

Grounding Essentialism

Michael Wallner

Department of Philosophy

University of Graz

michaelwallner1@gmail.com

www.emoem.weebly.com

Austrian Science Fund (FWF): P 29050

Introduction

Meta-Grounding Question (MGQ): What grounds grounding facts?

Answers: Grounding Essentialism (GE) (Rosen 2010, Fine 2012, Dasgupta 2014a)

Zero-Grounding Account (ZGA) (Litland forthcoming)

Straight Forward Account (SFA) (Bennett 2011, deRosset 2013)

Theses: (ZGA) is not compatible with unionism (U), while (GE) is.

If (U) is true, (GE) is to be preferred over (ZGA).

(GE) can be defended against a criticism from (ZGA).

(U) grounding = metaphysical explanation

Overview

- (1) Some Features of Grounding
- (2) The Problem of Iterated Ground
- (3) Grounding Essentialism (GE)
- (4) Litland's Zero-Grounding-Account (ZGA)
- (5) (ZGA) and Unionism Are Incompatible
- (6) Does (GE) Make Grounding Ambiguous?
- (7) Summary

1 Some Features of Grounding

Grounding: Explication and Examples

Grounding claims express **explanatory dependence relations** captured by idioms like “*holding in virtue of*” or non-causal uses of “*because*”.

Examples: (controversial philosophical positions)

- (a) Normative facts are **grounded in** natural (non-normative) facts.
- (b) It is **in virtue of** having neurophysiological properties that I have mental properties.
- (c) This action is wrong **because** it is done with the sole intention to harm other people.
- (d) The existence of a complex whole is **grounded in** the existence an arrangement of its parts.

1 Some Features of Grounding

Grounding: Explication and Examples

Grounding claims express **explanatory dependence relations** captured by idioms like “*holding in virtue of*” or non-causal uses of “*because*”.

Examples: (uncontroversial explanatory relations)

- (e) A conjunction is **grounded** in both its conjuncts.
- (f) A disjunction is **grounded** in its true disjuncts.
- (g) That this ball is red is **grounded** in its being crimson.

1 Some Features of Grounding

Grounding and Explanation

Grounding is explanatory: it pertains to **metaphysical explanation**, i.e. an explanation as to **why the grounded holds**

2 ways to cash out this idea:

Unionism: grounding = metaphysical explanation

- (U) If $(\Gamma < \phi)$, then Γ metaphysically explains ϕ in the fullest and strictest sense, such that there is no explanatory gap between Γ and ϕ . (Fine 2012, 39; see also Rosen 2010, Dasgupta 2014a and Litland forthcoming)

Separatism: grounding *backs* metaphysical explanation

- (S) If $(\Gamma < \phi)$, then Γ **does not** metaphysically explain ϕ . Though, $(\Gamma < \phi)$ **backs** the metaphysical explanation of ϕ . (cf. Rodriguez-Pereyra 2005, Audi 2012, Schaffer 2012, Trogdon 2013)

1 Some Features of Grounding

The Logical Structure of Grounding

Grounding must have the same structural features as **explanation**:

IRREFLEXIVITY

$$\forall x \neg(x < x)$$

(Nothing is a ground of itself.)

ASYMMETRY

$$\forall x \forall y \neg((x < y) \rightarrow (y < x))$$

(If x is a ground of y, y is no ground of x.)

TRANSITIVITY

$$\forall x \forall y \forall z (((x < y) \wedge (y < z)) \rightarrow (x < z))$$

(If x grounds y, and y grounds z, x grounds z.)

FACTICITY

$$\forall x \forall y ((x < y) \rightarrow (x \wedge y))$$

(Grounding connects only true statements/obtaining facts.)

HYPERINTENSIONALITY

$$\forall x \forall y \forall z \neg(((x < y) \wedge \Box(x \leftrightarrow z)) \rightarrow (z < y))$$

$$\forall x \forall y \forall z \neg(((x < y) \wedge \Box(y \leftrightarrow z)) \rightarrow (x < z))$$

(Even if z is nec. equ. with x, z need not be a gr. for y, if x is.)

(Even if z is nec. equ. with y, z need not be gr. in x, if y is.)

1 Some Features of Grounding

The Logical Structure of Grounding

Many proponents of grounding agree on the following:

- (1) Grounding is a **binary** (i.e. 2-place) relation/connection ...
- (2) ... between a (potential) **plurality** of entities (*ground(s)*) ...
- (3) ... and a **single** entity (*grounded entity*).

(Exceptions: Jenkins (2011) and Schaffer(2012) reject (1), Dasgupta (2014b) rejects (3).)

- ‘ $\Gamma < \phi$ ’ is a **grounding claim** or **grounding fact**, in which
- ‘ ϕ ’ is the **grounded entity**, and
- ‘ Γ ’ is its **ground** (where Γ can be *plural*).

1 Some Features of Grounding

The Logical Structure of Grounding

Grounding can be **full** or **partial**:

- That p obtains **and** that q obtains is a **full ground** for $(p \wedge q)$.
- That p obtains is a **partial ground** for $(p \wedge q)$.

Following Fine (2012), we can use ' $<$ ' for full and ' $<$ ' for partial gr.

- $p, q < (p \wedge q)$
- $p < (p \wedge q)$

1 Some Features of Grounding

The Logical Structure of Grounding

Predicationalism (Pr) takes grounding to be a **relation** ...

- among *facts*: $[x_1], [x_2], \dots < [y]$
- or among *propositions*: $\langle x_1 \rangle, \langle x_2 \rangle, \dots < \langle y \rangle$
- or among *objects*: $A_1, A_2, \dots < B$

Operationalism (Op) has it that grounding is a **connective**, connecting *sentential expressions*.

Note that I am going to be sloppy about this and switch between ‘fact-talk’ (gr. as a rel. among facts) and ‘connective talk’ (gr. as a connection between sentences).

1 Some Features of Grounding

Grounding and Fundamentality

- So, grounding is intimately linked to fundamentality.
- Many hold that this is so much so, that the following principle (F) holds:

(F) A fact f is **fundamental** iff it is **ungrounded**;
and f is **non-fundamental** (derivative) iff it is **grounded** (in some other facts f_1-f_n).
- Fundamental facts are those, which are not grounded.
- Non-fundamental facts are those that are grounded.
- So, grounding depicts the **layered structure of reality**.

1 Some Features of Grounding

Grounding and Well-Foundedness

Metaphysical Foundationalism (MF)

Every fact is either fundamental or **grounded** in fundamental facts.

(MF) is the thesis that grounding is **well-founded**.

