

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

## Annotated bibliography on the history of fundamentality and grounding

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## Bibliography

1. Amijee, Fatema. 2020. "Principle of Sufficient Reason." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 63-75. New York: Routledge.  
 "According to the Principle of Sufficient Reason (henceforth 'PSR'), everything has an explanation or sufficient reason. The PSR was a central tenet of rationalist metaphysics but has since gone out of vogue.  
 (...)
   
 But lately, interest in the PSR has been enjoying a resurgence. This has been due, at least in part, to the recent interest in grounding, and relatedly, metaphysical explanation. If the notions of ground and metaphysical explanation are in good standing, then we can formulate a version of the PSR on which 'explanation' picks out either ground or metaphysical explanation. Since this chapter figures in a volume on grounding, I will focus on the version of the PSR that says that every fact has a ground. My primary goal is to address three questions. First, how continuous is the contemporary notion of grounding with the notion of sufficient reason endorsed by Spinoza, Leibniz, and other rationalists? In particular, does a PSR formulated in terms of ground retain the intuitive pull and power of the PSR endorsed by the rationalists? Second, to what extent can the PSR avoid the formidable traditional objections levelled against it if it is formulated in terms of ground? And finally, how might historical discussion of the PSR shed light on the contemporary notion of grounding?" (p. 63)
2. Angioni, Lucas. 2014. "Aristotle on Necessary Principles and on Explaining X Through the Essence of X." *Studia Philosophica Estonica* no. 7:88-112.  
 Abstract: "I discuss what Aristotle means when he says that scientific demonstration must proceed from necessary principles. I argue that, for Aristotle, scientific demonstration should not be reduced to sound deduction with necessary premises. Scientific demonstration ultimately depends on the fully appropriate explanatory factor for a given explanandum. This explanatory factor is what makes the explanandum what it is. Consequently, this factor is also unique. When Aristotle says that demonstration must proceed from necessary principles, he means that each demonstration requires the principle that is the necessary one for the fully appropriate explanation of its explanandum. This picture also provides a key to

- understand Aristotle's thesis that scientific explanation depends on essences: it is the essence of the attribute to be explained (rather than the essence of the subject-term within the explanandum) that should be stated as the fully appropriate explanatory factor."
3. Betti, Arianna. 2010. "Explanation in Metaphysics and Bolzano's Theory of Ground and Consequence." *Logique et Analyse* no. 56:281-316.  
Abstract: "In (2006a, 2006b), Benjamin Schnieder criticizes truthmaking as a relation between entities in the world and the truths those entities 'make true'. In (2006b), his criticism exploits a notion of conceptual explanation that is very similar to Bolzano's grounding. In the first part of this paper, I offer an analysis of Bolzano's grounding. I discuss some open problems and argue that Bolzano's grounding is not a systematization of the ordinary notion of 'because' as others have maintained, but of the technical notion of explanatory proof in the context of an axiomatic conception of (proper) science. On the basis of this analysis, in the second part, I offer a critical discussion of Schnieder 2006b's arguments against truthmaking. I conclude that the latter are not very effective from a methodological point of view and that Bolzano's original position fares better in this respect; still, truthmaker theorists will be able to defend truthmaking only at a high price."  
References  
Schnieder, B. (2006a). Troubles with Truth-making: Necessitation and Projection. *Erkenntnis* 64: 61-74.  
Schnieder, B. (2006b). Truth-Making without Truth-Makers. *Synthese* 152: 21-6.
  4. Cameron, Margaret. 2014. "Is Ground Said-in-Many-Ways?" *Studia Philosophica Estonica* no. 7:29-53.  
Abstract: "Proponents of ground, which is used to indicate relations of ontological fundamentality, insist that ground is a unified phenomenon, but this thesis has recently been criticized. I will first review the proponents' claims for ground's unicity, as well as the criticisms that ground is too heterogeneous to do the philosophical work it is supposed to do. By drawing on Aristotle's notion of homonymy, I explore whether ground's metaphysical heterogeneity can be theoretically accommodated while at the same time preserving its proponents' desideratum that it be a unified phenomenon."
  5. ———. 2020. "Medieval and Early Modern." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 49-62. New York: Routledge.  
"To be sure, medieval, Renaissance, and early modern philosophers did not have at their disposal the theoretical terminology afforded by the recent grounding literature, including the very term "ground" as it is currently used. It is, however, well known that ground has its roots in, broadly speaking, the Aristotelian metaphysical tradition. Given the fact that Aristotle's philosophy, and specifically his metaphysics, provided the foundation for the subject during most of this time, it should come as no surprise that we find philosophers engaging in many of the same debates and discussions regarding questions of fundamentality, ontological priority, metaphysical explanation, and dependence relations." (p. 49)
  6. Caputo, John D. 1970. "Being, ground and play in Heidegger." *Man and World* no. 3:26-48.  
"By the summer of 1935 what was intimated in the earlier discussion of finitude and the Nothing is made explicit. At this time the treatment of ground takes the form of what Heidegger calls the "ground-question" (*Grund-frage*) of metaphysics: why is there any being at all and not rather nothing? This well-known question of Leibniz, mentioned in passing in *The Essence of Ground* and *What is Metaphysics?*, is transitional to the later Heidegger. It inquires into the being and asks about its ground. Why are there any beings at all? Obviously no being can serve as the answer to the question. The ground which the question seeks is Being itself. Being sustains the being and prevents its falling back into the abyss of Nothingness.

