Metaphysical Grounding

Understanding the Structure of Reality

EDITED BY

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Grounding: an opinionated introduction

Fabrice Correia and Benjamin Schnieder

I GROUNDING INTRODUCED

Some of the most important questions in philosophy, we believe, concern matters of priority. Here is a list of priority claims which have been held in different areas of philosophy:

1. Mental facts obtain because of neurophysiological facts.
2. Legal facts are grounded in non-legal, e.g. social, facts.
3. Normative facts are based on natural facts.
4. Meaning is due to non-semantic facts.
5. Dispositional properties are possessed in virtue of categorical properties.
6. What accounts for the existence of a whole is the existence and arrangement of its parts.
7. A set of things is less fundamental than its members.
8. What makes something beautiful are certain facts about the reception of its beholders.
9. A substance is prior to its tropes or modes.
10. That snow is white is true because snow is white.

What concerns us here is not so much whether these specific claims are true, but rather something they have in common topic-wise: it seems to us that they all target a particular sort of non-causal priority which we would like to call *grounding* and which we regard as a phenomenon of the highest philosophical importance.

This volume collects papers in which this phenomenon is addressed from various (both sympathetic and critical) sides. Summaries of those papers are provided in Section 6 of this introduction. But first, we want to walk you through an opinionated survey of pertinent issues, preparing the field and putting the papers into perspective.

While the recent debate about grounding is not older than a decade, the topic has been dealt with before. So, we start by briefly walking

through some important stages of the history of grounding. We then devote two sections on systematic issues, one on the theory of grounding proper, and one on its connections with other notions.[1]

2   A VERY SHORT HISTORY OF GROUNDING

For reasons of space, we are bound to comment on a highly selective choice of authors and issues here and we have to set aside many interesting sources. One important victim of this policy is Aristotle. His distinction between four different kinds of *aitiai* – or *becauses*, as Hocutt (1974) puts it – arguably involves the recognition of grounding in the formal and the material *aitiai*. If this is correct, then his theory of *aitiai*, as well as his related distinction between proofs which demonstrate that something is the case and proofs which demonstrate why something is the case, are important historical sources for treatments of grounding. But the interpretation of Aristotle's works is usually very controversial and we felt we lacked the space – and, frankly speaking, the confidence – to enter the discussion. Instead, for this historical excursion we focus on (a) the Euthyphro Argument, (b) the Principle of Sufficient Reason, and (c) Bernard Bolzano's theory of grounding.

2.1   *The Euthyphro Argument*

One of the earliest occasions on which the phenomenon of grounding has been dealt with is Plato's *Euthyphro* dialogue, in which Socrates inquires about the nature of piety. In response to the Socratic question – 'What is the pious?' – Euthyphro first announces that what he himself is doing is pious, namely to persecute the wrongdoer even if that means to persecute his own father. As Socrates explains, this is not the *kind* of answer he requested:

Call to mind that this is not what I asked you, to tell me one or two of the many pious acts, but to tell the essential aspect, in virtue of which all pious acts are pious; for you said that there is a single aspect by which all impious acts are impious and all pious ones pious. (*Euthyphro*, Stephanus page 6d)

Socrates here makes a demand which is typical for the early dialogues: he wants to be given a general answer, not an exemplary one. He wants to

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know conditions under which *any* given thing is pious. But he requires more; he does not want to know *any* sort of condition, he wants to be told the aspect *by* which, or *in virtue of* which, a pious thing is pious. The Socratic question, hence, aims at the *ground* of piety.

Socrates later uses considerations about grounding in his argument against Euthyphro's central proposal, i.e. that

EU   the pious is the god-beloved.

He and Euthyphro agree that

(1) If something is loved by the gods, it is loved by them because it is pious.

They conclude that the converse claim is false and agreed on:

(2) It is not because the gods love something that it is pious.

The inference from (1) to (2) is not commented on; apparently, Socrates and Euthyphro implicitly rely on the assumption that 'because' (or, as we would like to put it here, grounding) behaves asymmetrically.

They also agree that

(3) If something is god-beloved, it is so because the gods love it.

So they conclude that the converse claim fails, hence agreeing on:

(4) It is not because something is god-beloved that it is loved by the gods.