Well-foundedness (WF)

[\(see also Appendix 1\)](#)

(WF) Every derivative (non-fundamental) fact (DF) is ultimately (fully) grounded in some fundamental fact(s) (FF). (Dixon 2016)

- There must be “a realm of basic facts which provide the ultimate metaph. grounding for all the derivative facts”. (Cameron 2008, 8)
- If we had endless dependence, “being would be infinitely deferred, never achieved”. (Schaffer 2010, 62)

1 Some Features of Grounding

Grounding and Well-Foundedness

- (WF) Every derivative (non-fundamental) fact (DF) is ultimately (fully) grounded in some fundamental fact(s) (FF). (Dixon 2016)
- (WF) is actually **weaker** than the intuitive constraint that there can be no infinitely descending, non-terminating grounding chains. (Dixon 2016, Rabin/Rabern 2016)
 - Yet, (WF) is **entailed by** the no non-terminating grounding chains constraint. (Dixon 2016, Rabin/Rabern 2016)
 - Thus, to show that a theory T is in accord with (WF), it suffices to show that T does not entail a non-terminating grounding chain.

Overview

- (1) Some Features of Grounding ✓
- (2) The Problem of Iterated Ground
- (3) Grounding Essentialism (GE)
- (4) Litland's Zero-Grounding-Account (ZGA)
- (5) (ZGA) and Unionism Are Incompatible
- (6) Does (GE) Make Grounding Ambiguous?
- (7) Summary

2 The Problem of Iterated Ground

Sider (2011) argues for the following principle:

PURITY Fundamental truths only contain fundamental notions.

A **fundamental notion** is a notion that **carves reality at its joints**.

- Grounding claims connect non-fundamental truths with fundamental truths (or less fund. facts with more fund. facts).
- Thus, by **PURITY**, **grounding facts are not fundamental**.
- Remember (F):
A fact f is **fundamental** iff it is **ungrounded**; and f is **non-fundamental** (derivative) iff it is **grounded** (in some facts f_1 - f_n).
- So, by (F), **grounding facts must be grounded**.

2 The Problem of Iterated Ground

But, according to Sider (2011), **grounding facts *cannot* be grounded:**

- If grounding facts are grounded, there will be another grounding fact, which must itself be grounded and so on ... ∞
 - $(\Gamma < \phi)$ is grounded in some fact f_1 .
 - $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
 - $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
 - ... ∞
- Thus, grounding leads to a **vicious infinite regress!**

2 The Problem of Iterated Ground

Bennett (2011) presents Sider's argument in form of a **dilemma**:

- (1) Grounding facts are either fundamental or non-fundamental.
- (2) Grounding facts cannot be fundamental on pain of a violation of PURITY.
- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.
- (4) Thus, grounding can neither be fundamental nor non-fundamental (i.e. grounded).
- (5) Therefore, grounding must be rejected.

2 The Problem of Iterated Ground

Bennett (2011) presents Sider's argument in form of a **dilemma**:

- (1) Grounding facts are either fundamental or non-fundamental.
- (2) Grounding facts cannot be fundamental on pain of a violation of PURITY.
- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.
- (4) Thus, grounding can neither be fundamental nor non-fundamental (i.e. grounded).
- (5) Therefore, grounding must be rejected.

→ (3) is false! The fact that grounding is grounded does not violate the well-foundedness of grounding (Dasgupta 2014a, Dixon 2016, Rabin/Rabern forthcoming)

2 The Problem of Iterated Ground

(3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

Thesis: **(3) is false!** The fact that grounding is grounded does not violate the well-foundedness of grounding. (Dasgupta 2014a, Dixon 2016, Rabin/Rabern forthcoming)

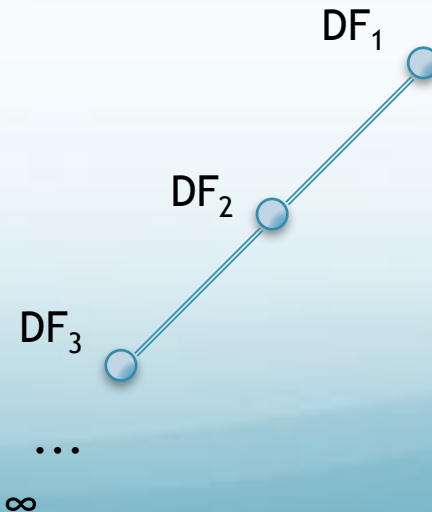
- This can be proved by showing that the claim that grounding is grounded does **not give rise to an infinitely descending chain of grounds.**

2 The Problem of Iterated Ground

- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

Thesis: (3) is false! The fact that grounding is grounded does not violate the well-foundedness of grounding (Dasgupta 2014a, Dixon 2016, Rabin/Rabern forthcoming)

- This can be proved by showing that the claim that grounding is grounded does **not give rise to an infinitely descending chain of grounds.**



2 The Problem of Iterated Ground

- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

How exactly does this infinite regress come about?

If grounding facts are themselves grounded, then every grounding fact produces another grounding fact:

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
- $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
- ... ∞

2 The Problem of Iterated Ground

(3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
- $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
- ... ∞
- This, however, is *not* an infinitely descending, non-terminating grounding chain. (cf. Dasgupta 2014a, 588)
- To be precise, it does not constitute a grounding chain at all. (cf. Rabin/Rabern 2016)

2 The Problem of Iterated Ground

- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.
- $(\Gamma < \phi)$ is grounded in some fact f_1 .
 - $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
 - $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
 - ... ∞
- This infinite series of grounding facts is not subject to chaining!

2 The Problem of Iterated Ground

(3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
- $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
- ... ∞
- This infinite series of grounding facts is not subject to chaining!
- Note that f_2 is not an immediate ground of f_1 and thus f_2 is not a mediate ground of $(\Gamma < \phi)$. Thus, this infinite series does not entail that $(\Gamma < \phi)$ has infinitely many (mediate) grounds.

2 The Problem of Iterated Ground

- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.
- $(\Gamma < \phi)$ is grounded in some fact f_1 .
 - $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
 - $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
 - ... ∞
- This infinite series of grounding facts is not subject to chaining!
 - Nothing in this infinite series precludes the possibility that f_1, f_2, f_3, \dots are all fundamental. Thus the claim that grounding facts are themselves grounded is not at odds with (WF).

2 The Problem of Iterated Ground

(3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
- $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
- ... ∞
- This infinite series of grounding facts is not subject to chaining!
- Therefore the non-fundamentality of grounding is not at odds with the well-foundedness of grounding.
- Thus, Sider's premise (3) is false and the grounding theorist can escape the dilemma.