The ground that is sought after is sought for as the ground for the decision for being rather than for nothingness.

Being is the inner power of the being by which it is. Being is the perduring power which remains whatever fluctuations may occur within beings.

Being is the emergent power, stepping forth into the light of itself. Being as ground therefore is physis: the emergent-enduring-power (*aufgehend-verweilend--Walten*)."  
(p. 30, notes omitted)

7. Casati, Filippo. 2018. "Heidegger's *Grund*: (Para-)Foundationalism." In *Reality and its Structure: Essays in Fundamentality*, edited by Bliss, Ricki Leigh and Priest, Graham, 291-312. New York: Oxford University Press.  
"This paper presents two new grounding theories (called para-foundationalism 1.0 and para-foundationalism 2.0) that, in virtue of their being inconsistent (but not trivial) theories, do not fit in the taxonomy presented by Bliss and Priest.[\*] In order to do so, we will develop some metaphysical ideas proposed by Martin Heidegger. Consistently with a vast part of the current literature, he thought that all things have whatever form of being they have because they depend on other things. In particular, he believed that every thing is because every thing depends on being. Heidegger's being is the ground [*Grund*] of literally everything because being is what makes any entity an entity. Chairs, stars, dreams, and the world are in virtue of being.  
In Section 2, we introduce Heidegger's concept of ground by distinguishing between an ontic ground and an ontological ground. In Section 3, we focus our attention on the ontological ground. We present Heidegger's idea according to which being is the ground of every entity and being is itself ungrounded. We also discuss its relation with the Principle of Sufficient Reasons (PSR), and we describe its structural properties. Finally, we show that these structural properties are the same ones that characterize a particularly strong form of foundationalism. In Section 4 and Section 5, we show how Heidegger's characterization of being leads to a contradiction, according to which being both is and is not an entity. After that, assuming that such a contradiction is a dialetheia (namely a true contradiction), we show how Heidegger's foundationalism should be revised in order to do justice to the antinomic nature of being itself. Thus, we introduce two forms of para-foundationalism, which is an inconsistent version of foundationalism. In Section 6, using para-foundationalism, we try to give an interpretation of one of the most obscure concepts of the so-called late Heidegger, namely the last God. Finally, in the Appendix, we propose two formal models that show how, working in a paraconsistent setting, para-foundationalism does not lead to logical triviality." (p. 292, notes omitted)  
[\*] Ricki Bliss and Graham Priest, *The Geography of Fundamentality: An Overview*, (Introduction to the volume, pp. 1-33).
8. Centrone, Stefania. 2016. "Early Bolzano on *Ground-Consequence* Proofs." *The Bulletin of Symbolic Logic* no. 2:215-237.  
Abstract: "In his early *Contributions to a Better-Grounded Presentation of Mathematics* (1810) Bernard Bolzano tries to characterize rigorous proofs (*strenge Beweise*). Rigorous is, *prima facie*, any proof that indicates the grounds for its conclusion. Bolzano lists a number of methodological constraints all rigorous proofs should comply with, and tests them systematically against a specific collection of elementary inference schemata that, according to him, are evidently of ground-consequence-kind. This paper intends to give a detailed and critical account of the fragmentary logic of the *Contributions*, and to point out as well some difficulties Bolzano's attempt runs into, notably as to his methodological ban on 'kind crossing'."
9. Chignell, Andrew. 2012. "Kant, Real Possibility, and the Threat of Spinoza." *Mind* no. 121:635-675.  
Abstract: "In the first part of the paper I reconstruct Kant's proof of the existence of a 'most real being' while also highlighting the theory of modality that motivates

Kant's departure from Leibniz's version of the proof. I go on to argue that it is precisely this departure that makes the being that falls out of the pre-critical proof look more like Spinoza's extended *natura naturans* than an independent, personal creator-God. In the critical period, Kant seems to think that transcendental idealism allows him to avoid this conclusion, but in the last section of the paper I argue that there is still one important version of the Spinozistic threat that remains."

"The final part of our story, however—the part which Kant did not seem to notice—is that the threat of Spinozism returns when we consider how the real harmony of non-fundamental or derivative predicates (with one another, and with the fundamental predicates) is grounded. It is unclear in light of his own argument how Kant could avoid appealing to God as the ground of this harmony, and it would seem that God could only do that by actually exemplifying all possible predicates—fundamental and derivative—as modes of an infinite array of explanatorily distinct divine furcations or attributes. With respect to this second Spinozistic threat, transcendental idealism is impotent." (p. 37)

10. Corkum, Phil. 2013. "Substance and Independence in Aristotle." In *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence*, edited by Hoeltje, Miguel, Schnieder, Benjamin and Steinberg, Alex, 65-95. Munich: Philosophia Verlag.

