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According to an influential view in the debate on grounding and essence, there cannot be any cases of 'upwards essence', i.e., cases in which a grounding connection flows from the essence of the grounding truth or constituents of it. To use the Finean (2012) slogan, "it is the fact to be grounded that 'points' to its grounds and not the grounds that point to what they may ground". This paper argues to the contrary. Far from being outright incoherent, potential cases of upwards essence abound. The arguments that have been raised against upwards essence or naturally come to mind turn out to be wanting on closer examination. And we can even derive the existence of certain cases of upwards essence from fairly innocuous general principles.

1 Introduction

Grounding and essence are two key phenomena of the hyperintensional turn in metaphysics in recent decades. Both grounding and essence limn the metaphysical structure of the world. But they do not do so individually, but rather work hand in hand, or so many philosophers think. In particular, on a popular view, essence 'underlies' at least some cases of grounding: the grounding is 'backed' by essential connections that match the grounding connections (Dasgupta 2016, Fine 2012a, Rosen 2010, Trogdon 2013). And indeed, it is not hard to come by with examples of cases in which grounding-connections go together with corresponding essential connections. For instance, plausibly, the fact that Socrates exists grounds the fact that his singleton exists, while it is essential to Socrates's singleton that if Socrates exists, so does his singleton. The fact that

grass is green or snow is purple is grounded in the fact that grass is green, while it is essential to the fact that grass is green or snow is purple that it be grounded in the fact that grass is green if this fact obtains. And the fact that my table is square is jointly grounded in the fact that the table is rectangular and the fact that the table is equilateral, while it is essential to being square that one is square if one is rectangular plus one is equilateral. In all of these cases, a possibly generalized version of the grounding connection, or a corresponding material conditional, pertains to essence of entities involved in the grounding-cases.

And in fact, the example cases match an even more specific pattern: in all of them, the essential connections pertain to the *grounded* fact or constituents of it, rather than the *grounding* fact or constituents of it. The essences are, we may say, *downwards*, rather than *upwards* essences. And in none of the cases, it would be plausible to claim that there are upwards-directed essence facts in addition to the downwards-directed ones. Thus, Socrates, the fact that Socrates exists, and the property of existing do not bear any essential connections to Socrates's singleton set. Likewise, the essence of the fact of grass's being green, the essence of the property of being green and the essence of the natural kind of grass 'know nothing' about snow's being purple. And neither do the essences of the fact that the table is rectangular, of the fact that it is equilateral, of the property of being rectangular, of the property of being equilateral, or of the table, know anything about squareness. We may thus wonder: Is this a pattern that holds in full generality? That is: If an essential connection matches a grounding-connection, is it always the case that the essence pertains exclusively to the essence of the grounded fact or constituents of it, rather than the grounding fact or constituents of it?

According to an influential view in the debate on grounding, the answer is 'yes': there cannot be any cases of upwards essence. Kit Fine provides the most prominent endorsement of the view in a passage of 'Guide to Ground' (Fine 2012a, p. 76), giving it its slogan:

> 'It is the fact to be grounded that 'points' to its grounds and not the grounds that point to what they may ground'.

The fate of upwards essence has a bearing on various debates in philosophy. The doctrine that upwards essence is impossible has been used to discredit specific first-order views in metaphysics, such as dispositional essentialism (Coates 2022, Jaag 2014, Tugby 2022), as well as a certain type of an essentialist account of modality (Romero forthcoming). And, indeed, as we shall see in section 3, many more first-order theories would be threatened if upwards essences were impossible. On the other hand, the non-existence of upwards essence is arguably a precondition for the tenability of some reductions of grounding to essence (cf. Carnino 2014, Correia 2013,

Zylstra 2019), on pain of leading to violations of the asymmetry of ground. Moreover, as Fine argues, the question of whether there can be cases of upwards essence may also have a bearing on wider philosophical methodology. For if there are only cases of downwards, but not of upwards essence, grounding-relationships may be, as Fine puts it, discovered by investigating the essences of the (items present in) the groundees, but not the (items present in) the grounds. And thus, 'the asymmetry supports a top-down approach in which we start with the facts to be grounded and work our way down to their grounds, rather than the other way round' (2012, p. 76).

The aim of this paper is to make a case for upwards essence. I will defend the coherence, and, indeed, the existence of upwards essence. Far from being outright incoherent, candidate cases of upwards essence abound. The arguments that have been sketched against upwards essence in the literature or that naturally come to mind turn out to be wanting on closer examination. And we can even derive the existence of certain types of upwards essence from fairly innocuous principles.

My discussion will proceed within a higher-order framework, in which variables/quantifiers/ predicates stand in for/range over/apply to expressions of all syntactic types. Opting for this framework will allow me to avoid various complications and artificialities that would come with a precise regimentation within the common first-order framework, and to draw on extant formal work in higher-order metaphysics. Moreover, in my discussion, I will focus on essence in the wide sense of mediate, consequentialist essence, leaving the fate of upwards essence in more restricted senses of essence for further work. I start with a sketch of the higher-order framework (§2). I then offer various potential example cases of upwards essence (§3). I go on to to clarify the landscape of upwards essence, distinguishing between different types of upwards essence and investigating their inferential connections (§4). Next, I discuss three objections against upwards essence and argue that all of them can be diffused (§5). Finally, I show that we can derive the existence of at least certain types of upwards essence for logical grounding from general principles (§6), and end with some concluding remarks and questions for further research (§7).

2 The higher-order framework

In common first-order languages, variables exclusively occupy the position of singular terms, quantifiers exclusively bind such first-order variables, and relational and monadic predicates

apply (at least typically) only to singular terms.[1] Higher-order languages drop this special role of singular terms: For all syntactic types, there are variables that replace expressions of these types, quantifiers that bind these variables, and predicates that apply to expressions of these types. For instance, we may form sentences such as:

$\exists p\,(\text{Believes}(\text{Alice}, p) \wedge p)$.
$\exists X(X(\text{Bob}) \wedge \neg X(\text{Charlie}))$.
$\exists X(X(\text{is crimson}) \wedge X(\text{is maroon}))$.

These sentences can be given the glosses 'Alice believes something that is true', 'Bob is somehow such that Charlie is not that way', and 'there is some way such that being crimson and being maroon are both in this way' in English. But these sentences are merely rough approximations of the formal claims. Since English, and other natural languages, contain only very limited higher-order resources, we often need to resort to non-fully perspicuous first-order formulations—such as the 'ways'-idiom, nominalizations, or talk of properties/facts/entities—to 'hint at' the intended higher-order claims.

In this paper, I will adopt a higher-order plural logic with λ-abstraction as my background logic.[2] In addition to higher-order variables and quantifiers, I will also make use of further bits of higher-order ideology: higher-order notions of identity, grounding, essence, and essential dependence. While I will continue to often use 'reified' first-order glosses, such glosses are merely means to convey the real higher-order claims.

Let me say a bit more on the bits of the framework, starting with the case of λ-abstraction. λ-terms are expressions of the form '$\lambda x_1, x_2, ...x_n.\phi$', which can be given glosses of the form 'the x_i are such that ϕ' in natural language. We say that two formulas are 'β-corresponding' if they differ exclusively with regard to an application of λ-abstraction somewhere in the formula. To give an example, the two sentences 'the table is rectangular and the table is equilateral' and 'the table is such that it is rectangular and it is equilateral' are β-corresponding.[3] Getting a bit more precise, claims of β-correspondence can be officially expressed in terms of a sentential

[1] The border between first-order and higher-order frameworks is arguably somewhat unclear, and the talk of 'higher-order frameworks' is used somewhat differently by different authors. One unclear case, for instance, would be that of modal operators, construed as predicates of sentences. Some authors might be inclined to conceive of them as higher-order machinery, others not.