2 The Problem of Iterated Ground

- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

An infinite series of grounding facts:

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
- $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
- ... ∞

An infinitely descending, non-terminating chain of grounds:

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- f_1 is grounded in some fact f_2 .
- f_2 is grounded in some fact f_3 .
- ... ∞

2 The Problem of Iterated Ground

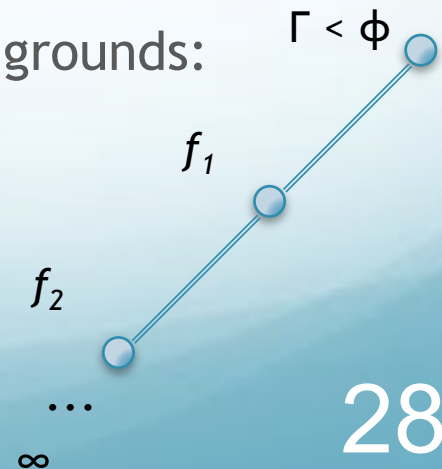
- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

An infinite series of grounding facts:

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
- $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
- ... ∞

An infinitely descending, non-terminating chain of grounds:

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- f_1 is grounded in some fact f_2 .
- f_2 is grounded in some fact f_3 .
- ... ∞

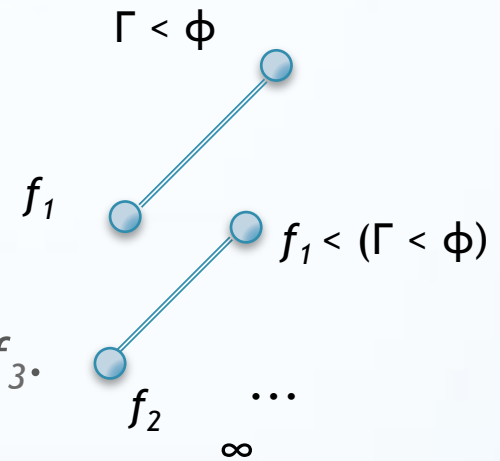


2 The Problem of Iterated Ground

- (3) Grounding facts cannot be non-fundamental on pain of an infinite regress which would violate the well-foundedness of grounding.

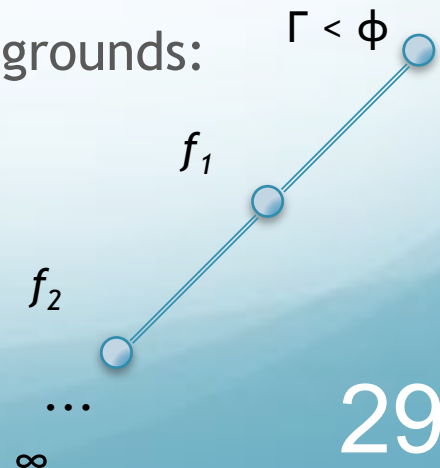
An infinite series of grounding facts:

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- $(f_1 < (\Gamma < \phi))$ is grounded in some fact f_2 .
- $(f_2 < ((f_1 < (\Gamma < \phi))))$ is grounded in some fact f_3 .
- ... ∞



An infinitely descending, non-terminating chain of grounds:

- $(\Gamma < \phi)$ is grounded in some fact f_1 .
- f_1 is grounded in some fact f_2 .
- f_2 is grounded in some fact f_3 .
- ... ∞



Overview

- (1) Some Features of Grounding ✓
- (2) The Problem of Iterated Ground ✓
- (3) Grounding Essentialism (GE)
- (4) Litland's Zero-Grounding-Account (ZGA)
- (5) (ZGA) and Unionism Are Incompatible
- (6) Does (GE) Make Grounding Ambiguous?
- (7) Summary

3 Grounding Essentialism (GE)

- Refuting Sider's objection has shown that **there is no Problem of Iterated Ground**.
- That is to say that taking grounding claims to be grounded does not violate (WF).
- We have not yet answered (MGQ): **What is the ground of grounding claims? In virtue of what do grounding facts hold?**
- I hold that (GE) is an intuitively plausible and natural way to answer (MGQ).

3 Grounding Essentialism (GE)

(MGQ): What grounds grounding facts?
In virtue of what do grounding facts hold?

Natural Answer: Grounding Essentialism (GE)

- (GE) If $(\Gamma < \phi)$, then $(\Gamma < \phi)$ is (at least partially) grounded in the **essential connection between Γ and ϕ** .
- (GE) If $(\Gamma < \phi)$, then $(\Gamma < \phi)$ is (at least partially) grounded in some **essentialist fact f** about Γ or ϕ or both.

Easy example: - Why do p and q , together ground $(p \wedge q)$?
- That lies in the essence of conjunction.

3 Grounding Essentialism (GE)

Take the following example of a grounding claim (cf. Dasgupta 2014a)

(C) [event e contains people engaged in conference-conducive activities (C-activities)] $<$ [e is a conference]

(MGQ) Why is it that [e contains people engaged in C-activities] makes [e is a conference] obtain?

→ A natural answer involves facts about **what it is to be a conference**.

→ It lies in the **essence of being a conference** that e is a conference if e contains people engaged in C-activities.

(GE) If ($\Gamma < \phi$), then ($\Gamma < \phi$) is (at least partially) grounded in the **essential connection between Γ and ϕ** .

3 Grounding Essentialism (GE)

- The **essentialist connection**, in which $(\Gamma < \phi)$ is (partially) grounded, can be expressed by an **essentialist fact** about Γ or ϕ or both.

(GE') If $(\Gamma < \phi)$, then $(\Gamma < \phi)$ is (at least partially) grounded in some **essentialist fact** f about Γ or ϕ or both.

→ [e contains people engaged in C-activities] **grounds** [e is a conference] **because** it is essential to being a conference that if e contains people engaged in C-activities, then e is a conference.

(Rosen 2010, Fine 2010, Dasgupta 2014a discuss versions of (GE) that differ regarding the exact way in which the essential connection is to be spelled out. All three, however agree that the essential connection is part of the essence of that, which is grounded (ϕ .)

Overview

- (1) Some Features of Grounding ✓
- (2) The Problem of Iterated Ground ✓
- (3) Grounding Essentialism (GE) ✓
- (4) Litland's Zero-Grounding-Account (ZGA)
- (5) (ZGA) and Unionism Are Incompatible
- (6) Does (GE) Make Grounding Ambiguous?
- (7) Summary

4 Litland's Zero-Grounding Account (ZGA)

- ‘<’ ... factive ground
- ‘ \Rightarrow ’... non-factive ground
- Litland takes a non-factive notion of ground to be basic.