"Individual substances are the ground of Aristotle's ontology. Taking a liberal approach to existence, Aristotle accepts among existents entities in such categories other than substance as quality, quantity and relation; and, within each category, individuals and universals. As I will argue, individual substances are ontologically independent from all these other entities, while all other entities are ontologically dependent on individual substances. The association of substance with independence has a long history and several contemporary metaphysicians have pursued the connection. (1) In this chapter, I will discuss the intersection of these notions of substance and ontological dependence in Aristotle." (p. 65)

(1) See, for example, Hoffman and Rosenkrantz 1991, Lowe 2005, Gorman 2006 and Schnieder 2006. For discussion, see Koslicki forthcoming.

References

Feser, E. (ed.) forthcoming [2013] : *Aristotle on Method and Metaphysics*.

Basingstoke: Palgrave Macmillan.

Hoffman, J. and G. Rosenkrantz 1991: 'The Independence Criterion of Substance'. *Philosophy and Phenomenological Research* 51, pp. 835-53.

Lowe E. J. 2005: 'Ontological Dependence'. In Zalta, E. N. (ed.): *The Stanford Encyclopedia of Philosophy*, Summer 2005 ed. URL:

<https://plato.stanford.edu/archives/sum2005/entries/dependence-ontological/> "Ontological dependence".

Gorman, M. 2006: 'Independence and Substance'. *International Philosophical Quarterly* 46, pp. 147-59.

Koslicki, K. forthcoming [2013]: 'Substance, Independence and Unity'. In Feser forthcoming. [pp. 169-195]

Schnieder, B. 2006: 'A Certain Kind of Trinity: Dependence, Substance, Explanation'. *Philosophical Studies* 129, pp. 393-419.

11. ———. 2016. "Ontological Dependence and Grounding in Aristotle." In *Oxford Handbooks Online in Philosophy*, 1-14.

Abstract: "The relation of ontological dependence or grounding, expressed by the terminology of separation and priority in substance, plays a central role in Aristotle's *Categories*, *Metaphysics*, *De Anima* and elsewhere.

The article discusses three current interpretations of this terminology. These are drawn along the lines of, respectively, modal-existential ontological dependence, essential ontological dependence, and grounding or metaphysical explanation. I provide an opinionated introduction to the topic, raising the main interpretative questions, laying out a few of the exegetical and philosophical options that influence one's reading, and locating questions of Aristotle scholarship within the discussion of ontological dependence and grounding in contemporary metaphysics."

12. ———. 2020. "Ancient." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 20-32. New York: Routledge.  
 "Is there grounding in ancient philosophy? To ask a related but different question: Is grounding a useful tool for the scholar of ancient philosophy? These questions are difficult, and my goal in this chapter is not so much to give definitive answers as to clarify the questions. I hope to direct the student of contemporary metaphysics towards passages where it may be fruitful to look for historical precedent. But I also hope to offer the student of ancient philosophy some guidance on when drawing on the contemporary discussion of grounding may be beneficial." (p. 20)
13. Correia, Fabrice. 2004. "Husserl on Foundation." *Dialectica* no. 58:349-367.  
 Abstract: "In the third of his *Logical Investigations*, Husserl draws an important distinction between two kinds of parts: the dependent parts like the redness of a visual datum or the squareness of a given picture, and the independent parts like the head of a horse or a brick in a wall. On his view, the distinction is to be understood in terms of a more fundamental notion, the notion of foundation. This paper is an attempt at clarifying that notion. Such attempts have already been undertaken (separately) by Peter Simons and Kit Fine, and the paper also contains elements of comparison of our three sets of views."  
 References  
 Fine, K. 1995, "Part–Whole", in B. Smith (ed), *The Cambridge Companion to Husserl*, Cambridge: Cambridge University Press.  
 Husserl, E. 2001, *Logical Investigations*, Vol. 2, London & New York: Routledge.  
 Simons, P. 1982, "The Formalization of Husserl's Theory of Wholes and Parts", in B. Smith(ed), *Parts and Moments. Studies in Logic and Formal Ontology*, Munich: Philosophia.
14. de Boer, Karin, and Howard, Stephen. 2019. "A Ground Completely Overgrown: Heidegger, Kant and the Problem of Metaphysics." *British Journal for the History of Philosophy* no. 27:358-377.  
 Abstract: "While we endorse Heidegger's effort to reclaim *Kant's Critique of Pure Reason* as a work concerned with the possibility of metaphysics, we hold, first, that his reading is less original than is often assumed and, second, that it unduly marginalizes the critical impetus of Kant's philosophy. This article seeks to shed new light on *Kant and the Problem of Metaphysics* and related texts by relating Heidegger's interpretation of Kant to, on the one hand, the epistemological approach represented by Cohen's *Kant's Theory of Experience* and, on the other, the metaphysical readings put forward by Heimsoeth, Wundt and others in the 1920s. On this basis, we argue that Heidegger's interpretation of Kant remains indebted to the methodological distinction between ground and grounded that informed Cohen's reading and was transferred to the problem of metaphysics by Wundt. Even if Heidegger resists a 'foundationalist' mode of this distinction, we argue that his focus on the notions of ground and grounding does not allow him to account for Kant's critique of the metaphysical tradition."
15. Della Rocca, Michael. 2012. "Violations of the Principle of Sufficient Reason (in Leibniz and Spinoza)." In *Metaphysical Grounding: Understanding the Structure of Reality*, edited by Correia, Fabrice and Schnieder, Benjamin, 139-164. Cambridge: Cambridge University Press.  
 "My central concern here – violations of the Principle of Sufficient Reason (hereafter: 'PSR') – does indeed stem from my engagement with two figures from the history of philosophy: Leibniz and Spinoza. Both of these philosophers are big fans of the Principle of Sufficient Reason, the principle according to which each thing that exists has an explanation.(1) Indeed, a strong case can be made that each of these thinkers structures his entire system around the PSR more or less successfully.(2)" (p. 139)  
 (...)  
 "But can we enter the promised land and should we? Certainly if we – like Spinoza – accept the PSR, then, given the Leibnizian arguments concerning relations, we

should enter the promised land of monism.