[2] Strictly speaking, more features of the language would need to be specified, such as, in particular, the way in which the language is typed. But these matters will not make a difference in the context of this paper, and I will thus leave them open here.

[3] Note that, by contrast, the sentences 'the table is rectangular' and 'the chair is such that the table is rectangular' are *not* β-corresponding. β-correspondence as understood here thus corresponds to what some authors call *non-vacuous* β-correspondence.

operator '$\sim_\beta$', defined as follows:

> $\phi \sim_\beta \phi^*$ iff$_{\text{def}}$ ϕ^* is derived from ϕ by replacing one constituent of the form $(\lambda v_1, ...v_n.\psi)(t_1, ... t_n)$ with $\psi[t_i/v_i]$,
>
> where $t_1, ...t_n$ are terms ψ, $v_1, ...v_n$ are distinct variables that occur free in ψ, and $\psi[t_i/v_i]$ is a sentence that results from replacing each free occurrence of an v_j in ψ with the corresponding t_j, replacing bound variables in such a way that no free variables become bound.

A core principle for reasoning with λ-abstraction, that is fairly widely accepted, is the material equivalence of β-corresponding formulas:

> β-Conversion: If $\phi \sim_\beta \phi^*$, then $\phi \leftrightarrow \phi^*$.

I will also assume β-Conversion as part of my background logic in this paper.[4]

In contrast to the first-order identity predicate, which can exclusively be flanked by singular terms, the higher-order identity predicate can be flanked by expressions of arbitrary syntactical categories: formulas, first-order predicates, second-order predicates (i.e., predicates of predicates), sentence-operators (i.e., predicates of sentences), etc.[5] We can thus form sentences such as:

(1) The Mediterranean Sea is filled with water = The Mediterranean Sea is filled with H_2O.
For the Mediterranean Sea to be filled with water just is for the Mediterranean Sea to be filled with H_2O.

(2) filled with water = filled with H_2O.
To be filled with water just is to be filled with H_2O.

Higher-order identity shares important features with first-order identity, and, in particular, obeys the following (schematic) principles:

> Reflexivity$_=$: $a = a$.
> Transitivity$_=$: If $a = b$ and $b = c$, then $a = c$.
> Symmetry$_=$: If $a = b$, then $b = a$.

[4] See e.g. Dorr 2016 and Goodman 2024 for a defense of β-Conversion.

[5] For more on generalized identity, see Dorr 2016, Linnebo 2014, and Rayo 2013. Strictly speaking, for any syntactic type, there is a separate identity predicate that is flanked by expressions of that type on both sides. Since this complication has no bearing on the matters in this paper, I will simply use the expression '=' for all these predicates here. The same holds for the operators for essence and essential dependence that will be introduced later on.

Moreover, just like first-order identity, higher-order identity marks, so to speak, the border of worldliness: any differences between higher-order identical 'entities' is a purely representational difference. Thus, any two sentences ϕ and ψ such that $\phi = \psi$ demand precisely the same of reality, only under different representational guises. And any two predicates 'F' and 'G ' such that $F = G$ demand precisely the same of entities to fall under them, only under different representational guises. Standard linguistic contexts are transparent in the sense that merely representational differences do not matter in them, and we can thus replace any expressions x and y such that $x = y$ *salva veritate*. That is, Leibniz's Law holds in them:

> Leibniz's Law: If $x = y$ and ϕ, then $\phi[x/y]$,
>
> where $\phi[x/y]$ results from sentence ϕ by replacing one or more occurrences of x by y, with the condition that no variable that is free in $x = y$ is bound in ϕ or $\phi[x/y]$.

Paradigm examples for opaque contexts in which Leibniz's Law fails to hold, by contrast, are belief-ascriptions and quotation contexts.

In the higher-order framework, grounding-claims are naturally expressed by means of a sentential operator '$<$', which is flanked by one or multiple sentences on the left side, and by one sentence on the right-hand side. For instance, we may have:

(3) Grass is green, snow is white $<$ Grass is green $\wedge$ snow is white.
Grass is green and snow is white because grass is green, snow is white.

I will work with the common factive notion of grounding in this paper, viz., one on which for a grounding-claim to be true, all the grounds and groundees need to obtain. A crucial choice-point in formal theorizing about grounding concerns the question of whether one takes grounding contexts to be transparent or opaque, i.e., whether one maintains that Leibniz's Law applies within the scope of the grounding-operator or not. So-called *worldly conceptions* of grounding maintain that grounding-contexts are transparent, whereas so-called *representational* conceptions maintain that they are opaque.[6] Thus, whereas on worldly conceptions, grounding is purely sensitive to how the world is like, on representational conceptions, it is also sensitive to our representational guises. In this paper, I will assume a worldly conception of grounding. This conception is arguably congenial to a key theoretical role that grounding was introduced to play: to give rise to a hierarchical structure of reality in itself, independent of our representational

[6] Worldly accounts of grounding include those in Audi 2012ab; Correia 2010, forthcoming; Correia and Skiles 2019; Fine 2012ab (semantic side), 2017a; and Lovett 2020. Representational accounts of grounding include those in Correia 2017ab, 2018; deRosset and Fine 2022; Fine 2012ab (proof-theoretic side); Krämer 2018, 2019; Rosen 2010; and Schnieder 2010.

guises.[7] Moreover, the representational conception of grounding is notoriously subject to various puzzles of ground, showing that individually plausible representational grounding claims are jointly inconsistent behind the background of common, broadly logical assumptions. The worldly conception, by contrast, evades all of these puzzles (provided that the underlying notion of sentential identity is assumed to be not overly fine-grained).[8]

Finally, let us turn to the notion of essence. In first-order frameworks, only (pluralities of) objects (in the sense of anything that is designated by a singular term) may the bearers of essence. Essence-claims are formalized by means of the $\Box_{\cdot}$-operator, which takes one or multiple singular terms as the input in the index, and a sentence as the input for the prejacent. For instance, we may have:

(4) $\Box_{\{\text{Socrates}\}}$ (Socrates $\in$ {Socrates}).
It is essential to {Socrates} that it contain Socrates.

In the higher-order case, it is natural to widen the notion of essence, allowing for (finite pluralities of) 'entities' of any 'category' to be the bearers of essence.[9] Thus, we may allow for finite pluralities of expressions of any syntactic type in the subscript of the essence-operator, forming claims such as:

(5) $\Box_{\text{Socrates is human}}$ (Socrates is human $\rightarrow$ Socrates is rational).
It is essential to Socrates' being human that if Socrates is human then Socrates is rational.

(6) $\Box_{\text{is human}}$ $\forall x$ (x is human $\rightarrow$ x is rational).
Being human essentially implies being rational.

The notion of essence is closely tied to that of essential dependence. Essential dependence relates essence-bearers to what is 'involved' in their essences: the a_i depend on b iff for some p, $\Box_{a_1,a_2,\ldots}\ \phi$ holds and b 'occurs' in ϕ, or, in other words 'is a constituent of' ϕ. For instance, given claim (4), {Socrates} depends on Socrates, as well as on itself. One option is to take the notion of 'occurring in' as a primitive. Alternatively, in the presence β-Conversion, and assuming that Leibniz's Law applies within the scope of the essence-operator (more on this assumption in short), we can define the notion as follows:

[7] See e.g. Correia 2010 and Krämer and Roski 2015 for this point.

[8] See e.g. Fine 2010; Fritz 2021, Fritz 2020; Krämer 2013 on the puzzles. See Correia forthcoming for arguments that, given plausible assumptions about sentential identity which limit the fineness of grain of grounding, the worldly conception of grounding is immune to the puzzles.

[9] The restriction to finite pluralities is done since pluralities that involve infinite amounts of types may create problems. The restriction adopted here is more restrictive than needed, but the formally simplest way of ruling out such cases.