(ZGA) If $(\Gamma < \phi)$, then $(\Gamma < \phi)$ is grounded in (i) Γ and (ii) $(\Gamma \Rightarrow \phi)$.

$(\Gamma \Rightarrow \phi)$ is *zero-grounded*.

(ZGA) $(\Gamma, \Gamma \Rightarrow \phi) < (\Gamma < \phi)$

$\emptyset < (\Gamma \Rightarrow \phi)$

(ZGA) All non-factive grounding-claims are zero-grounded.

4 Litland's Zero-Grounding Account (ZGA)

2 Questions:

- What is zero-grounding?
- How is it to be made intelligible that all non-factive grounding claims are zero-grounded?

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

2 ways to understand the claim that ϕ is grounded in nothing.

- ϕ is grounded in **nothing** ... ϕ is not grounded at all
- ϕ is grounded in **Nothing** ... ϕ is zero-grounded

Zero-grounding: If ϕ is zero-grounded, then

- (i) ϕ is **grounded** (and thus not fund.)
- (ii) ϕ is **grounded in the empty set of sentences/facts**.

There is a number of sentences/facts in which ϕ is grounded and that number is 0.

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy with sets: (Fine 2012, 47f)

`{ }Set-Builder{ }`

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy with sets: (Fine 2012, 47f)

INPUT (Elements)



{ }Set-Builder{ }



OUTPUT (Set)

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy with sets: (Fine 2012, 47f)

1, 2, 3, ...



{ }Set-Builder{ }



{1, 2, 3, ...}

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy with sets: (Fine 2012, 47f)

Socrates' Nose, Eiffel Tower, Gödel's Incompleteness Theorem



{ }Set-Builder{ }



{Socrates' Nose, Eiffel Tower, Gödel's Incompleteness Theorem}

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy with sets: (Fine 2012, 47f)

NO INPUT



{ }Set-Builder{ }

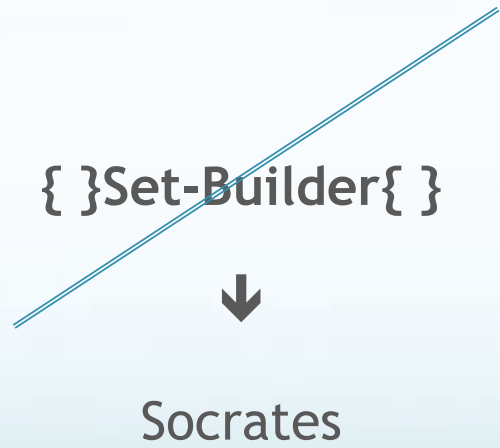


∅

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy with sets: (Fine 2012, 47f)



4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy: The “Grounding Machine” (Litland forthcoming)

“Think of a machine generating truths from other truths. The machine is fed truths, churning out truths grounded in the truths it is fed. A truth is *ungrounded* if the machine never churns it out; a truth is *zero-grounded* if the machine churns it out when it is fed *no* input.” (Litland forthcoming, 8)

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy: The “Grounding Machine” (GM) (Litland forthcoming)

- When the GM is fed truths, it churns out truths that are grounded in the truths it is fed.
- A truth is **ungrounded** if the machine **never** churns it out.
- A truth is **zero-grounded** if the machine churns it out when it is fed **no input**.

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy: The “Grounding Machine” (GM) (Litland forthcoming)

INPUT (Truths/Facts/Statements ϕ_1 - ϕ_n)



<<Grounding Machine<<



OUTPUT (Truths/Facts/Statements grounded in ϕ_1 - ϕ_n)

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy: The “Grounding Machine” (GM) (Litland forthcoming)

p, q



<<Grounding Machine>>



$(p \wedge q)$

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy: The “Grounding Machine” (GM) (Litland forthcoming)

[x is crimson]



<<Grounding Machine<<



[x is red]

4 Litland's Zero-Grounding Account (ZGA)

What is zero-grounding?

Analogy: The “Grounding Machine” (GM) (Litland forthcoming)

NO INPUT



<<Grounding Machine<<



Zero-Grounded Truths

4 Litland's Zero-Grounding Account (ZGA)

All non-factive grounding claims are zero-grounded! (ZGA)

Analogy: The “Grounding Machine” (GM) (Litland forthcoming)

→ Why should the GM churn out $\Gamma \Rightarrow \phi$ when fed no input?

“In terms of this picture, why would the machine give the verdict that $\Gamma \Rightarrow \phi$ is zero-grounded if true? Think of it like this. When the machine is fed no input the machine, instead of remaining idle, ‘simulates’ the results of being fed various input. In simulating what happens when it is fed the propositions Γ the machine proceeds just as it would have if it in fact had been fed Γ as input. If, when running the simulation, the machine churns out ϕ , *the machine ends the simulations and churns out $\Gamma \Rightarrow \phi$* . Since the machine was fed no input this means that $\Gamma \Rightarrow \phi$ is zero-grounded if true.” (Litland forthcoming, 8)

4 Litland's Zero-Grounding Account (ZGA)

All non-factive grounding claims are zero-grounded! (ZGA)

Analogy: The “Grounding Machine” (GM) (Litland forthcoming)

- Why should the GM churn out $\Gamma \Rightarrow \phi$ when fed no input?
- When fed no input the GM simulates being fed input.
 - Eventually the GM simulates being fed Γ .
 - The GM starts a mechanism that operates on Γ and returns ϕ .
 - If the GM is capable of running this simulation, it actually churns out $\Gamma \Rightarrow \phi$ without being fed any input.
 - Thus, $\Gamma \Rightarrow \phi$ is zero-grounded.

4 Litland's Zero-Grounding Account (ZGA)

Explanatory Arguments

- Litland has another way to explicate what zero-grounding is.

(GEA) $\Delta \Rightarrow \phi$ iff there is an **explanatory argument** from Δ to ϕ .

- In terms of the machine picture:

' $\Delta \Rightarrow \phi$ ' refers to the fact that there is a mechanism in the GM that takes Δ and delivers ϕ .

- In terms of explanatory arguments:

' $\Delta \Rightarrow \phi$ ' refers to the fact that there is an explanatory argument from Δ to ϕ .

- ϕ is **zero-grounded** iff there is an explanatory argument from the empty set of premises to ϕ .