But can we get to the promised land without invoking something as strong as the PSR? Yes, I believe that all we need to invoke is the plausible claim that relations must be grounded. Given this relatively uncontroversial claim, it follows – as we have seen – that relations are not fully real and that the only thing that fully exists is the one world.

Of course, this relatively uncontroversial claim and the PSR itself are in need of further scrutiny before we can confidently accept the results advanced in this chapter.(17)" (p. 164)

(17) In Della Rocca forthcoming, I explore in a rationalist spirit some problems for the rationalist position developed here.

References

M. Della Rocca forthcoming [2012]: *Rationalism, idealism, monism, and beyond*, in: Eckart Förster, Yitzhak Y. Melamed (eds.), *Spinoza and German Idealism*, Cambridge: Cambridge University Press, pp. 7-26.

16. Di Bella, Stefano. 2005. "Leibniz's Theory of Conditions: A Framework for Ontological Dependence." *The Leibniz Review* no. 15:67-93.  
 Abstract: "The aim of this paper is to trace in Leibniz' s drafts the sketched outline of a conceptual framework he organized around the key concept of 'requisite'. We are faced with the project of a semi-formal theory of conditions, whose logical skeleton can have a lot of different interpretations. In particular, it is well suited to capture some crucial relations of ontological dependence. Firstly the area of 'mediate requisites' is explored - where causal and temporal relations are dealt with on the basis of a general theory of 'consequence'. Then the study of 'immediate requisites' is taken into account - a true sample of mereological inquiry, where Leibniz strives for a unitary treatment of part-whole relation, conceptual inclusion and inherence. Far from simply conflating these relations one with another and with causality, therefore, Leibniz tried to spell them out, while at the same time understanding them within a single conceptual framework."  
 "A little known episode in the later history of philosophy and logic could help us to grasp the significance of these Leibnizian ideas. I am thinking of Bolzano's theory of the 'consequence' (*Abfolge*) relation, as it is introduced in the second part of his *Wissenschaftslehre*. This notion is not a purely logical one, insofar as it is distinguished from that of 'deducibility' (*Ableitbarkeit*, the true ancestor of our Tarskian consequence), and properly holds only for true propositions. It aims at capturing the old Aristotelian distinction between explanations '*tau oti*' (that) and '*tau dioti*' (why), hence it is an objective asymmetrical relation of 'grounding' between 'propositions in themselves' (*an sich*), in Bolzano's jargon. It is accurately distinguished from epistemical inference, but also from the notion of 'cause' (*Ursache*), that is a further specification of that relation in the sense of a 'real ground': "An object A is the cause of another B, whenever the proposition 'A does exist' contains the reason for the proposition 'B does exist' ." (21)" (p. 73)  
 (21) Bernard Bolzano, *Wissenschaftslehre*, III § 379, p. 497.
17. di Poppa, Francesca. 2013. "Spinoza on Causation and Power." *The Southern Journal of Philosophy* no. 51:297-319.  
 Abstract: "The purpose of this paper is to argue that, for Spinoza, causation is a more fundamental relation than conceptual connection, and that, in fact, it explains conceptual connection. I will firstly offer a criticism of Michael Della Rocca's 2008 claims that, for Spinoza, causal relations are identical to relations of conceptual dependence and that existence is identical to conceivability. Secondly, I will argue that, for Spinoza, causation is more fundamental than conceptual dependence, offering textual evidence from both *Treatise on the Emendation of the Intellect* and *Ethics*.  
 In particular, I will offer an interpretation of the attributes as first and foremost causal activities, or powers: this interpretation has the advantage to clarify the role of [definiton] 1D6 as a "genetic definition"."

## References

Michael della Rocca 2008. *Spinoza*. Nw York: Routledge.