$bO\phi$ iff_{def} $\exists X(\phi = Xb)$.
b occurs in ϕ iff for some X, for ϕ to be the case just is for b to be X.

In the first-order case, essential dependence relates exclusively objects. In the higher-order case, by contrast, the restriction to objects is naturally given up: essential dependence relates 'entities' of all 'categories', and even applies cross-categorically (cf. Ditter 2022). Following this thought, we can express claims of essential dependence by means of the operator '$\rhd$', which may be flanked by a finite plurality of expressions of any types on the left-hand side, and an expression of any type on the right-hand side. Let us use expressions such as '$\bar{a}$' as symbols for finite pluralities. Essential dependence can then be defined as follows:

$\bar{a} \rhd b$ iff_{def} $\exists p(\Box_{\bar{a}} p \wedge bOp)$.
The $\bar{a}$ depend on b iff_{def} for some p, it is essential to the $\bar{a}$ that p, and b occurs in p.

Given claims (4)-(6), we get, amongst others, the following dependence claims:

Socrates is human $\rhd$ Socrates is rational; Socrates is human $\rhd$ Socrates is human; Socrates is human $\rhd$ Socrates; is human $\rhd$ is rational; is human $\rhd$ is human; is human $\rhd \rightarrow$.

In parallel to the case of grounding, an important choice-point in formal theorizing about essence concerns the question of whether one takes essence to be transparent or opaque, i.e., whether one takes Leibniz's Law to apply in the index and the prejacent of the essence-operator or not. To my knowledge, this question has not received much explicit discussion in the literature yet. Both Fine's (1995b, 1995a) influential account and the only worked-out higher-order account of essence at this point, due to Andreas Ditter (2022), have it that essence is transparent, however. In this paper, I will also tentatively adopt the assumption that essence is transparent.[10]

In addition to the matter of transparency, further choice-points regarding the closure conditions of essence arise: first, on whether we work with a mediate or an immediate notion of essence, and second, on whether we work with a consequentialist or a constitutive notion (cf. Fine 1994). In this paper, I will work with the wide notion of mediate consequentialist essence, again following the works of Fine and Ditter.[11] While it would be an interesting question of how the discussion

[10] One substantial technical advantage of this assumption is, in particular, that it allows us to give a simple definition of essential dependence in higher-order terms, as we have seen earlier. If we do not make this assumption, by contrast, we need to take the notion as a primitive.

[11] One reason for this choice is that, as Fine argues, intuitions about whether something belongs to the constitutive immediate essence of an entity, or merely to its consequentialist mediate essence are quite elusive. And the problem gets arguably even worse in the higher-order case, since here, the class of essence-bearers is wider. Moreover, whereas in the case of consequentialist mediate essence, we can draw on precise proposals for the relevant closure conditions from the literature, there have been no systematic discussions for the case of

in this paper would work out on more narrow notions of essence, I will have to leave this question for further work. The adoption of a mediate notion of essence corresponds to maintaining that 'entities' inherit essence from entities that they depend upon. This principle can be regimented as follows (letting '$\bar{a} \rhd \bar{b}$' stand shorthand for the claim that, for all the b among $\bar{b}$, $\bar{a} \rhd b$):

INHERITANCE: If $\bar{a} \rhd \bar{b}$ and $\Box_{\bar{b}}\phi$, then $\Box_{\bar{a}}\phi$.

The adoption of a consequentialist notion corresponds to maintaining that essence is closed under a certain restricted form of logical consequence that does not bring in any relevant 'new material', thus incurring no additional dependencies. In the first-order case, essential dependence relates purely objects, and thus the relevant material consists in first-order constants and first-order unbound variables. In the higher-order case, by contrast, essential dependence relates entities of all 'categories', and therefore constants and unbound variables of any syntactic type—including logical ones—are relevant (cf. Ditter 2022). Let '$\vdash$' stand for logical consequence in our background logic, that is, in higher-order plural logic with constants, identity, and λ-abstraction. Then, we can spell out the relevant closure-principle as follows:

LOGICAL CLOSURE: If (i) $\Box_{\bar{a}}\phi_1, \Box_{\bar{a}}\phi_2, ...$, (ii) $\phi_1, \phi_2, ... \vdash \psi$, and (iii) ψ contains no constants or unbound variables that are not present in any of the ϕ_i, then $\Box_{\bar{a}}\psi$.

We will encounter some further principles governing higher-order identity, grounding, and essence in later sections of the paper, when they will become directly relevant. The framework as presented in this section, however, already provides us with the core elements of the underlying theory in which we will investigate the question of upwards essence—to which I will turn now.

3 Candidate cases of upwards essence

This section provides a variety of candidate examples cases of upwards essence. While some of the cases concern specific philosophical theories, others concern plausible regimentations of generally countenanced phenomena. Some of the examples are new, whereas others have been already discussed in the literature as potential cases of upwards essence—either with the aim of arguing against the relevant first-order views (the cases of Dispositional Essentialism and Non-Reductive Essentialism below), or with the aim of arguing for the possibility of upwards essence (the case of Determinables and Determinates below). Moreover, in analogy to the case of downwards essence alluded to in the introduction, there are various types of upwards essence, which differ

constitutive immediate essence yet.

along two dimensions: first, on whether they feature *grounding-claims or material conditionals* in the essences, and, second, on whether *the connections themselves pertain to the grounds, or possibly generalized versions thereof to constituents of the grounds.* Interestingly, prima facie, all the cases in this section could be plausibly either construed with material conditionals or grounding claims in the essences. To illustrate both types of upwards essence, I will construe all of the examples in both ways.

Let me start with two examples of cases in which the grounding connection itself, or a material conditional that matches it pertains to the essence of the grounding fact—cases of *proper* upwards essence:

Promises: Promises incur pro tanto obligations (or, a bit weaker, practical reasons). On one natural construal, this is interpreted as a grounding claim: the fact that someone gives a promise grounds the fact that they have a pro tanto obligation to do as they promised. For instance, we may have:

Alice promises to pay for a drink $<$ Alice has a pro tanto obligation to pay for a drink.

And plausibly, this connection between promises and obligations stems from the very essence of promises; it is essential to promises that they give rise to obligations. So we have one of (or both of) the following two claims :

$\Box_{\text{Alice promises to pay for a drink}}$ (Alice promises to pay for a drink $\rightarrow$ (Alice promises to pay for a drink $<$ Alice has a pro tanto obligation to pay for a drink)).[12]

$\Box_{\text{Alice promises to pay for a drink}}$ (Alice promises to pay for a drink $\rightarrow$ Alice has a pro tanto obligation to pay for a drink)).

Declarative speech acts: Declarative speech acts subsume speech acts such as baptizing, appointing someone to a position, and declaring a meeting open. Declarative speech acts change reality to the way that they declare it to be: for someone to have a name, for someone to have a position, and for a meeting to be open. Intuitively, it seems plausible that declarative speech acts are the grounds of the relevant states of the world. For instance, we may have:

Bob baptizes his cat 'Charlie' $<$ Bob's cat has the name 'Charlie'.

At the same time, it plausibly essential to declarative speech acts that they affect reality in this way. So we may have:

[12]Note that the conditionalization of the grounding claim on the obtaining of the ground is needed since we are working with a factive notion of grounding.

$\Box_{\text{Bob baptizes his cat 'Charlie'}}$ (Bob baptizes his cat 'Charlie' $\rightarrow$ (Bob baptizes his cat 'Charlie' $<$ Bob's cat has the name 'Charlie')).

$\Box_{\text{Bob baptizes his cat 'Charlie'}}$ (Bob baptizes his cat 'Charlie' $\rightarrow$ Bob's cat has the name 'Charlie').