Overview

- (1) Some Features of Grounding ✓
- (2) The Problem of Iterated Ground ✓
- (3) Grounding Essentialism (GE) ✓
- (4) Litland's Zero-Grounding-Account (ZGA) ✓
- (5) (ZGA) and Unionism Are Incompatible
- (6) Does (GE) Make Grounding Ambiguous?
- (7) Summary

5 (ZGA) and Unionism Are Incompatible

Objection to a unionist version of (ZGA)

→ All non-factive grounding claims have the same explanation!

$$(1) \phi \Rightarrow (\phi \wedge \phi) \qquad (1^*) \emptyset < (\phi \Rightarrow (\phi \wedge \phi))$$

$$(2) \phi \Rightarrow (\phi \vee \phi) \qquad (2^*) \emptyset < (\phi \Rightarrow (\phi \vee \phi))$$

- According to (ZGA), (1) and (2) have the same ground (\emptyset), i.e. the **same explanation**.
- Intuitively, (1) and (2) should have **different explanations**.
- The explanation of (1) should have to do with what \wedge is.
- The explanation of (2) should have to do with what \vee is.

5 (ZGA) and Unionism Are Incompatible

Litland's reaction to this objection

→ All non-factive grounding claims have the same explanation!

$$(1) \phi \Rightarrow (\phi \wedge \phi)$$

$$(1^*) \emptyset < (\phi \Rightarrow (\phi \wedge \phi))$$

$$(2) \phi \Rightarrow (\phi \vee \phi)$$

$$(2^*) \emptyset < (\phi \Rightarrow (\phi \vee \phi))$$

Litland: This objection is **misguided** → ambiguity of 'explanation':

In one sense (1) and (2) have the same explanation (\emptyset).

In another sense they don't.

(1) and (2) are both zero-grounded, but in a **different way!**

5 (ZGA) and Unionism Are Incompatible

A closer look at Litland's reaction to this objection

- What is this **ambiguity** of 'explanation'?
- Machine-Picture: $(\Delta \Rightarrow \phi)$
- We can either take
 - the input Δ as an explanation for ϕ (**input-explanation**);
 - or the mechanism that operates on Δ and returns ϕ as an explanation for ϕ . (**rule-explanation**)
- Note that the mechanisms in the GM are the metaphysical laws that govern the layered structure of reality.

5 (ZGA) and Unionism Are Incompatible

A closer look at Litland's reaction to this objection

→ All non-factive grounding claims have the same explanation!

$$(1) \phi \Rightarrow (\phi \wedge \phi)$$

$$(1^*) \emptyset < (\phi \Rightarrow (\phi \wedge \phi))$$

$$(2) \phi \Rightarrow (\phi \vee \phi)$$

$$(2^*) \emptyset < (\phi \Rightarrow (\phi \vee \phi))$$

Litland: ambiguity: input-explanation vs. rule-explanation

(1) and (2) have the same input-explanation (\emptyset).

(1) and (2) have different rule-explanations.

hidden assumption: grounding is about input-expl. only.

5 (ZGA) and Unionism Are Incompatible

A critique of Litland's reaction to this objection

Litland: (1) and (2) have the same input-explanation (\emptyset).

- How can there be an input-explanation if there is no input?
- Yet, this might misconstrue zero-grounding, since zero-grounding has it, that if there is no input, the empty input (the zero-ground \emptyset) is the input explanation.
- Thus, we cannot conclude that there is nothing that can serve as the input-explanation of the grounding fact. Rather it is **THE NOTHING** that serves as the input-explanation.
- I contend, however, that **THE NOTHING** cannot satisfactorily explain why a grounding fact holds.

5 (ZGA) and Unionism Are Incompatible

THE NOTHING cannot satisfactorily explain why a gr. fact holds!

- If both (ZGA) and unionism are true, the zero-ground has to strictly and fully metaphysically explain why $\Delta \Rightarrow \phi$ holds.
- According to (ZGA) this means that the zero-ground has to strictly and fully metaphysically explain why there is an explanatory argument from Δ to ϕ .
- I don't see how the empty fact (\emptyset) could achieve that!
- It is much rather the metaphysical laws (the explanatory inferences) involved in this explanatory argument that explain why there is such an explanatory argument.
- I can see, however, how the empty fact (\emptyset) could *back* such a metaphysical explanation, in as much as it refers to the rules that explain the grounding fact.

5 (ZGA) and Unionism Are Incompatible

THE NOTHING cannot satisfactorily explain why a gr. fact holds!

- I contend that (ZGA) is incompatible with unionism.
- The empty fact (\emptyset) is best conceived not to *be* a metaphysical explanation of the grounding fact but to *back* such an explanation.
- Thus, while (ZGA) is implausible against a unionist background, it might be plausible on a **separatist** account.

5 (ZGA) and Unionism Are Incompatible

What about (GE)?

- (GE) takes the **metaphysical laws** that make up the layered structure of the world to be *laws of essence*.
- On (GE) grounding facts are grounded in essentialist facts, that express these laws of essences.
- Thus, (GE) gives a **rule-explanation** of why grounding claims hold.
- That is to say that (GE) gives just that kind of explanation that is intuitively expected from an answer to (MGQ).
- Therefore, **(GE) is compatible with unionism.**

Overview

- (1) Some Features of Grounding ✓
- (2) The Problem of Iterated Ground ✓
- (3) Grounding Essentialism (GE) ✓
- (4) Litland's Zero-Grounding-Account (ZGA) ✓
- (5) (ZGA) and Unionism Are Incompatible ✓
- (6) Does (GE) Make Grounding Ambiguous?
- (7) Summary

6 Does (GE) Make Grounding Ambiguous?

A criticism against (GE) from the viewpoint of (ZGA)

- The criticism against (GE) that I wish to discuss is Litland's reaction, i.e. his retort to the objection voiced against (ZGA) in the beginning of section 5. (**Ambiguity Objection**)
- It should help to rehearse the dialectic once again:
 - (1) One could object to (ZGA) that it assigns the **same explanation** to different grounding claims that, **intuitively**, should have **different explanations**.
 - (2) Litland counters that this **objection is misguided**, since it falls prey to an **ambiguity** of "explanation" and (given unionism) it thus renders grounding ambiguous.

6 Does (GE) Make Grounding Ambiguous?

Litland's retort

- Our intuition that makes us expect a rule-explanation when it comes to the ground of grounding claims is **misguided**.
 - Once we realize that
 - (a) “explanation” is ambiguous (input-expl. vs. rule-expl.); and
 - (b) that grounding only offers input-explanationswe will see
 - (i) how the zero-ground *is* an explanation for a grounding claim
 - (ii) that our initial intuition that made us expect a rule-explanation was wrong.
- I've already argued against (i) (in section 5).
- What is there to say about (ii)?

6 Does (GE) Make Grounding Ambiguous?

Litland's retort

- (b) Grounding offers rule-explanations and rule-explanations only.
- (ii) Thus, our intuition that makes us expect a rule-explanation in the answer to (MGQ) is wrong.