18. Embry, Brian. 2019. "Francisco Suárez on Beings of Reason and Non-Strict Ontological Pluralism." *Philosopher's Imprint* no. 19:1-15.  
 "Suárez explains the difference between existence and objective being in terms of intrinsicity and extrinsicity: existence is an intrinsic sort of being, and objective being is an extrinsic sort of being." (p. 6)  
 (...)  
 "But how exactly are we to understand the notion of extrinsic being?" (p. 7)  
 (...)  
 "David Lewis once informally characterized the distinction as follows:  
 "In general, something has an intrinsic property solely in virtue of how that thing itself is; it has a purely extrinsic property solely in virtue of how accompanying things, and its external relations to those accompanying things, are" (Lewis 2001: 384). Here Lewis characterizes the intrinsic/extrinsic distinction in terms of the *in virtue of* relation.  
 He ultimately finds this characterization unsatisfactory because we do not have a "clear enough understanding of 'solely in virtue of'" Lewis 2001: 384).  
 However, the *in virtue of* relation has been the subject of much progress in recent metaphysics. Even critics of the *in virtue of* relation agree that we have a clear enough understanding of it (Wilson 2014, Koslicki 2015). Advocates note that we often say that certain facts obtain in virtue of others." (p. 7)  
 (...)  
 "This is not the place to argue for a particular analysis of intrinsicity, but I want to show how the notion of grounding can provide a better sense of what it could mean to say that something has extrinsic being." (p. 8)
- References  
 Lewis, David. 2001. "Redefining 'Intrinsic'." *Philosophy and Phenomenological Research* 63 (2): 381–398.  
 Koslicki, Kathrin. 2015. "The Coarse-Grainedness of Grounding." In *Oxford Studies in Metaphysics*, Vol. 9, edited by Karen Bennett and Dean W. Zimmerman, 306–341. Oxford: Oxford University Press.  
 Wilson, Jessica. 2014. "No Work for a Theory of Grounding." *Inquiry* 57 (5–6): 535–579.
19. Evans, Matthew. 2012. "Lessons from Euthyphro 10a–11b." *Oxford Studies in Ancient Philosophy* no. 42:1-38.  
 "My aim in this paper is to show that (and how) the famous argument of *Euthyphro* 10a - 11b, which I will call the *Euthyphro Argument*, can be seen to play an important role in Plato's broader anti-constructivist project. As I interpret it, this argument is best understood as an attack on the very idea that beliefs could ground facts in the way the constructivist thinks they could."  
 (...)  
 "Here is how I will proceed. First I will provide a detailed reconstruction of the argument. Then I will try to show, on the basis of this reconstruction, that the argument can withstand many (if not all) of the most powerful lines of criticism that have been (and might be) advanced against it. Finally I will offer an assessment of the argument's dialectical impact on constructivism in particular and naturalism in general. At each step along the way I hope to make it increasingly clear that this argument is more resilient than its critics have acknowledged, and that the naturalists among us must either learn its lessons or face defeat." (pp. 2-3)
20. Franks, Curtis. 2014. "Logical Completeness, Form, and Content: An Archaeology." In *Interpreting Gödel: Critical Essays*, edited by Kennedy, Juliette, 78-106. Cambridge: Cambridge University Press.  
 "Indeed, throughout his logical investigations, Bolzano's considerably more sustained focus was devoted, not to the *Ableitbarkeit* relation, but to the theory of this objectively significant consequence relation, a theory he called "Grundlehre."



Bolzano's 1810 *Beyträge* is the definitive exposition of this theory of ground and consequence." (p. 83)

(...)

"Bolzano's two theories of logical consequence are themselves not precise enough for their correspondence with one another to be subject to proof. All the same, the question is at the center of Bolzano's thought.

The procedural *Ableitbarkeit* relation provides a calculus of inference.

The ontological *Abfolge* relation is a feature of the world absolutely independent of our ability to reason about it. By establishing that these notions correspond, we would ensure that the logical structure of the world is accessible, that some line of thought could trace the dependencies of truths, that the reasons behind the complex facts of reality are discoverable and comprehensible." (p. 92)

21. Guigon, Ghislain. 2012. "Spinoza on Composition and Priority." In *Spinoza on Monism*, edited by Goff, Philip, 183-205. New York: Palgrave-Macmillan.  
 "In section 9.1 I argue that Spinoza agrees that there are many concrete things though there is only one fundamental concrete thing. In section 9.2 I argue that Spinoza's view is that the fundamental concrete thing, the extended substance, is mereologically simple. However, this interpretation of Spinoza faces two challenges that I shall explore: a puzzle about the occurrence of composition in extended reality, and a puzzle about substantial simplicity. Sections 9.3 and 9.4 provide conceptual tools that will allow me to address these two challenges in sections 9.5 and 9.6: section 9.3 introduces Spinoza's threefold distinction between kinds of composition and section 9.4 is a study of Spinoza's doctrine about *beings of reason*." (p. 184)
22. Kasabova, Anna. 2012. "Bolzano's Semantic Relation of Grounding: A Case Study." In *Inference, Consequence, and Meaning: Perspectives on Inferentialism*, edited by Gurova, Lilia, 85-103. Newcastle upon Tyne: Cambridge Scholars Publishing.  
 "Bernard Bolzano, the 19th Century mathematician and philosopher who taught at the University of Prague, worked out a semantic notion of grounding (*Abfolge*) for providing proofs with an objective ground (*Begründung*) or explanatory force. He claims that a true statement or truth is grounded or scientifically proved if and only if it is shown to be objectively dependent on other truths.(1) Bolzano holds a foundationalist view on which there are basic true propositions or axioms and basic beliefs that support derivative propositions and derivative beliefs based on the more basic propositions and beliefs. He claims that a semantic dependence relation holds between basic propositions or basic beliefs and derivative propositions or derivative beliefs, a relation he calls *Abfolge*, translated as the grounding relation, where grounding a statement means giving a reason for that statement." (p. 85)  
 (1) *Beyträge* II, (1810), § 12. cf. also 1817, §1 where he says that scientific proofs should be groundings (*Begründungen*) and introduces the terms *Grundwahrheiten* and *Folgewahrheiten*."  
 References  
 Bolzano, Bernard. (1810) *Beyträge zu einer begründeteren Darstellung der Mathematik*. Prague: Caspar Widtmann. [English translation by Steve Russ in: Bolzano, Bernard. 2004. „Contributions to a better grounded presentation of mathematics.“ In *From Kant to Hilbert. A sourcebook on the foundations of mathematics*, vol. I, edited by William Ewald, 174-224. Oxford: Clarendon Press.]  
 \_\_\_ (1817), *Rein analytischer Beweis des Lehrsatzes, dass zwischen je zwey Werthen, die ein entgegengesetztes Resultat gewähren, wenigstens eine reele Wurzel der Gleichung liege*, Wilhelm Engelmann (English translation: *Purely analytic proof of the theorem that between any two values which give results of opposite sign, there lies at least one real root of the equation*; in *From Kant to Hilbert, cit.*, pp. 225-248.

