak, the Leibnizian PSR translated into German."

(...)

"It comes as no surprise then that Kant, steeped as he was in German rationalism and its debates, would extensively discuss the PSG and the notion of ground (*Grund*) in the metaphysics lectures he gave virtually every semester at the University of Konigsberg from 1755 until his retirement from teaching in 1796.(1)"

(...)

"While scholars have extensively discussed Kant's treatment of the PSG in the Antinomies chapter of the *Critique of Pure Reason*,(2) and, more recently, his relation to German rationalist debates about it,(3) relatively little has been said about the exact notion of ground that figures in the PSG. My aim in this chapter is to explain Kant's discussion of ground in the lectures and to relate it, where appropriate, to his published discussions of ground." (pp. 74-75)

(1) For an overview of Kant's lecture activity see Karl Ameriks's and Steve Naragon's Introduction to (Kant 1997) and the website maintained by Naragon: https://users.manchester.edu/FacStaff/SSNaragon/Kant/.

(3) E.g., Hogan (2010), Fugate (2014a).

References

Kant, Immanuel. 1997. *Lectures on Metaphysics*. Edited by Karl Ameriks and Steve Naragon. Cambridge Edition of the Works of Immanuel Kant. Cambridge: Cambridge University Press.

Fugate, Courtney D. 2014a. "Alexander Baumgarten on the principle of sufficient reason." *Philosophica - Revista Do Departamento de Filosofia da Faculdade de Letras de Lisboa*, 44: 127-47.

Hogan, Desmond. 2010. "Kant's Copernican Turn and the Rationalist Tradition." In: Guyer, Paul (ed.) *The Cambridge Companion to Kant's Critique of Pure Reason*. Cambridge: Cambridge University Press.

41.	———. 2024. "Modality in Kant and Hegel." In *Modality: A History*, edited by Melamed, Yitzhak Y. and Newlands, Samuel, 171-206. New York: Oxford University Press.

"Kant and Hegel differ from all these traditional and contemporary views, and from one another, concerning the unity of modality.

According to Kant, modal concepts (categories, as we will see) do not describe properties of objects, but instead express the relation of concepts of objects to our capacities for cognition. The role of the modal categories is to express the relation of a concept of an object to the matter and form of our cognitive capacities: possibility applies to concepts that agree with the form of the relevant cognitive capacity; actuality applies to concepts that agree with the matter of the capacity; and necessity applies to concepts that follow from the matter of the capacity given its form. Since our capacity for cognition has two "stems," sensibility and understanding, this generates a distinction between two kinds of modality: logical modality, which expresses the relation of a concept to the form and matter of the understanding alone, and real modality, which expresses the relation of a concept to the form and matter of understanding and sensibility. What unifies the modal concepts— what makes each of the modal categories *modal*— is that they all express a manner of relating to our cognitive capacities." (pp. 172-173)

42.	Steigerwald, Joan. 2015. "Ground and Grounding: The Nature of Things in Schelling's Philosophy." *Symposium* no. 19:176-197.

Abstract: This paper examines the notions of ground and grounding across several of Schelling's works, from the philosophy of nature, through transcendental idealism and identity philosophy, to the Freedom essay and The Ages of the World. It contends that Schelling repeatedly returns to the same problematic, that each

attempt to establish a foundation for philosophy is inscribed with the particular and the concrete, so that the work of grounding is also an ungrounding.

It reads the different expressions of Schelling's philosophy against and through one another, arguing that each offers both a foundation and critique of its others."

43. Stern, Robert. 2016. "Kreines on the Problem of Metaphysics in Kant and Hegel." *Hegel Bulletin*:1-15.

Abstract: "This article offers a discussion of James Kreines's book *Reason in the World: Hegel's Metaphysics and Its Philosophical Appeal*. While broadly sympathetic to Kreines's 'concept thesis' as a conceptual realist account of Hegel, the article contrasts two Kantian arguments for transcendental idealism to which Hegel's position may be seen as a response—the argument from synthetic a priori knowledge and the argument from the dialectic of reason—and explores the implications of Kreines's commitment to the latter over the former."

44. Stratmann, Joe. 2018. "Kant, Grounding, and Things in Themselves." *Philosophers' Imprint* no. 18:1-21.

"Despite their differences, proponents of metaphysical one- and two-object interpretations alike claim that appearances are *grounded in* things in themselves. Call this claim the *transcendental grounding thesis*." (pp. 1-2)

(...)