→ What is the rationale for (b)?

- (b) is plausible, since grounding clearly offers **input-explanations** on the **basic (non-meta) level**.
 - $(p \wedge q)$ is grounded in (p, q) , not in the rule of conjunction-introd.!
- Why should this change on the meta-level?

6 Does (GE) Make Grounding Ambiguous?

The Ambiguity-Objection against (a unionist version of) (GE)

- (1) (GE) accepts that gr. offers an input-expl. on the basic level.
- (2) (GE) maintains that grounding should offer a rule-explanation on the meta-level (when it comes to the ground of ground).
- (3) Yet, this renders the notion of grounding **ambiguous**.

→ But is this ambiguity **really problematic**?

→ It is not as if the kind of explanation that grounding offers changes constantly or unpredictably.

→ We have a firm enough intuitive grip on the fact that grounding offers an input-expl. on the basic level and a rule-expl. on every meta-level.

6 Does (GE) Make Grounding Ambiguous?

The dialectic of (ZGA)

- The *zero-ground* is a **theoretical device** conceived to make it possible to offer an input-explanation where a rule-explanation suggests itself.
- That grounding claims are zero-grounded is plausible only on the **assumption** that grounding is to deliver input explanations only.
- That assumption rests on the **Ambiguity Objection**, which I have called in question.

6 Does (GE) Make Grounding Ambiguous?

The dialectic of the debate between (ZGA) and (GE)

- (ZGA)'s being free from ambiguity comes with a **price**: that of being **counterintuitive**.
- (GE)'s sticking with our intuitions also comes with a **price**: that of embracing the shift from input- to rule-explanations in the transition from the first- to the meta-level (**'ambiguity'**).
- I've tried to argue that the embracing 'ambiguity' is not as high a price to pay as judging against our intuitions in these cases.

Overview

- (1) Some Features of Grounding ✓
- (2) The Problem of Iterated Ground ✓
- (3) Grounding Essentialism (GE) ✓
- (4) Litland's Zero-Grounding-Account (ZGA) ✓
- (5) (ZGA) and Unionism Are Incompatible ✓
- (6) Does (GE) Make Grounding Ambiguous? ✓
- (7) Summary

Summary

- Aims:
- (1) (ZGA) is incompatible with unionism.
 - (2) (GE) is compatible with unionism.
 - (3) (GE) can be defended against the Ambiguity Objection

My case for (1)

- It is **implausible** that the zero-ground is a full **metaphysical explanation** of a grounding claim;
- though it is **plausible** that the zero-ground *backs* a metaphysical explanation of a grounding claim.

Summary

- Aims:
- (1) (ZGA) is incompatible with unionism.
 - (2) (GE) is compatible with unionism.
 - (3) (GE) can be defended against the Ambiguity Objection

My case for (2)

- (GE) offers the kind of explanation (**rule-explanation**) that we would **intuitively** expect from an answer to the **Meta-Grounding Question**.

Summary

- Aims:
- (1) (ZGA) is incompatible with unionism.
 - (2) (GE) is compatible with unionism.
 - (3) (GE) can be defended against the Ambiguity Objection

My case for (3)

- The kind of ambiguity grounding is charged with on (a unionist version of) (GE) is **not problematic** since we have a firm enough intuitive grip on the **systematicity** behind it.
- Therefore **embracing this ambiguity** it is **not as high a price** to pay as being counterintuitive, which is the price of a unionist version of (ZGA).

Overview

- (1) Some Features of Grounding ✓
- (2) The Problem of Iterated Ground ✓
- (3) Grounding Essentialism (GE) ✓
- (4) Litland's Zero-Grounding-Account (ZGA) ✓
- (5) (ZGA) and Unionism Are Incompatible ✓
- (6) Does (GE) Make Grounding Ambiguous? ✓
- (7) Summary ✓

Literature

- Audi, P. (2012a): “A clarification and defense of the notion of grounding”, in: Correia/Schnieder (2012a), 101-121.
- (2012b): “Grounding: Toward a Theory of the In-virtue-of Relation”, in: *Journal of Philosophy*, 109 (12), 685-711.
- Beebe, H./Dodd, J. (eds.) (2005): *Truthmakers: The Contemporary Debate*. Oxford: OUP.
- Bliss, R./Trogon, K. (2016): “Metaphysical Grounding”, in: Zalta, E. N. (ed.): *The Stanford Encyclopedia of Philosophy (Spring 2016 Edition)*.
<http://plato.stanford.edu/archives/spr2016/entries/grounding/>,
(accessed 10/09/2016).
- Cameron, R. (2008): “Turtles all the way down: regress, priority and fundamentality”, in: *Philosophical Quarterly*, 58 (230), 1–14.
- Chalmers, D./Manley, D./Wasserman, R. (eds.) (2009): *Metametaphysics. New Essays on the Foundation of Ontology*. Oxford: Clarendon Press.
- Correia, F./Schnieder, B. (eds.) (2012a): *Metaphysical Grounding: Understanding the Structure of Reality*. Cambridge: CUP.
- (2012b): “Grounding: an opinionated introduction”, in: Correia/Schnieder (2012a), 1-36.
- Dasgupta, S. (2014a): “The Possibility of Physicalism”, in: *Journal of Philosophy*, 111 (9/10), 557-592.
- (2014b): “On the Plurality of Grounds”, in: *Philosopher’s Imprint*, 14, 1-28.

Literature

- Dixon, S. (2016): “What is the Well-Foundedness of Grounding?”, in: *Mind*, 125 (498), 375-389.
- deRosset, L. (2013): “Grounding Explanations”, in: *Philosopher’s Imprint*, 13 (7), 1-26.
- Fine, K. (2012): “Guide to Ground”, in: Correia/Schnieder (2012a), 37-80.
- (2015): “Unified Foundations for Essence and Ground”, in: *Journal of the American Philosophical Association*, 1 (2), 296-311.
- Hoeltje, M./Schnieder, B./Steinberg, A. (eds.) (2013): *Varieties of Dependence: Ontological Dependence, Grounding, Supervenience, Response-Dependence*. München: Philosophia.
- Jenkins, C. (2011): “Is Metaphysical Dependence Irreflexive?”, in: *The Monist*, 94 (2), 267-276.
- Koslicki, K. (2013): “Ontological Dependence. An Opinionated Survey”, in: Hoeltje/Schnieder/Steinberg (2013), 31-64.
- (2015): “The coarse-grainedness of grounding” in: Bennett, K./Zimmerman, D. (eds.): *Oxford Studies in Metaphysics*. Vol. 9. Oxford: OUP, 306-344.
- Litland, J. E. (forthcoming): “Grounding Ground”, in: Bennet, K./Zimmerman, D. (eds.): *Oxford Studies in Metaphysics*. Oxford: OUP.
- Lowe, E. J. (1998): *The Possibility of Metaphysics*. Oxford: OUP.