23. Kment, Boris. 2014. *Modality and Explanatory Reasoning*. New York: Oxford University Press.  
 "The goal of this book is to shed light on metaphysical necessity and the broader class of modal properties to which it belongs."  
 (...)  
 I will argue that to understand modality we need to reconceptualize its relationship to causation and other forms of explanation such as grounding, a relation that connects metaphysically fundamental facts to non-fundamental ones. While many philosophers have tried to give modal analyses of causation and explanation, often in counterfactual terms, I will argue that we obtain a more plausible, explanatorily powerful and unified theory if we regard explanation as more fundamental than modality." (p. 1)
24. Knappik, Franz. 2016. "And Yet He is a Monist: Comments on James Kreines, *Reason in the World*." *Hegel Bulletin*:1-17.  
 Abstract: "I critically discuss Kreines's arguments against readings on which Hegel holds some version of metaphysical monism. In section 1, I address Kreines's claim that Hegel's revised version of Kant's argument in the Transcendental Dialectic implies a rejection of metaphysical monism. I argue both that the argument that Kreines ascribes to Hegel does not itself rule out monism, and that there are serious exegetical problems with the way Kreines understands Hegel's diagnosis of the antinomies and his critique of the metaphysics of the understanding. In section 2, I discuss additional reasons that Kreines gives for seeing Hegel as rejecting metaphysical monism. In particular, I argue that Hegel is much more optimistic about the intelligibility of nature than Kreines thinks: to a substantial degree, the basic structure of nature, including the laws of mechanics, is open to explanations that are ultimately based on a monistic principle."
25. Koslicki, Kathrin. 2014. "The Causal Priority of Form in Aristotle." *Studia Philosophica Estonica* no. 7:113-141.  
 Abstract: "In various texts (e.g., *Met. Z.17*), Aristotle assigns priority to form, in its role as a principle and cause, over matter and the matter-form compound. Given the central role played by this claim in Aristotle's search for primary substance in the *Metaphysics*, it is important to understand what motivates him in locating the *primary* causal responsibility for a thing's being what it is with the form, rather than the matter. According to *Met. Θ.8*, actuality [*energeia/entelecheia*] in general is prior to potentiality [*dunamis*] in three ways, viz., in *definition, time and substance*. I propose an explicitly *causal* reading of this general priority claim, as it pertains to the matter-form relationship. The priority of form over matter in *definition, time and substance*, in my view, is best explained by appeal to the role of form as the *formal, efficient and final* cause of the matter-form compound, respectively, while the posteriority of matter to form according to all three notions of priority is most plausibly accounted for by the fact that the causal contribution of matter is limited to its role as material cause. When approached from this angle, the work of *Met. Θ.8*, can be seen to lend direct support to the more specific and explicitly causal priority claim we encounter in *Met. Z.17*, viz., that form is prior to matter in its role as the principle and primary cause of a matter-form compound's being what it is."
26. Kreines, James. 2015. *Reason in the World: Hegel's Metaphysics and Its Philosophical Appeal*. New York: Oxford University Press.  
 "What we are discovering, as we step through these debates, is the fundamentality of the question of *what is a reason for what*. We need the basic and general notion of one thing being a reason for another in order to engage *any* of these debates. And so we should accept that notion as basic and proceed to consider what specific forms of reason there really are, which directions they run in different cases, and how they relate to one another. This point can be expressed in contemporary terminology as well, but it requires stretching a bit beyond the usage generally intended. Schaffer, for example, speaks of "ontological dependence" and

“grounding.” Part of his point is to distinguish a special sort of worldly dependence in metaphysics, parallel to but distinct from cases like the causality of interest in the natural sciences. My point here is that we need a more general notion of *worldly dependence*, or (better) *reason in the world*, in order to open up in a parallel manner all the questions and possible positions concerning laws, causality, and so on.(13)" (p. 68)

(13) See especially Schaffer (2009). The notion of “worldly dependence” here, then, is closer not to Schaffer’s “grounding” but to Kim’s (1994) notion of a “metaphysical dependence” that is the “correlate” of explanation, where this can but need not be specifically causal.

#### References

Kim, J. 1994. “Explanatory Knowledge and Metaphysical Dependence.” *Philosophical Issues* 5: 51–69.

