Luis DeRosset
Fundamental Things: Theory and Application of Grounding
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In *Fundamental Things: Theory and Application of Grounding*, Luis DeRosset offers a systematic exploration of grounding, a central concept in contemporary metaphysics. Grounding has become a key tool for understanding the structured nature of reality, clarifying how some facts depend on more fundamental ones. The idea that reality is organized in layers – where higher-level facts rest on more basic ones – has shaped many debates in metaphysics, and grounding appears to provide the most promising framework for capturing this hierarchical structure. DeRosset's goal is to clarify its theoretical foundations, address key challenges, and assess its explanatory power.

The book is structured into eight chapters, divided into three main sections. The first two chapters introduce grounding, its distinctiveness from other dependence relations, and its structural features. These chapters set the stage for the rest of the book by outlining key concepts and debates from the current literature.

Chapters 3 to 6 critically engage with challenges to grounding theory. DeRosset addresses scepticism (Chapter 3), grounding's relation to reduction (Chapter 4), the collapse problem (Chapter 5), and grounding's compatibility with irrealism (Chapter 6). This middle section defends grounding's theoretical significance while acknowledging potential difficulties.

The final two chapters explore broader implications of grounding theories. Chapter 7 presents a deflationary account of truth in relation to grounding, while Chapter 8 examines the connection problem in non-reductive physicalism. These discussions extend grounding's relevance beyond traditional metaphysical concerns.

More specifically, each chapter develops these themes in the following way.

In Chapter 1, DeRosset introduces grounding as a fundamen-

tal metaphysical concept that explains how some facts depend on others. He explores its historical roots, its role in philosophical and scientific explanations, and its connection to metaphysical explanation. DeRosset argues that grounding underpins the idea of a layered reality, where higher-level facts rest on more fundamental ones. He distinguishes grounding from causation and emphasises its relevance across disciplines. Finally, he outlines how grounding structures theories and entities, setting the stage for a systematic investigation into fundamentality and dependence.

In Chapter 2, DeRosset explores the nature of grounding, distinguishing it from other forms of dependence, such as causation, and analysing its structural features, such as variable adicity and non-monotonicity. He examines whether grounding concerns facts or propositions and the distinction between partial and full grounding (i.e., complete and incomplete explanations). He addresses the formal features of grounding, like transitivity and asymmetry, as delineating grounding's explanatory power, and finally emphasises grounding's role in tracking relative fundamentality.

In Chapter 3, DeRosset examines scepticism about grounding, distinguishing between Hard Eliminativism, which denies the existence of grounding; Soft Eliminativism, which claims grounding is too unclear for theorising; and Revolutionary Reductionism (RR), which argues that other relational terms such as supervenience should replace grounding. He counters these views by showing that grounding has theoretical utility, its inquiries are not inherently defective, and alternative frameworks cannot fully replace its role. Ultimately, he defends the legitimacy of grounding as a theoretical project and advocates for its continued development.

In Chapter 4, DeRosset examines the relationship between grounding and identity reduction, arguing that identity reduction alone cannot fully explain reality's layered structure and that grounding is also needed. He critiques identity reduction by showing its limitations in capturing explanatory asymmetry and handling multiple realizability arguments. While alternative approaches such as functional realisation, mechanistic explanation, and metaphysical semantics attempt to account for reduction, they all require grounding to explain the asymmetry between their two terms, which ultimately characterises the layered structure of reality. He concludes that grounding and reduction are complementary tools for understanding fundamentality.

In Chapter 5, DeRosset examines the "collapse" problem raised by Sider (2011). This problem threatens the theory of grounding by suggesting that if grounding facts are fundamental, then all entities become fundamental, thus erasing any layered structure. To counter this, DeRosset argues that grounding explanations must themselves be grounded in their explanans rather than being treated as fundamental. In doing so, he assumes the CORR principle, according to which ungrounded facts only have fundamental entities as constituents. He explores generalisations of the collapse problem, considers objections (see Dasgupta (2014), Glazier (2016)), and ultimately defends a structured theory of grounding that preserves distinctions between fundamental and non-fundamental entities under the assumption of CORR.

In Chapter 6, DeRosset explores whether grounding can accommodate conciliatory irrealism—the view that some truths depend on others without corresponding to real entities. He critiques standard grounding and truthmaking approaches, finding that the former assumes too much ontology while the latter fail to capture theoretical structure. His solution combines elements of both, introducing "grounding+", which preserves explanatory power without requiring extra facts beyond the physical domain. This provides a methodological tool for analysing dependence relations while avoiding unnecessary ontological commitments.

In Chapter 7, DeRosset examines the grounding of truth and argues for a deflationary view that treats truth as "metaphysically lightweight". He introduces the Hollow Truth (HT) theory, which claims that truth ascriptions do not play an explanatory role in grounding but merely serve as placeholders for their grounds. This allows HT to solve puzzles about grounding and truth without requiring self-grounding or violating grounding principles. DeRosset argues that this approach clarifies a core deflationary intuition and systematically explains truth's role within grounding theory.