And here are two examples in which a possibly generalized version of the grounding connection, or a material conditional that matches it, pertains to the essence of a constituent of the ground—cases of *proto* upwards essence:

Dispositional essentialism (see Coates 2022, Jaag 2014, Tugby 2022 for the case): On a natural construal of dispositional essentialism (see e.g. Bird 2007 for the view), it consists of a combination of two claims. First, the instantiation of certain physical properties (such as unit negative electric charge) by objects fully grounds that the objects are disposed in certain ways (such as, roughly, being disposed to attract unit positively charged particles):

$eIc < De$ (where 'e' stands for some particular electron; 'c' for 'the property of unit negative electric charge'; 'I' for 'instantiates'; and 'D' for 'is disposed to attract unit positively charged particles').

Second, it is essential to these properties that they confer the relevant dispositional roles on their bearers. So, for instance:

$\Box_c \forall x(xIc \rightarrow (xIc < Dx))$.

$\Box_c \forall x(xIc \rightarrow Dx)$.

Non-reductive Essentialism (see Romero forthcoming for this case): According to non-reductive essentialist accounts of modality, a proposition's being necessary is explained by its being essential to some entity or entities. On a grounding-construal of this claim, we may thus e.g. have:

$\Box_1$ (1 is a number) $< \Box$ (1 is a number).

One natural option for non-reductive essentialists is to maintain that this connection has its source in the very nature of essence: it is essential to essentiality that if a proposition is essential to some entity or entities, then it is necessary (see e.g. Wilsch 2017):

$\Box_{\Box_{\ldots}} \forall p \forall x(\Box_x p \rightarrow (\Box_x p < \Box p))$.[13]

[13]Strictly speaking, we need a separate quantifier for each syntactic type. So there would be a separate such essence-claim for every syntactic type, featuring the relevant quantifier.

$\Box_{\Box_{\ldots}} \forall p \forall x (\Box_x p \rightarrow \Box p)$.

In addition to these cases, there are many more phenomena and theories which, under natural construals in terms of essence and grounding, give rise to cases of upwards essence.[14] For reasons of space, I merely sketch these further views here:

- *Determinables and Determinates* (see Audi 2012ab for the case): Instantiations of determinables are grounded in instantiations of their determinates; this connection pertains to the essence of the determinates.

- *Natural kinds and the corresponding properties:* Belonging to a kind (such as being an electron) grounds the possession of the corresponding properties (such as the property of unit negative electric charge); it is essential to kinds that belonging to the kind goes together with having the relevant properties.

- *Essential Factivity:* Essence-facts, as well as laws of nature, metaphysics, and logic ground their prejacents; this connection pertains to the essence of essence or the essence of the relevant lawhood; respectively.

- *Assertions (à la Stalnaker 1978):* Someone's asserting a proposition grounds that it is proposed to be added to the common ground; it is essential to asserting that the asserted proposition is proposed to be added to the common ground;

- *Intentions (à la Bratman 1999):* That someone intends to ϕ grounds that they are committed to ϕ-ing; intending to ϕ essentially involves being committed to ϕ-ing.

- *Knowledge-First (à la Williamson 2000):* Remembering a proposition grounds knowing it; it is essential to remembering a proposition that one knows it.

- *Distributional Properties Monism (à la Schaffer 2010):* That the cosmos has a certain distributional property grounds the fact that the cosmos is in a certain at a certain region; the fact that having the property makes one be in a certain way at a certain region is essential to the property.

[14] Note that often, the proponents of the relevant theories listed here themselves do not construe the theories in terms of essence and grounding. In some cases, the proponents have reservations against the ideology of grounding and/or essence in general. And for some of the theories, construals in terms of grounding and essence were simply not pertinent in the times the views were developed. None of this, however, tells against the idea that, for someone who does countenance essence and grounding, a construal of the view in terms of these notions is a natural way to go.

Now, clearly, foes of upwards essence can employ various strategies to get around specific examples cases presented here. They can simply reject the relevant first-order theories; offer error theories for why some of the essentialist or grounding claims may sound plausible despite being false (cf. Correia and Skiles 2019); or construe some of the example cases in terms of sui generis notions of natural/normative grounding, restricting the ban on upwards essence to the common notion of (metaphysical) grounding (cf. Fine 2012a). Yet, even though each example case may be disputed, taken together, the examples still make a strong prima facie case for upwards essence: in the presence of many candidate cases of upwards essence, and merely piecemeal strategies for arguing against them, our default assumption should be that upwards essence is possible—unless convincing arguments against upwards essence are forthcoming. In §5, I will argue that none of the arguments against upwards essence that have been suggested thus far, or that would naturally come to mind, are convincing. And in §6, I will argue that, in addition to the route from the example cases, there is a further route to upwards essence: the existence of at least certain types of upwards essence can be derived from plausible general principles. Before we can come to this, however, we need to get clearer on the general logical form of the different types of upwards essence and their inferential connections. I will turn to this issue in the following section.

4 The connections between the different types of upwards essence

In the last section, we have encountered example cases of the different types of upwards essence—of proper ground upwards essence, proper conditional upwards essence, proto ground upwards essence, and proto conditional upwards essence:

	grounding claim in the essence	material conditional in the essence
the connection is essential to the ground	proper ground	proper conditional
a possibly generalized version of the connection is essential to a constituent of the ground	proto ground	proto conditional

Abstracting away from the specific examples, in all cases of upwards essence, we have a grounding claim of the form $\phi < \psi$, plus—depending on the type of upwards essence—an essentialist claim

as illustrated by the following diagram in the cases:[15]

	ground	**conditional**
proper	$\Box_\phi(\phi \to (\phi < \psi))$	$\Box_\phi(\phi \to \psi)$
proto	$\Box_{\bar{a}}\forall\bar{x}(\phi[\bar{x}/\bar{b}] \to (\phi[\bar{x}/\bar{b}] < \psi[\bar{x}/\bar{b}]))$ Where: $\bar{a}O\phi, \bar{b}O\phi$	$\Box_{\bar{a}}\forall\bar{x}(\phi[\bar{x}/\bar{b}]) \to \psi[\bar{x}/\bar{b}]))$ Where: $\bar{a}O\phi, \bar{b}O\phi$

Given these different types of upwards essence, questions about their inferential relationships arise: Are there entailments between proper and proto upwards essence? And between ground and conditional upwards essence? Apart from the mere theoretical interest of these questions, they are of particular importance in the context of the other sections of this paper. Thus, in the presence of entailments between the different types, the example cases from the last section would also provide us with cases for the existence of types of upwards essence different than their own. Furthermore, all of the arguments against upwards essence that we will discuss in §5 concern exclusively proper upwards essence, and, indeed, one of them even exclusively proper conditional upwards essence. So if there were no inferential relationships between the different types of upwards essence, the arguments would have no bearing on the fate of proto upwards essence. As I will show in the remainder of this section, however, we can indeed prove that there are strong inferential connections between the different types, if we grant some of the principles discussed in §2, as well as two further plausible principles. And thus, both the examples and the arguments generalize.

Does proper upwards essence entail proto upwards essence?

The answer to this question is a trivial 'yes'. For proper upwards essence is just a degenerate type of proto upwards essence, in which $\bar{a} = \phi$ and in which $\bar{x}$ is a zero plurality of variables. Hence, proper upwards essence trivially entails proto upwards essence by being a special case of it.

Does proto upwards essence entail proper upwards essence?

Here, the answer is less trivial. But we can again answer positively if we grant the following principle in addition to those discussed in §2:

[15] I use '$\bar{a}O\phi$' shorthand for 'for all the x among $\bar{a}$, $xO\phi$', and analogously for other cases.

REFLEXIVITY$_{\rhd}$: $\bar{a} \rhd \bar{a}$.