Why do Socrates and Euthyphro hold (3), though? Commentators have found it rather hard to make good sense of that claim. Of the many interpretations which have been suggested, one is noteworthy in the present context: with (3), Socrates wants to make the plausible grounding claim that something has a relational property (it is god-beloved) because it stands to something in a certain relation (it is loved by the gods).[2]

On the basis of claims (1) to (4), Socrates concludes that Euthyphro missed his goal and that EU must be rejected. For, Euthyphro produced EU as a reply to the question in virtue of what a pious thing is pious. Hence, it commits him to accept the claim that

(5) If something is pious, it is pious because it is god-beloved.

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[2] See Allen 1970, 40.

In conjunction with (3), Socrates holds, it then follows that

(6) If something is pious, it is pious because the gods love it.

But how is this inference warranted? Answer: it implicitly relies on the assumption that 'because'-statements allow for chaining – put differently: on the assumption that grounding is transitive.

Now claim (6) contradicts claim (2) on which Euthyphro already agreed.[3] Socrates concludes that Euthyphro's proposal fails.

Construed this way, Socrates' argument makes essential use of principles about grounding. It involves one substantive grounding claim (relational properties are grounded in relations) and it implicitly draws on structural properties of grounding, namely asymmetry and transitivity, which are nowadays widely accepted among philosophers working on grounding.[4]

2.2   The Principle of Sufficient Reason

The *Principle of Sufficient Reason* (for short: *PSR*) says, in its simplest form, that everything has a reason. In the rationalist tradition the *PSR* was often regarded as one of the highest laws of thought. Initiated by Leibniz's works, there was a vivid debate about how to prove it and about its proper understanding and its applications (the debate petered out in the nineteenth century).

That debate is not easily accessible. Contributions to it are phrased in theoretical frameworks which are unfamiliar to modern readers, and they often employ concepts which seem insufficiently clear or sophisticated to us. But still, we deem it worthwhile to re-evaluate the discussion in light of the recent interest in grounding.[5]

Rationalists often distinguished different notions of a reason, some of which arguably aimed at the notion of a ground; and they distinguished different versions of the *PSR*, some of which accordingly aimed at principles about grounding. Two distinctions commonly appearing in the debate concerned

D.1   a. reasons of concrete things (substances and their modes)
        versus
        b. reasons of truths.

(The former reasons were either equated with causes, or regarded as closely connected to them.)

D.2 a. objective reasons for a thing or fact *versus*
b. reasons for knowing about it.

While the distinctions D.1 and D.2 were sometimes treated as if they were the same distinction put in different words, several philosophers argued that they must be kept apart. Against the identification of objective reasons with reasons of concrete things, Crusius and Schopenhauer both stressed that we must acknowledge objective reasons in the field of mathematics:[6] many mathematical entities and/or facts have reasons in being determined by others, while such things do not stand in causal relations to each other. And the young Kant complained that reasons for truth were sometimes regarded as mere reasons for knowledge.[7] Against that, he stressed the need to acknowledge reasons which *bring about* that something is true.[8] But those reasons do not coincide with reasons for knowing a truth, since the latter are only reasons of discovering a truth which must have been brought about independently. We can make sense of those claims in terms of grounding: Crusius and Schopenhauer drew attention to grounding relations between mathematical facts while Kant wanted to know what grounds the truth of a truth-bearer.

What is perhaps most puzzling about the rationalist tradition is the steadfast certainty with which the *PSR* was often accepted. For the *PSR* in effect denies that there are fundamental facts, i.e. facts that are not grounded by anything else. And most philosophers nowadays would agree that it is quite debatable whether or not there are such facts.

The rationalist stance may be even more surprising if we consider the arguments that were produced in favour of the *PSR*. Many of them look suspiciously like textbook examples of a fallacy (sometimes even of more than one). To cite but one example, a famous argument in the Wolffian school ran as follows:[9]

P.1 If the *PSR* fails, there must be some x which lacks a reason.
P.2 If x lacks a reason, then nothing is the reason of x.
P.3 However, nothing (that is, the void) cannot be the reason of anything.
C Hence, the *PSR* holds.