Literature

- McLaughlin, B./Bennett, K. (2014): “Supervenience”, in: Zalta, E. N. (ed.): *The Stanford Encyclopedia of Philosophy (Spring 2014 Edition)*.
<http://plato.stanford.edu/archives/spr2014/entries/supervenience/>,
(accessed: Nov. 10, 2016).
- Rabin, G. O./Rabern, B. (2016): “Well Founding Grounding Grounding”, in: *Journal of Philosophical Logic*, 45 (4), 349-379.
- Rodriguez-Pereyra, G. (2005): “Why Truthmakers?”, in: Beebe/Dodd (2005), 17-31.
- Rosen, G. (2010): “Metaphysical Dependence: Grounding and Reduction”, in: Hale/Hoffman (2010), 109-135.
- Schaffer, J. (2009): “On What Grounds What”, in: Chalmers/Manley/Wasserman (2009), 347-383.
- (2010): “Monism: The Priority of the Whole”, in: *Philosophical Review*, 119 (1), 31-76.
- (2012): “Grounding, Transitivity, and Contrastivity”, in: Correia/Schnieder (2012a), 122-138.
- (2016): “Grounding in the image of causation”, in: *Philosophical Studies*, 173, 49-100.
- Schnieder, B. (2015): “The Asymmetry of ‘Because’”, in: *Grazer Philosophische Studien*, 91, 131-164.
- Sider, T. (2011): *Writing the Book of the World*. Oxford: OUP.

Appendix 1: Well-Foundedness of Grounding

(MF) is the thesis that grounding is/should be well-founded.

- Intuitively, well-foundedness is the constraint there can be **no infinitely descending, non-terminating grounding chains**.
- There must be “a realm of basic facts which provide the ultimate metaph. grounding for all the derivative facts”. (Cameron 2008, 8)
- If we had endless dependence, “being would be infinitely deferred, never achieved”. (Schaffer 2010, 62)
- Analogy: Epistemic Foundationalism: If justification is endless nothing is justified.

An infinitely descending grounding chain

- g is grounded in f_1 is grounded in f_2 is grounded in $f_3 \dots \infty$

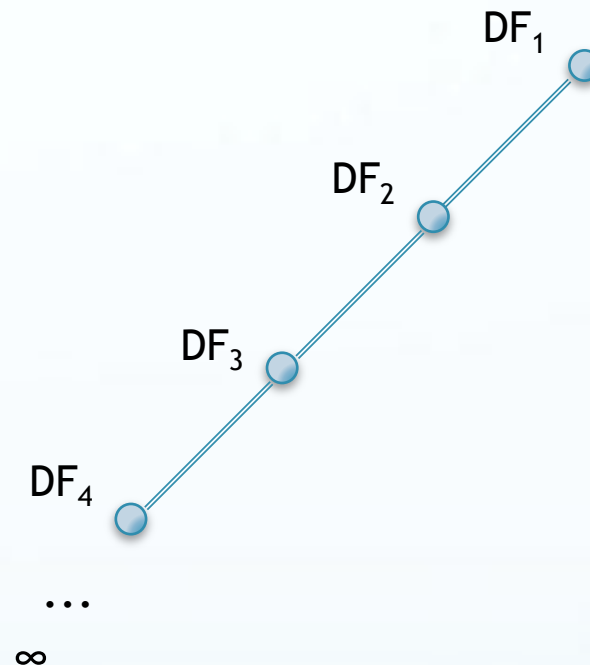
Appendix 1: Well-Foundedness of Grounding

Different versions of well-foundedness

- At least 3 different versions of well-foundedness (WF_1 , WF_2 , WF_3) can be distinguished.
- These versions differ in strength.
- Dixon (2016) and Rabin/Rabern (2016) argue that (WF_3) is the most adequate version of well-foundedness.
- (WF_1) entails (WF_2) entails (WF_3), but not *vice versa*.
- To show that a theory T is in accord with (WF_3), it suffices to show that T is in accord with (WF_1). (see *Refutation of Sider's Argument*)
- But if T violates (WF_1), it need not therefore violate (WF_3).

Appendix 1: Well-Foundedness of Grounding

Infinately descending grounding chains

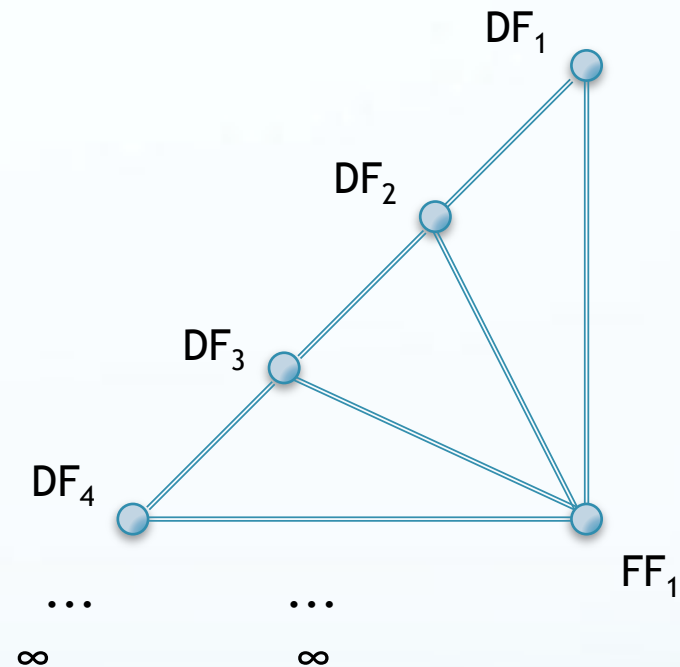


(WF₁) There are no infinitely descending grounding chains.