REFLEXIVITY$_{\rhd}$ has it that everything depends on itself: Whatever truths are essential to some 'entities', at least one of these truths concerns the 'entities' themselves. REFLEXIVITY$_{\rhd}$ is, I take it, an extremely plausible principle. Moreover, a corresponding principle is also incorporated in the common Finean logic of essence in the first-order case. Assuming REFLEXIVITY$_{\rhd}$, plus LEIBNIZ' LAW, β-CONVERSION and INHERITANCE from §2, we can prove the entailment from proto upwards essence to proper upwards essence as follows (in the case of conditional upwards essence; the proof in the case of ground upwards essence in entirely analogous):

> Assume that we have a case of proto conditional upwards essence, i.e., one in which (i) $\phi < \psi$, (ii) $\Box_{\bar{a}} \forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}])$, (iii) $\bar{a}O\phi$, and (iv) $\bar{b}O\phi$. By (iii), there is some X such that $\phi = X\bar{a}$. By REFLEXIVITY$_{\rhd}$, there is some Y such that $\Box_{\phi} Y\phi$. It follows by LEIBNIZ'S LAW that $\Box_{\phi} YX\bar{a}$. By β-CONVERSION, there is some Z such that $\Box_{\phi} Z\bar{a}$. By a parallel reasoning starting from (iv), we can infer that for some V, $\Box_{\phi} V\bar{b}$. Since $\Box_{\phi} Z\bar{a}$, $\phi \rhd \bar{a}$. From this result and (ii), it follows by INHERITANCE that $\Box_{\phi} \forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}])$. Now, note that, $\phi \rightarrow \psi$ contains no constants or unbound variables that are not present in $\forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}])$ or $V\bar{b}$. Moreover, we have that: $\forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}]), V\bar{b} \vdash (\phi \rightarrow \psi)$. Given that $\Box_{\phi} \forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}])$ and $\Box_{\phi} V\bar{b}$, by LOGICAL CLOSURE, it follows that $\Box_{\phi}(\phi \rightarrow \psi)$. Since (i) holds, we have a case of proper conditional upwards essence.

Does conditional upwards essence entail ground upwards essence?

Here, it is a perfectly coherent position to maintain that the answer is 'no'. None of the principles considered thus far would allow us to infer cases of ground upwards essence from cases of conditional upwards essence. (In fact, none of the principles force us to maintain that there are any cases of ground upwards essence at all.) And it is very hard to see what other plausible principles could allow us to derive such an entailment.

Does ground upwards essence entail conditional upwards essence?

The answer to this question is 'yes', provided that we countenance the following principle in addition to the ones invoked before:

> ESSENTIAL-RIGHTHAND-FACTIVITY: $\Box_{<} \forall p, q((p < q) \rightarrow q)$.

ESSENTIAL-RIGHTHAND-FACTIVITY is, I take it, a very plausible principle. Factive grounding is factive on both sides: if one fact grounds another, then both the ground and the groundee obtain. And this is not a fluke, but rather something that is plausibly part of the very nature of

factive grounding.[16] Given Essential-Righthand-Factivity, we can infer conditional from ground-upwards essence as follows:

> Assume that we have a case of proto ground upwards essence, i.e. one in which (i) $\phi < \psi$, (ii) $\Box_{\bar{a}} \forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow (\phi[\bar{x}/\bar{b}] < \psi[\bar{x}/\bar{b}]))$, (iii) $\bar{a}O\phi$, and (iv) $\bar{b}O\phi$. By (iii), there is some X such that $\phi = X\bar{a}$. By Reflexivity$_{\triangleright}$, there is some Y such that $\Box_{\phi} Y\phi$. It follows by Leibniz's Law and β-Conversion that there is some Z such that $\Box_{\phi} Z\bar{a}$, and hence that $\phi \triangleright \bar{a}$. From this result and (ii), it follows by Inheritance that $\Box_{\phi} \forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow (\phi[\bar{x}/\bar{b}] < \psi[\bar{x}/\bar{b}]))$. By β-Conversion, it follows that $\phi \triangleright <$. By Essential-Righthand-Factivity and Inheritance, it follows that $\Box_{\phi} \forall p, q((p < q) \rightarrow q)$. Now, note that: $\forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow (\phi[\bar{x}/\bar{b}] < \psi[\bar{x}/\bar{b}])), \forall p, q((p < q) \rightarrow q) \vdash \forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}])$. Moreover, $\forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}])$ contains no constants or unbound variables that are not present in $\forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow (\phi[\bar{x}/\bar{b}] < \psi[\bar{x}/\bar{b}]))$ or $\forall p, q((p < q) \rightarrow q)$. So, by Logical Closure, it follows that $\Box_{\phi} \forall \bar{x}(\phi[\bar{x}/\bar{b}] \rightarrow \psi[\bar{x}/\bar{b}])$. Given (i), we have a case of proto conditional upwards essence. (The case of proper upwards essence is a special case of this, in which $\bar{a} = \phi$ and $\bar{x}$ is a zero-plurality.)

In summary, we have entailments between the different types of upwards essence as illustrated in the following diagram:

$$\begin{array}{ccc} \text{proper ground} & \Rightarrow & \text{proper conditional} \\ \Updownarrow & & \Updownarrow \\ \text{proto ground} & \Rightarrow & \text{proto conditional} \end{array}$$

5 Objections against upwards essence diffused

This section discusses three objections to upwards essence, and argues that all of them can be diffused: the Argument from the Antisymmetry of Dependence, the Argument from Fundamentality, and the Argument from Factual Parthood. The former two of these arguments have been raised in the literature, while the third one has not been proposed in this explicit form yet, but is a precise regimentation of ideas that have been floating around.

[16] One might worry that Essential-Righthand-Factivity incurs a dependence of $<$ on $\forall$ and $\rightarrow$. This result could be avoided, however, by simply adding $\forall$ and $\rightarrow$ as essence-bearers.

5.1 Against the Argument from the Antisymmetry of Dependence

The Argument from the Antisymmetry of Dependence has been suggested within a first-order setting by Ashley Coates (2022, p. 17). While the argument is merely sketched by him, I take the regimentation in what follows to be the most charitable reconstruction of his argument within a higher-order setting. Coates' argument seeks to establish a conclusion that is indeed even stronger than the non-existence of upwards essence: viz., the claim that if ϕ *essentially depends* on ψ, then ϕ does not ground ψ. Let us call this claim 'Dependence Excludes Ground'. Clearly, Dependence Excludes Ground entails the impossibility of proper upwards essence. For suppose that there is a case of proper upwards essence, that is, a case in which $\phi < \psi$, as well as $\Box_\phi(\phi \to \psi)$ / $\Box_\phi(\phi \to (\phi < \psi))$. Then, ϕ essentially depends on ψ, yet grounds ψ, in violation of Dependence Excludes Ground.[17] Moreover, given the result of the previous section that proto upwards essence entails proper upwards essence, Dependence Excludes Ground also entails the impossibility of proto upwards essence.

Here is the Argument from the Antisymmetry of Dependence, using '$\sqsubset$' as a symbol for '... ontologically depends on...':

(P1) For all p, q: If $p \rhd q$, $p \sqsubset q$.

(P2) For all p, q: If $p < q$, $q \sqsubset p$.

(P3) Ontological dependence is antisymmetric.

(P4) For no p: $p < p$.

$\therefore$ Dependence Excludes Ground: For no p, q: $p < q$ and $p \rhd q$.

Clearly, the premises entail the conclusion. Moreover, essential dependence is indeed commonly classified as type of ontological dependence, and the assumption that grounding is irreflexive is widely accepted.[18] So I am happy to grant Coates the premises (P1) and (P4). Moreover, on a first glance, (P2) and (P4) may seem to look plausible too. Thus, in the literature of grounding, it is fairly common to speak of grounding as a type of dependence, and also (P3) enjoys some popularity.[19] On a closer look, however, both (P2) and (P3) turn out to be problematic, and it

[17] The reverse direction fails, on the other hand, since e.g. cases in which $\phi < \psi$ and $\Box_\phi(\psi \to \phi)$, yet not $\Box_\phi(\phi \to \psi)$, contradict Dependence Excludes Ground, while not constituting cases of upwards essence.