"A significant difficulty in making sense of the transcendental grounding thesis is that it is prima facie unclear how to characterize Kant's account of grounding — an account which has yet to be systematically explored in the secondary literature. My strategy in this paper is to begin by elucidating some core features of this account. This will enable us to understand some of the conditions under which different specific kinds of grounding relations obtain. This will, in turn, help to adjudicate the issue of which specific kind of grounding relation obtains between things in themselves and appearances, as well as the dispute concerning the distinctness of things in themselves and appearances." (p. 2, a note omitted)

45. Tahko, Tuomas E. 2013. "Metaphysics as the First Philosophy." In *Aristotle on Method and Metaphysics*, edited by Feser, Edward, 49-67. New York: Palgrave-Macmillan.

"Introduction: Aristotle talks about "the first philosophy" throughout *Metaphysics* – and it is metaphysics that Aristotle considers to be the first philosophy – but he never makes it entirely clear what first philosophy consists of. What he does make clear is that the first philosophy is not to be understood as a collection of topics that should be studied in advance of any other topics.

In fact, Aristotle seems to have thought that the topics of *Metaphysics* are to be studied after those in *Physics* (Cohen 2009). In what sense could metaphysics be the first philosophy? Let me take the liberty of applying the technical jargon of contemporary metaphysics to answer: The first philosophy is an account of what is, or what it means to be, *fundamental.*

Things that are the most fundamental are not *grounded* in anything more fundamental, they are *ontologically independent*. This does not necessarily mean that first philosophy attempts to list the most fundamental things, although this could be a part of the discipline. Rather, the study of fundamentality focuses on giving an account of what it is for something to be fundamental. So, first philosophy studies a certain type of being – the fundamental type, and it may also involve an account of which (kind of)

things are, or could be, fundamental." (p. 49)

46. Tatzel, Armin. 2002. "Bolzano's Theory of Ground and Consequence." *Notre Dame Journal of Formal Logic* no. 43:1-25.

"The aim of the paper is to present and evaluate Bolzano's theory of grounding, that is, his theory of the concept expressed and the relation brought into play by 'because'. In the first part of the paper (Sections 1-4) the concept of grounding is distinguished from and related to three other concepts: the concept of an epistemic reason}, the concept of causality, and the concept of deducibility (i.e., logical

consequence). In its second part (Sections 5-7) Bolzano's positive account of grounding is reconstructed in axiomatic form and critically discussed."

47.   ———. 2003. "Bolzano on Grounding." In *The Logica Yearbook 2002*, edited by Childers, Timothy and Majer, Ondrej, 245-258. Prague: Filosofia.

48.   Textor, Mark. 2022. "Grounding, Simplicity, and Repetition." In *Bolzano's Philosophy of Grounding: Translations and Studies*, edited by Roski, Stefan and Schnieder, Benjamin, 301-318. New York: Oxford University Press.
"The relata of the grounding relation are true propositions (*Sätze an sich*). Let's start therefore by getting clear about those properties of propositions that are of importance for the theory of grounding.
The notion of a proposition cannot be defined, but Bolzano gives his readers pointers towards the intended concept. For example, take a non-indexical sentence like '2 + 2 = 4'. Its meaning is a proposition: something which is either true or false and never neither.(2) Not all sentences will express a proposition or express a proposition fully, but some do and this will, one hopes, suffice for Bolzano's purposes." (p. 301, a note omitted)
(2) *ML*, 47 [*MM-EX*, 40-1].
References
Bolzano, B. 1975. 'Von der mathematischen Lehrart'. In BGA [*Bolzano Gesamtausgabe*] IIA.7, pp. 46-98. [*ML*].
Translation in *On the Mathematical Method and Correspondence with Exner* by Rolf George and Paul Rusnock, Amsterdam/New York: Rodopi, 2004, pp. 39-83. [*MM-EX*]

49.   Thom, Paul. 2024. "Ground in Avicenna's Logic." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 83-102. Cham (Switzerland): Springer.
Abstract: "Kit Fine articulates a notion of ground as a type of explanation by metaphysical constitution—a notion that happens to fit Avicenna's conception of essence fairly closely. Fine sets out from ideas that are basic to the Aristotelian tradition of which Avicenna was a part. However, despite the common Aristotelian heritage, there are also points in the further development of the notion of ground where Fine and Avicenna make different, and opposed, theoretical choices. Underlying these choices are the two thinkers' different conceptions of logic."