(cf. Dixon 2016 and Rabin/Rabern 2016)

Appendix 1: Well-Foundedness of Grounding

Inf. descending gr. chains with a lower bound

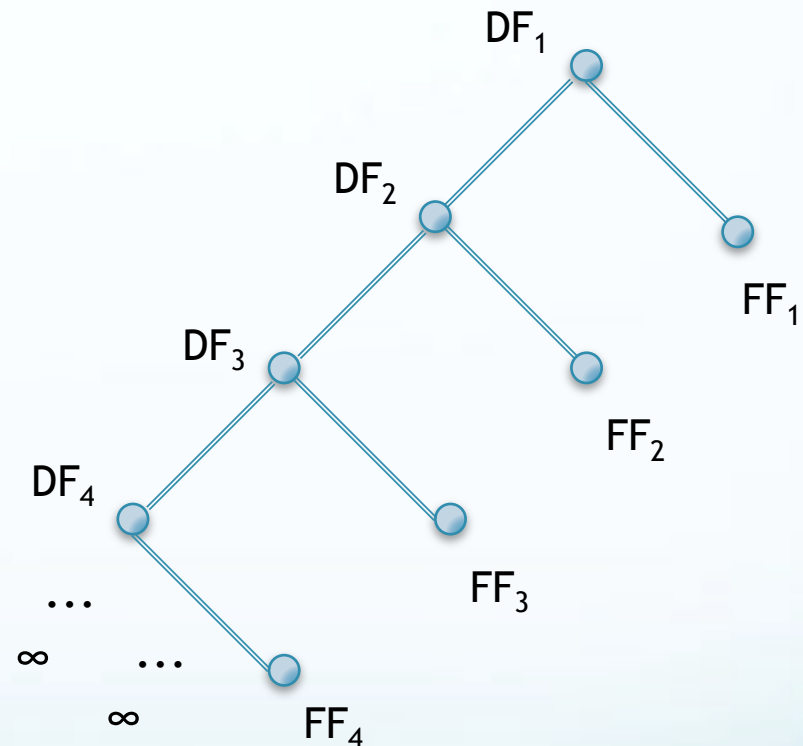


(WF₂) There are no infinitely descending grounding chains without a lower bound.

(cf. Dixon 2016 and Rabin/Rabern 2016)

Appendix 1: Well-Foundedness of Grounding

Inf. descending gr. chains with a foundation



(WF₃) There are no infinitely descending grounding chains without a foundation.

(cf. Dixon 2016 and Rabin/Rabern 2016)

Appendix 1: Well-Foundedness of Grounding

Different versions of well-foundedness

- Remember: (WF_1) entails (WF_2) entails (WF_3) , but not *vice versa*.

(WF_3) Every non-fundamental fact x is fully grounded in some fundamental facts Γ . (Dixon 2016)

- To show that a theory T is in accord with (WF_3) , it suffices to show that T is in accord with (WF_1) . (see Appendix 2)
- But if T violates (WF_1) , it need not therefore violate (WF_3) .

Appendix 2: Brute Essentialism (BE)

- According to (GE), grounding facts are gr. in essentialist facts.
- Yet, what grounds these essentialist facts?
- Here is Dasgupta's (2014a) answers: “brute essentialism” (BE)).

(BE) If $(\Gamma < \phi)$, then $(\Gamma < \phi)$ is (at least partially) grounded in some **essentialist fact f** about ϕ .

This essentialist fact f , is itself **ungrounded**.

Why believe (BE)? Why take f to be ungrounded?

Dasgupta argues for (BE) by

- a) analogy and an
- b) example

Appendix 2: Brute Essentialism (BE)

Dasgupta's (2014a) "Brute Essentialism" (BE)

a) Analogy with formal systems (like axiomatic set theory)

A formal system comprises:

axioms	~ fundamental facts (FF)
theorems	~ derivative facts (DF)
definitions	~ essentialist facts (EF)

Theorems can be proven from axioms. ~ DF are grounded in FF.

Is x an alleged axiom redundant? ~ Is an alleged FF not fund.?

Def. are not apt for being proved. ~ EF are not apt for being grounded.

Appendix 2: Brute Essentialism (BE)

Dasgupta's (2014a) "Brute Essentialism" (BE)

b) Example of an essentialist fact

(Soc) Being the unique singleton containing Socrates (BUSCS) is essential to {Socrates} .

(GQ_{Soc}) What grounds (Soc)?

Dasgupta: **(GQ_{Soc}) cannot legitimately be asked.**

(GQ_{Soc}) In virtue of what does BUSCS define what {Socrates} is?

We could only answer: "That is just what {Socrates} is."

But this is what (Soc) says anyway.

The only answer to (GQ_{Soc}) could be (Soc), which makes (GQ_{Soc}) odd

Appendix 2: Brute Essentialism (BE)

Dasgupta's (2014a) "Brute Essentialism" (BE)

- The question of what grounds an essentialist fact cannot legitimately be raised.
- Thus, essentialist facts are not apt for being grounded in the first place.
- Thus, essentialist facts are ungrounded.

Appendix 2: Brute Essentialism (BE)

(2) Plausibility of of (BE)

Dasgupta's tripartite structure of facts:

Derivative facts are apt for being grounded and do have a ground.

Fundamental facts are apt for being grounded but have no ground.

Autonomous facts are not apt for being grounded in the first place.

Appendix 2: Brute Essentialism (BE)

(2) Plausibility of of (BE): Dasgupta's argument in a nutshell:

- (1) A grounding question ('what grounds [x]?') is odd, if its answer (the ground of [x]) could only be [x].
- (2) Autonomous facts are not apt for being grounded (& thus ungrounded).
- (3) If the grounding question 'what grounds [x]?' is odd, [x] is autonomous.
- (4) The answer to the grounding question 'What grounds an essentialist fact [f]?' could only be [f].
- (5) Thus, the question in (4) is odd. (from 3, 4)
- (6) Thus, [f] is autonomous. (from 1, 5)
- (7) Thus, [f] is not apt for being grounded (and thus ungrounded). (from 2, 6)

Appendix 2: Brute Essentialism (BE)

- (4) The answer to the grounding question ‘What grounds an essentialist fact $[f]$?’ could only be $[f]$.

Dasgupta appeals to the intuitive illegitimacy of the question in (4):

For if asked why that condition defines $\{Socrates\}$, one wants to reply: “What do you mean? That is *just what* $\{Socrates\}$ *is*.” But of course that is precisely what we were asked to explain! On the face of it, this reply sounds like the beginnings of an attempt to show that the question is somehow illegitimate, rather than an attempt to answer it in any seriousness. (Dasgupta 2014a, 579)

Appendix 2: Brute Essentialism (BE)

(4) The answer to the grounding question ‘What grounds an essentialist fact $[f]$?’ could only be $[f]$.

- For every essential condition EC defining an entity e (i.e. for every essentialist fact $[f]$):
- Being asked why EC defines e (i.e. why the essentialist fact $[f]$ holds), we could only answer:
- ‘ EC just is what e is!’ (i.e. ‘ $[f]$ ’)
- But this is what we were asked to explain. (Circular Answer!)
- Thus, essentialist facts are not apt to be explained/grounded.
- Thus, essentialist facts are autonomous and thus ungrounded.