Schaffer, J. 2009. “On What Grounds What.” In *Metametaphysics: New Essays on the Foundations of Ontology*, edited by D. Manley, D. Chalmers, and R. Wasserman, 347–83. Oxford: Oxford University Press.

27. ———. 2016. "Things in Themselves and Metaphysical Grounding: On Allais' *Manifest Reality*." *European Journal of Philosophy* no. 24:253-266.  
 "I conclude, then, as follows: There is no comparatively comprehensive interpretation of transcendental idealism that is, in my view, more successful than Allais' ambitious *Manifest Reality*. With respect to Kant on things in themselves, however, I think Allais' account retains one disadvantage common to its competitors. Escape, as I see it, requires different understanding of the extremes that a “moderate” interpretation should avoid: On the one extreme, there are indeed deflationary readings, precluding a metaphysical assertion of the existence of things in themselves as grounds of appearances.  
 But the other extreme is not precisely noumenalism, as Allais claims. It is rather any metaphysics asserting the existence of unconditioned grounds, or metaphysical fundamentality in this sense. The argument of the Dialectic rules these all to be unacceptably dogmatic, and for what seem to me powerfully philosophical reasons. I would think that the big interpretive challenge is to navigate between these extremes concerning things in themselves—hopefully in a manner that can retain access to the many unmatched advantages of Allais' interpretation of Kant on appearances." (p. 264)

#### References

Allais, L. (2010), ‘Transcendental Idealism and Metaphysics,’ *Kantian Yearbook* 2:1–32.

——— (2015), *Manifest Reality: Kant's Idealism & his Realism*. Oxford: Oxford University Press.

28. ———. 2016. "Fundamentality without Metaphysical Monism: Response to Critics of *Reason in the World*." *Hegel Bulletin*:1-19.  
 Abstract: "This article is a reply to comments by Franz Knappik and Robert Stern on my book, *Reason in the World: Hegel's Metaphysics and its Philosophical Appeal*. Issues addressed include the systematicity of Hegel's philosophy, the prioritizing of metaphysical over epistemological questions in his arguments, Hegel's response to Kant's Antinomy of Pure Reason, and my conclusion that there are senses in which Hegel's own position is both ambitiously metaphysical and also monist, but that the monism present there is epistemological, and the ambitious metaphysics is non-monist."
29. Kriener, Jönne. 2017. "Bolzano." In *The History of Philosophical and Formal Logic: From Aristotle to Tarski*, edited by Malpass, Alex and Antonutti Marfori, Marianna, 121-142. New York: Bloomsbury Academic.  
 See *Bolzano's theory of grounding* (pp. 133-137).  
 5.1 Grounding  
 Bolzano's logic as developed so far applies equally to true as to false propositions.

However, Bolzano has more to offer: a special system for *truths*. True propositions are ordered by what Bolzano calls the relation of *Abfolge*. Let me translate it as ‘grounding’. Bolzano motivates his theory of grounding from examples of the following kind ( WL §198).

(3) It is warmer in Palermo than in New York.

(4) The thermometer stands higher in Palermo than in New York.

Both propositions are true. However, it is the truth of (3) that explains (4) and not vice versa. The truth of (3) grounds the truth of (4).

This relation of grounding stands out from Bolzano’s system in that it is not defined in terms of variation. In particular, the fact that (3) grounds (4) and not vice versa cannot be captured by deducibility: (3) can be derived from (4).

Therefore, a stronger concept is needed: (3) *grounds* (4).

For a long time, interpreters have found this part of Bolzano’s work ‘obscure’ ( Berg 1962 : 151). Nothing in a modern logic textbook corresponds to Bolzanian grounding. Nonetheless, the concept has a long and venerable tradition. Bolzano connects with Aristotle’s distinction between *why* -proofs and mere *that* -proofs (Aristotle 2006 : 1051b; Betti 2010 )." (p. 133)

References

Aristotle ( 2006), *Metaphysics Book Θ* , ed. Stephen Makin , Oxford: Clarendon Press.

Berg, Jan (1962), *Bolzano’s Logic*. Stockholm , Almqvist & Wiksell.

Betti , Arianna ( 2010), ‘ Explanation in Metaphysics and Bolzano’s Theory of Ground and Consequence’, 211 : 281–316 .

Bolzano , Bernard (1837), *Wissenschaftslehre*, Sulzbach: Seidel.