[6] See Crusius 1743 and Schopenhauer 1813. [7] See Kant 1755.
[8] Such a reason seems to be stated by sentence (10) from our list in Section 1.
[9] It is a slightly simplified version of Baumgarten 1757, §20.

The argument involves the very logical mistake for which Carnap later famously criticized Heidegger;[10] in premise P.3 it violates logical grammar and erroneously construes the quantifier 'nothing' as a singular term.

Of course, some rationalists soon realized the flaws of such fallacious arguments. But instead of consequently withholding assent from the principle, many of them rather sided with Leibniz, who famously claimed that the *PSR* is such an evident and fundamental truth that it would be a folly to ask for an argument in its favour.[11]

Perhaps we have to regard it as a genuine paradigm change that some hundred years ago, many prominent philosophers were so convinced of the *PSR* that they felt unable to understand how one could question it, while nowadays even friends of the *PSR* would hardly regard it as a principle beyond reasonable doubt.[12]

2.3   Bernard Bolzano's theory of grounding

Bolzano's work is a genuine milestone in the history of grounding. He developed a very rich and detailed theory of grounding, addressing numerous issues pertinent to the recent debate.[13] We will briefly describe some cornerstones of his account.

Bolzano conceived of propositions as abstract objects which are structured compounds of concepts and potential contents of judgements and assertions. He thought that we can make out an objective order among true propositions: some truths are the objective grounds of others (their consequences). The importance of discovering this order can, according to Bolzano, hardly be overestimated. He even argued that it is characteristic of a genuinely philosophical inquiry that it be concerned with the grounds of things, relying on an admittedly broad notion of philosophical inquiry, distinguished not so much by a particular subject matter but rather by a method or focus.[14] On his view, one can approach basically every subject matter (be it mathematics, politics, or physics) in a non-philosophical or a philosophical mood, depending on whether one only collects the facts of the matter or whether one also tries to understand their grounding structures. For instance, mathematical proofs are philosophical in method if they do not only demonstrate

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[10] See Carnap 1931, 229f. Of course, the mistake had been recognized before; it is made fun of, for instance, in the dialogue between Alice and the King in *Through the Looking-Glass*.

[11] See Leibniz's fifth letter to Clarke, §§125ff. in Alexander 1956.

[12] For a recent attempt to defend the *PSR*, see Della Rocca 2010.

[13] For his mature theory of grounding, see Bolzano 1837, vol. ii, §§168, 177, 198–222. All further references to sections are to 1837, vol. ii. See also Tatzel 2002 for a reconstruction of its essentials.

[14] See Bolzano 1838.

that a certain mathematical truth holds but if they also disclose *why* it holds, that is, if they uncover its grounds. In fact, a major source for Bolzano's interest in grounding was his dissatisfaction with many available proofs in mathematics which often ran against the order of grounding.[15]

But let us turn to Bolzano's theory of grounding. He was inclined to think that the notion of 'groundhood', i.e. that property which makes something a ground, cannot be analysed in terms of other notions (§202),[16] even though he thought it can be illuminated by specifying its properties and by relating it to other notions.

First, some comparisons. On the negative side, Bolzano distinguished grounding from mere entailment, presenting pairs of propositions which stand in a mutual entailment relation, though not in a mutual grounding relation (e.g. that birds fly and that it is true that birds fly) (§§162, 198). He also distinguished objective grounds from reasons for knowing something; they may run in opposite directions, since sometimes we can discover a ground from observing its consequences (§198). On the positive side, he correlated talk about grounding to talk about dependence and talk about *making* something thus-and-so. And, most importantly, he took the sentential connective 'because' to introduce the notion of grounding: a sentence 'p because q' is true iff the proposition expressed by 'q' is a ground of the proposition expressed by 'p' (§177). Note that Bolzano generally saw no problem in attributing a logical form to a sentence which strongly deviated from its surface form. So, since he conceived of grounding as a relation, he took the underlying logical form of grounding statements always to be a relational one, even if their surface form may look otherwise (e.g. involving a sentential connective instead of a relational predicate).