[18] See, however, Jenkins 2011 against the irreflexivity of grounding.

[19] The use of dependence talk for grounding is particularly prominent in Rosen's 'Metaphysical Dependence: Grounding and Reduction' (2010) and in Schaffer's 'On What Grounds What' (2009). For some other references, see Clark and Liggins 2012, Rabin 2018, Trogdon 2013, and Wilson 2012. (P3) is endorsed by e.g. Lowe

is my view that both premises should be rejected.

Let us begin with (P2). Now, while in the literature on grounding, grounding is often called a form of dependence, this classification is basically absent in the literature on ontological dependence.[20] Thus, on a widely held view, the basic types of ontological dependence comprise essential dependence, modal existential dependence, explanatory existential dependence and essential existential dependence, but not grounding.[21] Furthermore, as has been argued by a number of authors (Correia 2021b, Rydéhn 2018, and Schnieder 2020b), grounding is not co-extensional, or even merely implies, one of the standard types of dependence. And indeed, there seem to be good reasons to not admit grounding among the relations of dependence. For one core hallmark that relations of ontological dependence are commonly taken to have is that dependees *require* the entities that they depend on in some metaphysical sense.[22] But grounded facts do not require their grounds. Take, for instance, the fact that there is a city. According to grounding orthodoxy, this fact is grounded in the fact that Tokyo is a city. Yet there is no good sense in which this fact would require the fact that Tokyo is a city; it just happens that the latter fact is one among the many facts that bring about the former fact. The fact that there is a city would still have obtained/existed if Tokyo was not a city, given the plenthora of other cities. Nor does the fact that there is a city require this specific ground in order to be the fact that it is, or in any other metaphysical sense that would plausibly come to mind. So (P2) can be safely rejected.

The reasons against (P3) come in the form of counterexamples. Indeed, even leaving modal existential dependence—which is clearly not antisymmetric—to the side and focusing purely on the hyperintensional notions of dependence, counterexamples abound. Most strikingly, if we adopt the previously made assumptions on essence, we can prove that there are many cases of mutual essential dependence. Consider for instance again the claim $\Box_{\{\text{Socrates}\}}$ (Socrates $\in$ {Socrates}). Given this claim, we have that: {Socrates} $\rhd$ (Socrates $\in$ {Socrates}). Yet at the

1994 and Koslicki 2013.

[20] The only exception that I know of is Schnieder 2020a.

[21] a modally existentially depends on b iff necessarily, if a exists, so does b. a explanatory-existentially depends on b iff necessarily, if a exists, the fact that a exists is grounded in some fact about b. a essential-existentially depends on b iff it is essential to a that it only exists if b does. Variations of these basic notions of dependence arise e.g. by taking time into account.

[22] The most obvious sense in which this 'requiring' could go is the modal sense: viz., necessarily, if the dependent entity exists, so do all the entities it depends upon. For modal existential dependence, explanatory existential dependence and essential existential dependence, dependent entities require the entities they depend on in this sense. For the case of essential dependence, this is less clear. But even if not, there is some good sense in which essentially dependent entities require the entities that occur in their essence in order to be the entities that they are.

same time, by a reasoning analogous to the one in the proofs in §4 (drawing on Reflexivity, β-Conversion and Leibniz's Law) it can be proven that: (Socrates $\in$ {Socrates}) $\rhd$ Socrates. So we have a case of mutual essential dependence. More generally, the principles adopted in this paper entail that any $\bar{a}$ and p such that $\Box_{\bar{a}}p$ and aOp mutually essentially depend on one another. In addition to these abstract reasons for countenancing cases of mutual dependence, we can also find various plausible candidates for mutual dependence in the literature. Thus, it has been argued that fictional characters from the same story (Fine 1994), numbers from the same mathematical structure (Barnes 2018), and certain historical events—such as World War II and the battle of Dunkirk—mutually essentially depend on one another (cf. Barnes 2018). And the candidates for mutual dependency are not limited to mutual essential dependence. For instance, it has been argued that a Leibnizian god essentially depends on the actual world, while the actual world explanatory existentially depends on the Leibnizian god (cf. Correia 2005), as well as that on a natural construal of mathematical structuralism, number 1 explanatorily existentially depends on the natural numbers structure, while the natural numbers structure essentially depends on number 1 (cf. Werner 2022).

All in all, two premises of the Argument from the Asymmetry of Dependence can be contested, and the argument fails to make a convincing case against upwards essence.

5.2 Against the Argument from Fundamentality

Versions of the Argument from Fundamentality have been put forward by both Jaag 2014 and Romero forthcoming in a first-order setting.[23] Just as the previously discussed Argument from the Antisymmetry of Dependence, the conclusion of the argument is the stronger principle Dependence Excludes Ground, which entails the non-existence of upwards essence.

Let us use the symbol '$\ll$' as the relational predicate 'is more fundamental than', flanked by one sentence at each side. Then, the Argument from Fundamentality can be construed as follows:

(P1) For all p, q: If $p < q$, then $p \ll q$.

(P2) For all p, q: If $p \lhd q$, then it is not the case that $p \ll q$.

$\therefore$ Dependence Excludes Ground: For no p, q: $p < q$ and $p \rhd q$.

[23] Romero develops the argument primarily for the notion of reduction instead of ground.

While I do not think that the two premises of the argument are beyond doubt,[24] I take them to be fairly plausible and popular. I will thus not quarrel with the premises here and grant them the foe of upwards essence. This is not to say that I am happy to grant the conclusion, however: Even if the premises are granted, the argument fails to make a convincing case for upwards essence. For the argument relies on a further crucial background assumption: that the two premises concern the *same notion* of fundamentality. And this is, I take it, precisely where the argument falls. The assumption that both premises invoke the same notion of fundamentality is a far from harmless claim and can be readily rejected by the proponent of upwards essence.

Indeed, in the recent literature on fundamentality, various philosophers have advocated a pluralist take on fundamentality. On this view, there are multiple 'fundamentality-conducive' relations, each of which goes together with its own notion of fundamentality.[25] And while each of these notions is individually asymmetric, the compound relation of being 'being more fundamental than for some fundamentality-relation' is not. Hence, p may very well be more fundamental$_{\text{ground}}$ than q, while q is more fundamental$_{\text{essential dependence}}$ than p. The conclusion of the argument thus no longer follows once the pluralist take is adopted. In the absence of convincing arguments against the pluralist take, the Argument from Fundamentality thus also fails to make a convincing case against upwards essence.

5.3 Against the Argument from Factual Parthood

The Argument from Factual Parthood has not been explicitly raised in this form in the literature yet, but a reasoning in its vicinity is skecthed by Romero forthcoming. Moreover, the argument rests on two ideas that may naturally come to mind and have been floating around in the literature in similar form: First, if ϕ essentially implies ψ, then part of what it is for ϕ to be the

[24] One obvious option to reject one of the principles would be to uphold a view on which either only grounding or only essential dependence (or perhaps even none of them) bears connections to fundamentality. But even if one maintains that both grounding and essential dependence are connected to fundamentality, one can coherently reject (1) and/or (2). For one example, consider the idea that that relative grounding-fundamentality corresponds to the 'grounding-distance' of 'facts' from the fundamental level—that is, roughly, on the minimal amount of steps of immediate ground that it takes to arrive at the fact from the fundamental level (cf. Correia 2021a, Werner 2020). Now, consider the disjunction of some fundamental ϕ and an unrelated, highly non-fundamental ψ. On the account, $[\phi \vee \psi]$ will be more fundamental than ψ, since one can arrive at it in just one step of immediate ground from the fundamental fact ϕ, while, by assumption, it takes many steps to arrive at ψ. Yet, on common views regarding the grounds of disjunctions, $[\phi \vee \psi]$ will be grounded in ψ. So (1) is invalidated.