30. Lapointe, Sandra. 2006. "Bolzano on Grounding or Why Is Logic Synthetic." In *The Logica Yearbook 2005*, 113-126. Prague: Filosofia.
31. Malink, Marko. 2020. "Aristotelian Demonstration." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 33-48. New York: Routledge.  
 "In what follows, I give an overview of Aristotle’s argument and its historical significance (Section 2). The relevant relation of priority in nature is determined by the order of terms in acyclic chains of immediate universal affirmations (Sections 3 and 4). Given the deductive framework of Aristotle’s syllogistic theory, it can be shown that all direct demonstrations but not all indirect demonstrations proceed from premises that are prior in nature to the conclusion (Section 5). I conclude by indicating how this fact correlates with similar results in modern versions of the impure logic of ground (Section 6)." (p. 34)
32. Massimi, Michela. 2017. "Grounds, Modality, and Nomic Necessity in the Critical Kant." In *Kant and the Laws of Nature*, edited by Massimi, Michela and Breitenbach, Angela, 150-170. Cambridge: Cambridge University Press.  
 "In this section, I turn to Kant’s lectures on metaphysics to clarify why, in my view, Kant’s considered answer to the problem of inference should be searched for in his multifaceted notion of ground and consequence. I clarify three different kinds of nomic necessity that Kant saw at play in different kinds of laws, each respectively relying on a different notion of ground, qua conceptual ground (“ratio cognoscendi”), qua ground of being (“ratio essendi”), or qua ground of becoming (“ratio fiendi”). Only the latter notion captures cause–effect relations at play in empirical causal laws, I argue." (p. 169)  
 (...)  
 "The main goal of this chapter was to advance an interpretation that could vindicate Kant’s bold claim that the understanding prescribes laws to nature. To this end, I have elucidated the metaphysical aspect of the dispositional essentialist reading that I am defending on Kant’s behalf with an eye to clarifying different kinds of necessity that Kant seems to be referring to in various passages of the lectures on metaphysics. We identified three main notions of necessity (conceptual, metaphysical, and natural necessity, respectively). They are,

- respectively, at work in conceptual truths, theoretical identity statements, and empirical causal laws, via three different kinds of grounds (*ratio cognoscendi*, *essendi*, and *fiendi*). This taxonomy is far from exhaustive and is meant only to map out (tentatively) the territory of lawlike claims and their necessity in Kant." (p. 168)
33. Melamed, Yitzhak Y. 2012. "Why Spinoza is not an Eleatic Monist (Or Why Diversity Exists)." In *Spinoza on Monism*, edited by Goff, Philip, 206-222. New York: Palgrave Macmillan.  
 "In the first part of the chapter I will present and explain the problem of justifying the existence of infinite plurality modes in Spinoza's system. In the second part of the chapter I consider the radical solution to the problem according to which modes do not really exist, and show that this solution must be rejected upon consideration. In the third and final part of the chapter I will suggest my own solution according to which the essence of God is active and it is this feature of God's essence which requires the flow of modes from God's essence. I also suggest that Spinoza considered radical infinity and radical unity to be roughly the same, and that the absolute infinity of what follow from God's essence is grounded in the absolute infinity of God's essence itself." (pp. 206-207)
34. Mulligan, Kevin. 2020. "Austro-German Phenomenologists." In *The Routledge Handbook of Metaphysical Grounding*, edited by Raven, Michael J., 90-101. New York: Routledge.  
 "Brentano's heirs, in particular Husserl and Meinong, as well as their students and many philosophers influenced by them, rely heavily on grounding (*begründen*), founding (*fundieren*), and related ties such as dependence (*Abhängigkeit*) and existential relativity.  
 (...)
 In this section, we look at how Brentano's heirs understood grounding and foundation, in particular their relation to essentialism and modality, and say something about the variety of the claims they put forward that employ grounding and foundation. In the following sections, we look in more detail at a handful of philosophical claims formulated in terms of foundation (§2) and grounding (§§3–5)." (p. 90)
35. 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)

36. 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.<sup>1</sup> 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,
37. 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.(...).

38. 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."
39. 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.
40. Roques, Magali, and Schmid, S., eds. 2022. *Grounding in Medieval Philosophy*. Leiden: Brill.  
Not yet published.
41. 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; 1 list 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*.<sup>(52)</sup> 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.

42. ———. 2019. "Bolzano and Kim on Grounding and Unification." *Synthese* no. 196:2971-2999.  
 Abstract: "It is sometimes mentioned that Bernard Bolzano's work 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."
43. ———. 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)
44. 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."
45. 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.
46. Roski, Stefan, and Schnieder, Benjamin. 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."
47. ———. 2022. "Introduction: 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.  
"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)
48. ———, 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.
49. 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."
50. Sandstad, Peter. 2022. "Grounding and Aristotle's *Posterior Analytics*." In *Grounding in Medieval Philosophy*, edited by Roques, Magali and Schmid, S., 91-112. Leiden: Brill.  
Not yet published.
51. 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.
52. 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 Theta* 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)
53. Sirkel, Riin. 2022. "Ontological Priority and Grounding in Aristotle's *Categories*." In *Grounding in Medieval Philosophy*, edited by Roques, Magali. Leiden: Brill. Not yet published; preprint available at Academia.edu.  
 Abstract: "In the *Categories*, 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."
54. 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 Königsberg 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: "[Kant in Classroom](#)".  
 (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.
55. 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."
56. 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."
57. 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)
58. 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)
59. 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."
60. ———. 2003. "Bolzano on Grounding." In *The Logica Yearbook 2002*, edited by Childers, Timothy and Majer, Ondrej, 245-258. Prague: Filosofia.
61. 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 Through 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.
62. 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.
63. 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 (άπειρα) 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" (έόντα). 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, άπειρα and άρμονία coming together and coming to be realized (άρμόχθη). In other words, φύσις is the state that results from the realization of the three fundamental powers. Philolaus' έόντα are to be considered as coming out of the four primary powers and of what Philolaus refers to as έστώ. Thus, Philolaus appears to be one of the first power structuralists."
64. 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)

65. 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."