50.   Thomas, Christine J. 2014. "Plato on Metaphysical Explanation: Does 'Participating' Mean Nothing?" *Studia Philosophica Estonica* no. 7:168-194.
Contents: Riin Sirkel, Tuomas E. Tahko, Editorial 1; Justin Zylstra: Dependence and Fundamentality 5; Margaret Cameron: Is Ground Said-in-Many-Ways? 29; Pablo Carnino: On the Reduction of Grounding to Essence 56; Ryan Christensen: Essence, Essence, and Essence 72; Lucas Angioni: Aristotle on Necessary Principles and on Explaining X Trough the Essence of X 88; Kathrin Koslicki: The Causal Priority of Form in Aristotle 113; Michail Peramatzis: Sameness, Definition, and Essence 142; Christine J. Thomas: Plato on Metaphysical Explanation: Does 'Participating' Mean Nothing? 168; Travis Dumsday: E.J. Lowe on the Unity Problem 195-218.

51.   van den Berg, Hein. 2014. *Kant on Proper Science: Biology in the Critical Philosophy and the Opus postumum*. Dordrecht: Springer.
Chapter 2: *Kant's Conception of Proper Science*, pp. 15-52.

52.   Viltanioti, Irini–Fotini. 2012. "Powers as the Fundamental Entities in Philolaus' Ontology." *Journal of Ancient Philosophy* no. 6:1-31.
Abstract: "The main claim of this paper is that powers are the fundamental entities in Philolaus' ontology.
Limiters (περαίνοντα) and unlimiteds (ἄπειρα) are to be respectively understood as the power to limit and the power to be limited. As powers to do something, limiters and unlimiteds are different from their individual bearers, namely the "things that are" (ἐόντα). Number or harmony, that is the power to fit together, makes, along with the basic powers to limit and to be limited, things what they are. Philolaus'

φύσις should be understood as the outcome of the working of the three other powers, namely περαίνοντα, ἄπειρα and ἁρμονία coming together and coming to be realized (ἁρμόχθη). In other words, φύσις is the state that results from the realization of the three fundamental powers. Philolaus' ἐόντα are to be considered as coming out of the four primary powers and of what Philolaus refers to as ἐστώ. Thus, Philolaus appears to be one of the first power structuralists."

53.   Vucu, Simona. 2024. "Thomas Aquinas, Henry of Ghent, and John Duns Scotus on the Causation of Proper and Inseparable Accidents." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 147-176. Cham (Switzerland): Springer.
Abstract: "Medieval philosophers such as Henry of Ghent and John Duns Scotus defended the possibility of what I call self-agency, the view that substances bring about in themselves their own necessary and inseparable features. In this paper, I propose that self-agency should be understood as an attempt to clarify the relationship between what is necessary but still accidental, and what is essential. I explore this view in the context of two objections against the possibility of self-agency: a general one, according to which the relationship between what is essential and what is necessary (but accidental) should not be envisaged in causal terms; and a more specific one, namely, that there is no need to consider this relationship to be a case of efficient causation. Against the first objection, I show that in the thirteenth century medieval philosophers envisaged this relationship in causal terms because of the way they conceived the ontological status of accidents. Against the second objection, I show that while Henry admits the possibility of self-agency as a consequence of his view of the nature of causal powers, Scotus thinks that without self-agency one cannot account for why proper and inseparable accidents are necessarily related to their subject of inherence."

54.   Wang, Jennifer. 2016. "Fundamentality and Modal Freedom." *Philosophical Perspectives* no. 30:397-418.
"The claim that fundamentality entails modal freedom (FEMF) may seem attractive. After all, if an entity 'need not look outside itself', how could it modally depend on anything else? Nonetheless, the road from fundamentality to modal freedom is not straightforward." (p. 397)
(...)
"My aim is not to assess these competing views, about which much has been written. Rather, I will examine the positive reasons that a defender of FEMF may give in favor of her thesis. I begin the next section by saying more about the notion of fundamentality and the relevant types of fundamental entities. In section 3, I give a more careful characterization of modal freedom. I then examine reasons to believe FEMF by way of 'direct' and 'indirect' routes in sections 4 and 5. Direct routes appeal to the supposed nature of fundamentality, whereas indirect routes make use of principles that appear to be motivated for independent reasons, such as Hume's dictum that there are no necessary connections between distinct existences. I argue that none of these routes provide motivation for FEMF beyond the intuitions that fundamental entities are 'self-sufficient' or 'need not look outside themselves'. In fact, as I will suggest in section 6, there are positive reasons to hold that the fundamental entities are not modally free." (pp. 397-398)