In Chapter 8, DeRosset introduces the concept of the 'connection problem', a significant challenge to non-reductive physicalism. This problem questions how higher-level facts, like biological ones, can be fully grounded in lower-level physical facts without implying that the higher-level entities are fundamental. DeRosset argues that the widely accepted 'determination constraint' on grounding explanations leads to this issue, suggesting that non-reductivism may inadvertently render biological entities fundamen-

tal. He explores various responses to this problem, including revising the determination constraint and considering alternative formulations of non-reductivism. Despite these efforts, DeRosset concludes that the connection problem remains a critical and unresolved issue, posing a substantial challenge to our understanding of layered structure in reality.

DeRosset's analysis is rigorous and systematic, balancing defence and critique. His treatment of sceptical positions strengthens his argument, though some conclusions – such as his response to the collapse problem or his deflationary view of truth – remain open to debate. So, the book merits a deeper discussion on a wide range of different fronts. Still, I hope I can be forgiven for focusing on Chapter 4, in which DeRosset criticises identity reduction.

Chapter 4 critically addresses the role of identity reduction (IR) in explaining the layered structure of reality. IR is here understood as the metaphysical identity between facts stated by different theories—for instance, biological facts and physical facts. However, several unresolved issues emerge.

DeRosset introduces the multiple realizability argument in the chapter, which aims to show that IR cannot capture metaphysical dependence in layered structures. The argument assumes that a biological fact (e.g., "something is alive") could be realised by non-actual lower-level facts (e.g., in an Aristotelian chemistry world). If this is possible, then biological facts cannot be identical to specific physical facts, since identity requires necessary coextension across worlds. DeRosset compellingly argues that IR works well in connecting intermediate levels (like biology to chemistry), but it fails to account for dependence on fundamental physical facts ("@-physical facts"). Thus, grounding is required to explain how higher-level facts metaphysically depend on lower-level ones in a way that captures both explanatory asymmetry and modal variation. Overall, this chapter provides a compelling case that IR alone is inadequate. Grounding is not a competitor to reduction but a necessary supplement to fully capture metaphysical structure. However, some problematic points can be raised.

First, it is unclear whether biological laws are reduced to physical laws or merely to physical facts. DeRosset notes that IR allows both options, yet provides no principle to determine which reduction is appropriate in each case. While this flexibility might seem explanatorily useful, its theoretical justification remains obscure.

Second, DeRosset claims that property identities and conceptual analyses entail IR, but not the reverse. Introducing square brackets to indicate facts, then, for example, if F = G, then the fact [Fx] = [Gx]; but [Fx] = [Gx] does not entail that F = G. The reasons behind the claim are not clarified, and this could weaken the explanatory force of the argument.

Third, a major point of discussion concerns the explanatory asymmetry found in real definitions. Drawing on Rosen (2010), DeRosset challenges the Grounding-Reduction Link, which claims that if "x is F and to be F just is to be G," then x is G in virtue of being F. Rosen establishes the link on the ground of a very fine-grained theory of facts, which enables him to state, for example, that [2+2=4] and [2+(s)1= 4] are two different facts. DeRosset wants to preserve fact identity – this is justified in (§4.2.1), where he introduces the Russell-Myhill paradox to favor a less fine-grained theory of facts. Despite establishing the possibility of fact identity and cases of identity reduction, the author still wants to account for the intuitive explanatory asymmetry. To do this, he appeals to the idea of fact decomposition, so that if it is the case that [being a square] = [being an equilateral rectangle], then (roughly) being an equilateral and being a rectangle are facts that rely on different theories or other geometrical entities. While this is a creative and promising maneuver, the chapter does not fully develop or defend this proposal. The explanation remains somewhat indirect and schematic, leaving open questions about its viability. The tension between maintaining identity and recovering asymmetry is acknowledged but not conclusively resolved.

This monograph stands as a significant and timely contribution to contemporary metaphysical discourse. As the first comprehensive book solely dedicated to grounding, written by a single author, it offers a rigorous and systematic examination of the subject, addressing foundational theories and contemporary debates. DeRosset's clear exposition and thorough analysis provide scholars with a robust framework for exploring metaphysical dependence and fundamentality. Beyond its scholarly impact, the book's structured approach and depth make it exceptionally well-suited as a primary text for advanced courses in metaphysics, offering students a comprehensive understanding of grounding and its pivotal role in philosophical inquiry.

Bibliography

Louis DeRosset, *Fundamental Things: Theory and Applications of Grounding*, Oxford University Press, Oxford 2023

Gideon Rosen, *Metaphysical Dependence: Grounding and Reduction*, in Bob Hale, Aviv Hoffmann, *Modality: metaphysics, logic, and epistemology*, Oxford University Press, New York 2010, pp. 109-135