Second, some properties of grounding. Bolzano distinguished between complete and partial grounds and consequences (truths grounded in something): a complete ground of x can consist of several propositions, such that each of them then counts as a partial ground of x (the application of the distinction to the notion of a consequence is obvious). One might be tempted to think, Bolzano admitted, that a ground is always a single proposition, so that whenever several propositions $x, x', \ldots$ seem to ground y, it is really the conjunction of $x, x', \ldots$ that grounds y. However, the temptation should be resisted: a true conjunction is certainly itself a grounded truth, Bolzano argued, and it is grounded in its conjuncts. But a

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[15] See Bolzano 1810.

[16] However, at one point (§221, note) he expresses sympathy with an analysis which approaches the notion in a somewhat holistic fashion; compare Mancosu 1999, 435f. and 451f.

conjunction cannot be grounded in the conjunction of its conjuncts, since then it would ground itself, which seems absurd (§205).

Bolzano furthermore distinguished between immediate and mediate grounds and consequences: a mediate ground of x is a ground of a ground of x, or a ground of a ground of a ground of x, etc. (again, the application of the distinction to the notion of a consequence is obvious) (§213).

The different notions of ground and consequence are clearly not independent of each other; Bolzano tentatively thought that the basic notion in that family is that of a complete and immediate ground, whereas the other notions are derivative of that basic one.

Bolzano attributed some crucial structural features to grounding (in all its varieties):

FACTIVITY   Grounding connects only true propositions. (§203)
IRREFLEXIVITY   No proposition is a ground of itself. (§204)
ASYMMETRY   If x is a ground of y, then y is no ground of x. (§209)

(In fact, Irreflexivity is already entailed by Asymmetry.)

Bolzano finally considered the further structural property of

TRANSITIVITY   If x grounds y, and y grounds z, then x grounds z.

With respect to this property he held that mediate and immediate grounding come apart: the former is transitive while the latter is not (§213). Bolzano thought that the *PSR*, understood as a principle about grounding, fails and that there are fundamental, ungrounded truths. He based his belief mainly on some truths which seemed fundamental to him. At least the example he presents when making his claim is highly questionable from our perspective: it is the truth that something exists (§214). The example is on the wrong track if, what seems plausible to us, existential claims are grounded in their true instances.[17] Then far from being fundamental, Bolzano's example has numerous – arguably even an infinity – of grounds (e.g. that Bolzano exists, that Frege exists, etc.).[18]

Bolzano's views on grounding evolved over a long period of time. One crucial change in the way he thought about grounding concerns its relata: in his early works, he employed a multi-categorial notion of grounding.[19]

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[17] See, e.g., Correia 2005, 59, Rosen 2010, Schnieder 2011, and Fine's contribution to this volume.
[18] In addition to such examples, Bolzano had one independent argument for the existence of fundamental truths (§221.3). It is based on substantial presuppositions, though, which we cannot discuss here for reasons of space.
[19] See Bolzano 1810–12.

Grounds could be of any ontological category, they could be substances, modes, propositions, or anything else. Relatedly, he then subsumed under the relation of grounding such relations as causation, dependence, and making something-thus-and-so (including truth-making), all of whose relata he called grounds and consequences. Later, though, he sharply distinguished grounding as a relation between truths from relations holding between things of other categories. But although he thus separated certain relations which he first threw together, he still took them to be intimately connected; in fact, he took the other relations to be definable in terms of grounding.

Take causation and grounding.[20] The mature Bolzano acknowledged that they are relations holding between different relata (grounding: truths, causation: concrete entities). But causation always goes together with true 'because'-statements (causal explanations) and Bolzano thought that 'because' always signifies the grounding relation. So he concluded that causation always corresponds to true grounding claims. This is a connection which needs to be accounted for, and Bolzano proposed to understand causation in terms of grounding: causes and effects are the objects featuring in grounding statements of a particular sort, in which the actual existence or occurrence of an entity explains that of another (e.g. the fire occurred because the collision did).