55.   Ward, Thomas M. 2024. "The Incoherence of Ockham's Ethics." In *Grounding in Medieval Philosophy*, edited by Normore, Calvin G. and Schmid, Stephan, 225-237. Cham (Switzerland): Springer.
Abstract: "Ockham thinks that God can command creatures to hate him. He also thinks that it is right to obey any divine command. This paper investigates what it is, for Ockham, to obey divine commands, and what makes it right to do so. The most plausible explanations of what makes it right to obey divine commands are God's goodness and God's power. The textual evidence in Ockham points towards both, but I judge the preponderance of the evidence to lean in favour of grounding our obligations to obey God on God's goodness. But whichever of the two we pick, we

end up with an incoherent view. Given some things Ockham says, it should not be possible for Ockham's God to make it right to hate God, yet Ockham also says that this is possible. I see no way to rescue Ockham's ethics from incoherence."

56.　Watkins, Eric. 2021. "What real progress has metaphysics made since the time of Kant? Kant and the metaphysics of grounding." *Synthese* no. 198:3213–3229.
Abstract: "This paper argues that, despite appearances to the contrary, Kant and contemporary analytic metaphysicians are interested in the same kind of metaphysical dependence relation that finds application in a range of contexts and that is today commonly referred to as grounding. It also argues that comparing and contrasting Kant's and contemporary metaphysicians' accounts of this relation proves useful for both Kant scholarship and for contemporary metaphysics. The analyses provided by contemporary metaphysicians can be used to shed light on Kant's understanding of what a real conditioning relation is, while Kant's perspective on the practice and goals of metaphysics sheds light on several claims and issues at home in the contemporary debate."

57.　Williams, Heath, and Byrne, Thomas. 2022. "Husserl's Theory of Scientific Explanation: A Bolzanian Inspired Unificationist Account " *Husserl Studies* no. 38:171-196.
Abstract: "Husserl's early picture of explanation in the sciences has never been completely provided. This lack represents an oversight, which we here redress. In contrast to currently accepted interpretations, we demonstrate that Husserl does not adhere to
the much maligned deductive-nomological (DN) model of scientific explanation. Instead, via a close reading of early Husserlian texts, we reveal that he presents a unificationist account of scientific explanation. By doing so, we disclose that Husserl's philosophy of scientific explanation is no mere anachronism. It is, instead, tenable and relevant. We discuss how Husserl and other contemporary thinkers draw theoretical inspiration from the same source—namely, Bernard Bolzano. Husserl's theory of scientific explanation shares a common language and discusses the same themes as, for example, Phillip Kitcher and Kit Fine. To advance our novel reading, we discuss Husserl's investigations of grounding, inter-lawful explanation, intramathematical explanation, and scientific unification."

58.　Yrjönsuuri, Mikko. 2024. "Valid on Formal Grounds." In *Grounding in Medieval Philosophy,* edited by Normore, Calvin G. and Schmid, Stephan, 251-280. Cham (Switzerland): Springer.
Abstract: "Could formal logic be a naturalist field of study? This paper analyses how medieval logicians committed to Aristotelian naturalism thought about the metaphysical grounding of logic. As they assumed, it is at least sometimes a fact that a conclusion follows from some premises; here it is questioned how they thought this fact, or logical validity, to be grounded. The early medieval Arabic tradition (e.g. Ibn Sinā) thought in a way comparable to Immanuel Kant's position that logic is a formal study of intellectual structures, but given their metaphysical realism concerning universals, such intellectual structures may be taken to be natural parts of Aristotelian metaphysics. On the other hand, the early medieval Latin tradition (e.g. Abelard) thought in a way comparable to Bernard Bolzano that the subject matter logic studies is not the intellectual realm, but essentially linguistic facts, taking language to be a natural phenomenon. Robert Kilwardby endeavoured to combine these traditions, but turns out to have taken a stance much closer to Kant, and to have given little importance to linguistic facts in his account of how syllogistic validity and thereby validity in general is grounded. At the same time, Kilwardby's work enhanced the conception of the formality of logic, although he thought that only the syllogistic form is a properly logical form. Analysis of John Buridan's logic shows that he had a generalized conception of logical form that was tightly knit with linguistic form as it is found in mental language, which he took to be a metaphysically natural domain. Unlike Kant and Bolzano, both Kilwardby and Buridan can be viewed as naturalists as concerns the study of formal logic,

inasmuch as they thought that logical validity is grounded in facts that their Aristotelian metaphysics would consider natural."