[25] See e.g. Audi 2012b, Bennett 2017, Correia 2021b, Koslicki 2012, 2015, and Tahko 2018 (with various different views on which relations are fundamentality-conducive).

case is for ψ to be the case. And second, if for ψ to be the case is part of what it is for ϕ to be the case, then ϕ cannot ground ψ, on pain of rendering the explanation circular.

To cash out these ideas in more precise terms, let us, following Rayo 2013 and Correia and Skiles 2019, define a notion of *(improper) factual parthood* as follows:

> Factual parthood: $\phi \sqsubseteq \psi$ iff$_{\text{def}}$ $\exists p(\phi \wedge p = \psi)$
>
> Rough gloss: Part of what it is for p to be the case is for q to be the case iff for p to be the case is for q plus something else to be the case.

To give two examples, the definition has it that part of what it is for snow to be white and grass to be green is for snow to be white. And—assuming that for Fiona to be a vixen just is for Fiona to be a fox and for Fiona to be female—it has it that part of what it is for Fiona to be a vixen is for her to be a fox. Note that the definition of factual parthood is analogous to a common definition of parthood in terms of fusion in mereology. Importantly, the definition does not presuppose that ϕ and the 'added' p be distinct.[26] In particular, if we accept the principle

> Idempotence$_\wedge$: $p \wedge p = p$,

the definition will have it that any p is part of itself.

With this definition in place, the Argument from Factual Parthood can be stated as follows:

> (P1) Essence-to-Parthood: For all p, q: If $\Box_p(p \to q)$, then, $q \sqsubseteq p$.
>
> (P2) Parthood Excludes Ground: For all p, q: If $q \sqsubseteq p$, it is not the case that $p < q$.
>
> $\therefore$ For no p, q: $\Box_p(p \to q)$ and $p < q$.

Clearly, the premises entail the conclusion, viz., the non-existence of proper conditional upwards essence (and thus, by the results in §4, also of all other types of upwards essence). But why might one be drawn to premises?

Let me start with (P1), the principle Essence-to-Parthood. A reasoning in favor of the principle (which mirrors reasoning in Romero forthcoming) may draw on the commonly upheld link between essences, real definitions and identity. In this vein, many philosophers have taken essences to provide us with a real definition of entities, telling us what the relevant entity *is*. Going in some more detail, it has been suggested that essences provide us with either full or with merely partial real definitions. In the case of full real definition, the definition tells us what the

[26] The natural language gloss is thus perhaps slightly misleading and not fully perspicuous.

essence bearer is in full, while in the case of partial definition, it tells us merely what the essence bearer is in part (Dasgupta 2015, Lowe 2012). To arrive from there at Essence-to-Parthood, the foe of upwards essence could invoke reasonong roughly as follows: Essence-claims of the form $\Box_\phi(\phi \leftrightarrow \psi)$ express full real definitions of ϕ in terms of ψ, having it that for ψ to be the case just is for ϕ to be the case. Essence-claims of the form $\Box_\phi(\phi \rightarrow \psi)$, by contrast, express partial real definitions of ϕ, having it that for ψ to be the case is part of what it is for ϕ to be the case. And the latter half of this idea corresponds precisely to Essence-to-Parthood.

Let me move on to (P2), viz., the principle Parthood Excludes Ground. Claims in the vicinity of this principle—though typically featuring the more general notion of metaphysical explanation as opposed to grounding—have been maintained by various philosophers in the literature (see e.g. Armstrong 1983, Bird 2007, Romero forthcoming, Shumener 2019). And indeed, Parthood Excludes Ground can be easily proven to hold, given two widely held assumptions about grounding:

- Irreflexivity: For no $p, q_1, q_2, ...$: $p, q_1, q_2, ... < p$.
- Conjunction Elimination: If $p \wedge q < r$, then $p, q < r$.

Here is the proof:

> Assume for reductio that: (P) $\psi \sqsubseteq \phi$, and (G) $\phi < \psi$. By (P) and the definition of factual parthood, $\psi \wedge r = \phi$ for some r. By (G) and Leibniz's Law, it follows that $\psi \wedge r < \psi$. By Conjunction Elimination, $\psi, r < \psi$, in violation of Irreflexivity.

On the face of it, the Argument from Factual Parthood might seem to make a strong case against the existence of proper conditional upwards essence, and thus, by the considerations in §3 against all types of upwards essence. But as I will show in what follows, also this argument can be resisted: Granting some plausible principles about the interaction of conjunction and higher-order identity, Essence-To-Parthood has unpalatable consequences. Hence, the principle should be rejected, and the argument fails.

The principles that are needed in this defense of upwards essence are (in addition to some of the principles from §2) the principle of Idempotence$_\wedge$ alluded to in the beginning of this section, as well as the following ones:

- Associativity$_\wedge$: $(p \wedge q) \wedge r = p \wedge (q \wedge r)$.
- Commutativity$_\wedge$: $p \wedge q = q \wedge p$.
- Addition$_\wedge$: If $p = q$, then $p \wedge r = q \wedge r$.

Associativity$_\wedge$, Commutativity$_\wedge$, and Addition$_\wedge$ are uncontroversial principles that are part of any account of higher-order identity that has been defended up to this point. Idempotence fails on some accounts, but still holds on many others. Most importantly, the principle holds on all the accounts that have been proposed in the context of worldly notions of grounding.[27] And indeed, adopting a parallel principle for the case of disjunction (according to which for any p, $p \vee p = p$) is key to avoiding the puzzles that afflict the representational notion of ground (cf. Correia forthcoming).

In the presence of these background assumptions, it can shown that Essence-to-Parthood entails the following principle:

> Mutual Upwards Essence-to-Identity: If both $\Box_\phi(\phi \to \psi)$ and $\Box_\psi(\psi \to \phi)$, then $\phi = \psi$.

Proof:

> Assume that (a) $\Box_\phi(\phi \to \psi)$ and (b) $\Box_\psi(\psi \to \phi)$. By (a) and the definition of factual parthood, there is an r such that $\psi \wedge r = \phi$. By Addition$_\wedge$, it follows that $(\psi \wedge r) \wedge \psi = \phi \wedge \psi$. By Commutativity$_\wedge$, Associativity$_\wedge$, and Transitivity$_=$, it follows that $\phi \wedge \psi = (\psi \wedge \psi) \wedge r$. At the same time, by Idempotence$_\wedge$, $\psi = \psi \wedge \psi$. By Addition$_\wedge$, it follows that $\psi \wedge r = (\psi \wedge \psi) \wedge r$. Combining both results and the fact that $\psi \wedge r = \phi$, it follows by Transitivity$_=$, Symmetry$_=$, and Commutativity$_\wedge$ that $\psi \wedge \phi = \phi$. By parallel reasoning from (b), we also obtain the result that $\phi \wedge \psi = \psi$. By Transitivity$_=$ and Symmetry$_=$, it follows that $\phi = \psi$.

However, Mutual Upwards Essence-to-Identity is plausibly subject to counterexamples, such as the following ones:

- Granted that S5 is the correct logic of modality, it seems plausible that we have that $\Box_\Box \forall p\, (\Box p \leftrightarrow \Box\Box p)$. By a proof analogous to the one in §3 (drawing on Inheritance, Logical Closure, Reflexivity and β-Conversion), this entails that for all p, $\Box_{\Box p}(\Box p \to \Box\Box p)$ and $\Box_{\Box\Box p}(\Box\Box p \to \Box p)$. Yet, it is not the case that $\Box p = \Box\Box p$.