2.4   The decline of grounding

Bolzano's contribution looks very modern in many respects; in fact, it may seem as if the current debate took up where Bolzano left the issue more than 150 years ago. What happened in between? Bolzano's own work on the subject had been mostly ignored until recently. And indeed, after the debate on the *PSR* slowly petered out in the nineteenth century, engagement with the notion of grounding strongly decreased, until philosophy basically turned silent on the issue for decades. Several factors played a role in the decline of grounding. For one, due to the influence of the declaredly anti-metaphysical Vienna Circle, the metaphysical aspect of grounding must have seemed suspicious to many philosophers. Somewhat later, Quine's influence and his scepticism about non-extensional ideology probably scared off others from the notion. Another factor was that debates about reasons and 'because' were generally delegated to the theory of science, while that discipline strongly focused on scientific explanations and in particular on causal ones. Moreover, the

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[20] On the following, see §201. For a detailed discussion of how Bolzano relates causation and grounding, see Schnieder forthcoming.

dominant approaches in the early analytic debate about explanation (in particular Hempel and Oppenheim's D-N model) were framed in decidedly non-metaphysical terms.

But even when metaphysics started to become respectable again, in particular due to the development of modal logic, it took time for the notion of grounding to resurface. For, in the heyday of modal logic, philosophers typically tried to account for any metaphysical notions in modal terms. But it is nowadays commonly acknowledged that this approach will not get us far with the notion of grounding (see Sections 3.2 and 4.1 below). In effect, a serious interest in grounding only arose again at the beginning of the twenty-first century.

3   SYSTEMATIC ISSUES I: ASPECTS OF THE PURE THEORY OF GROUNDING

Leaving the history of grounding behind, we now want to take a closer look at some systematic issues of a theory of grounding, a number of which were already touched upon in the historical walk-through. In the present section, we comment on four selected issues we take to be central for what could be called a pure theory of grounding. In the fourth section, we will turn to the connections between grounding and some related metaphysical notions of contemporary interest.

3.1   Formulation

As the list of claims of ground in Section 1 suggests, there are various grammatical forms such claims can take. While these claims might still share a common underlying or logical form, this seems somewhat unlikely to us.[21] But even if their logical forms differ, one of those forms may be taken to be 'canonical', in the sense of being the most faithful to the phenomenon described. The issue here is what we should assume such a canonical form to look like. Or, to use a different metaphor: by what grammatical form would grounding be expressed in a fundamental language that could be used to write the 'book of the world'?[22]

People have been mainly attracted towards two views, the *predicational* view and the *operational* view.[23] On the first view, claims of ground

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[21] Pace Bolzano (see above).   [22] Cf. Sider 2011.

[23] There is a third, mixed view we do not discuss here, which takes seriously the form '*p* in virtue of the fact that *q*'.

should ultimately be formulated by means of a relational predicate, e.g. 'is grounded in', flanked by singular terms for entities of some sort. The most common view among predicationalists is that the relata of grounding are facts or propositions. A typical grounding claim would then look as follows:

> (1) The fact that it is true that snow is white is grounded in the fact that snow is white.

On the second view, claims of ground should, on the ultimate level, rather be formulated by means of a sentential connective or operator, e.g. 'because' (taken in an appropriate sense), flanked by sentential expressions, as in:

> (2) It is true that snow is white because snow is white.

Because it presupposes an ontology of facts or propositions, the predicational view is ontologically demanding and for some this is reason enough to opt for the operational view.[24]

However, it might be thought that predicationalists are in a better position than operationalists when it comes to formulating certain claims or defining certain notions. For consider the following definition of fundamentality:

> (3) Fact f is fundamental iff$_{df.}$ there is no g such that f is grounded in g.

In the *definiens*, 'there is no g' is a standard quantifier which binds the nominal variable 'g'. The closest operationalists can get is something like:

> (4) It is fundamental that p iff$_{df.}$ there is no q such that p because q,

where 'there is no q' is a quantified expression binding the sentential variable 'q'. Yet, some might say, such quantifiers are unintelligible. More generally, the thought is that only quantification into nominal position is legitimate, and that for this reason the operational language

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[24] As we saw, Bolzano was a predicationalist (already on the level of logical form). Recent philosophers who also use the predicational idiom include Schaffer (2009b) and Rosen (2010), and philosophers who prefer the operational mode of expression include Fine (2001, this volume), Correia, and Schnieder. Notice that, like the early Bolzano and many philosophers in the traditional debate about the *PSR*, Schaffer imposes no restriction at all on the ontological category of the *relata* of his relation of grounding.