- For a Leibnizian god G and actual world @, we plausibly have: $\Box_G(G \text{ exists} \to @ \text{ exists})$ and $\Box_@(@ \text{ exists} \to \text{G exists})$. By a proof analogous to the ones in §3 (drawing on

[27] Idempotence fails, in particular, on the 'Only Logical Circles'-Account discussed in Dorr 2016, §8. It holds for the accounts of Correia 2010, Correia 2016, and Fine 2017, which have been proposed in the context of worldly grounding, as well as, among others, on the accounts of Bacon and Dorr 2024, Brast-McKie 2021, Elgin forthcoming, Rayo 2013 and the Booleanism-account discussed in Dorr 2016.

Inheritance, Reflexivity and β-Conversion), it follows that $\Box_{G \text{ exists}}(G \text{ exists} \rightarrow @ \text{ exists})$ and $\Box_{@ \text{ exists}}(@ \text{ exists} \rightarrow \text{G exists})$. Yet, it is not the case that G exists = @ exists.

- For the fictional characters Lyra L and her dæmon Pantalaimon P in Pulman's *His Dark Materials* novels; we plausibly have: $\Box_{L \text{ is happy}}(L \text{ is happy} \rightarrow P \text{ is happy})$ and $\Box_{P \text{ is happy}}(P \text{ is happy} \rightarrow L \text{ is happy})$. Yet, it is not the case that L is happy = P is happy.[28]

If we do not want to reject all of these cases out of hand, we need to reject Mutual Upwards Essence-to-Identity. But given plausible background assumptions, Mutual Upwards Essence-to-Identity is entailed by Essence-to-Parthood. So whatever the connections between essence and parthood may be, they cannot be cashed out in terms of Essence-to-Parthood. Essence-to-Parthood should be rejected, and also the Argument from Factual Parthood against upwards essence fails.

6 Upwards essence from general principles

In the last section, we have seen that the extant arguments against upwards essence turn out to be unconvincing. And in §3, we have seen various candidate cases of upwards essence. Taken together, the two sections make, I take it, already a strong case for upwards essence: there are no good reasons to think that upwards essence is impossible, yet some reasons to think that it is possible. In this section, my aim is to take matters even further: I will argue that we can infer the existence of cases of at least conditional, but perhaps also ground proper upwards essence in certain cases of logical grounding from general principles plus fairly innocuous claims.

Let me start with the easier case of proper conditional upwards essence. Given the principles adopted in this paper, one can give an indeed surprisingly straightforward argument for the existence of such cases of upwards essence. For the argument, assume that Fa, and let:

$\phi := \neg Fa \rightarrow (Fa \vee Fa)$.
$\psi := (\neg Fa \rightarrow (Fa \vee Fa)) \vee \neg Fa$.

Since 'Fa' is true, so are ϕ and ψ. Now, on a widely held view on worldly grounding, a disjunction is grounded in each of its true disjuncts, provided that the two disjuncts are 'sufficiently

[28] In these novels, people and their dæmons are construed as intimately related beings that can read each others mind and are, in particular, always in the same emotional state of mind.

disconnected'. Given that $\neg Fa \rightarrow (Fa \vee Fa)$ is true if and only if $\neg Fa$ is true, this disconnection-condition is plausibly fulfilled.[29] So we have:

(G) $\phi < \psi$.

Moreover, we can easily infer the relevant essence-claim for proper conditional upwards essence, viz.,

($\mathrm{E_C}$) $\Box_\phi(\phi \rightarrow \psi)$,

using the principles of Reflexivity and Logical Closure:

> By Reflexivity and the definition of 'O', there is some X such that $\Box_\phi X(\phi)$. Given that ψ is logically true, we have: $X(\phi) \vdash (\phi \rightarrow \psi)$. Moreover, given how ϕ and ψ are defined, $\phi \rightarrow \psi$ contains no constants or unbound variables that are not present in $X(\phi)$. So, by Logical Closure, we can infer: $\Box_\phi(\phi \rightarrow \psi)$.

Combining the essence- and the grounding-claim, we have a case of proper conditional upwards essence.

More abstractly, the idea behind the derivation of the case of proper conditional upwards essence is this. If $\mu < \chi$ is a case of logical grounding, then $\mu \rightarrow \chi$ is a logical truth in the relevant sense. Hence, it is a logical consequence of any truth whatsoever. So if we have some essence-truth with μ as the essence-bearer and a prejacent that contains all the material (constants and unbound variables) present in $\mu \rightarrow \chi$, we can apply Logical Closure to it to arrive at an essence-claim of the right form for conditional upwards essence: one with μ as the essence-bearer but $\mu \rightarrow \chi$ as the prejacent. Moreover, as long as μ contains all the material of χ plus the material conditional, Reflexivity delivers us the needed essence-truth to which we can apply Logical Closure. And ϕ and ψ as defined before are exactly examples for such an μ and χ.

This line of reasoning breaks down in the case of proper ground upwards essence, however: Whereas, in cases of logical grounding, $\mu \rightarrow \chi$ is a logical truth in the relevant sense, $\mu \rightarrow (\mu < \chi)$ is not. Hence, we cannot import the relevant claim into the essences by means of Logical Closure. So if we want to give an argument for the existence of ground upwards essence based on general principles, it needs to proceed in a different way. In what follows, I want to suggest

[29] The disconnection-clause is needed to prevent violations of irreflexivity in the presence of the assumption that $\phi \vee \phi = \phi$. Thus, without the clause, we would have that ϕ grounds $\phi \vee \phi$ and thus itself. In the extant systems for worldly ground, two disjuncts are sufficiently disconnected iff the disjunction is not a partial weak ground for one of the disjuncts. And it is extremely plausible that this condition is met here: no matter what you add to ψ, it will not weakly ground ϕ since it's second disjunct, $\neg Fa$, does not contribute to rendering ϕ true.

such an argument—though one that relies on more substantial assumptions than the previous one and is thus more controversial. Its basic idea is to depart from an essence-claim which should be acceptable for all the relevant parties in the debate, and to then use general principles to turn this essence-claim into one corresponding to ground upwards essence.

Let ϕ and ψ be defined as before. The starting point of the argument is the following proper ground *downwards* essence-claim:

($\mathrm{E_G}$*) $\Box_{\psi}(\phi \to (\phi < \psi))$.

Claims along the lines of ($\mathrm{E_G}$*) are, I take it, fairly standard for philosophers who are open to the idea that essences may sometimes feature grounding claims. And these philosophers are the ones I try to primarily convince in this part of the paper. For if a philosopher opposes to ground downwards essence already, their opposition to ground upwards essence is orthogonal to the issue of upwards essence.

The principle we need in order to turn this claim into on of ground upwards essence is the following one:

> Decomposition: If $\Box_p q$, then $\Box_{a_1,a_2,...} q$, where $a_1, a_2, ...$ are all the free variables and constants in p.

Decomposition has it that if something is essential to a 'fact', then it is essential to all the constituents of the fact taken together: the essence of the whole 'decomposes' into the essence of its parts. Decomposition receives some support by its incorporation in Ditter's (2022) account, the only extant higher-order account of essence. That being said, I do take the principle to be controversial, and thus leave it to the reader to decide for themselves whether they find the principle plausible and feel moved by the argument, or reject it and stop short at the argument for merely conditional upwards essence.

Using Decomposition, as well as Reflexivity and Inheritance, we can easily turn ($\mathrm{E_G}$*) into a corresponding claim of ground upwards essence:

($\mathrm{E_G}$) $\Box_{\phi}(\phi \to (\phi < \psi))$.

Here is how:

> Let $a_1, a_2, ...$ be all the free variables and constants in ψ. By Decomposition, ($\mathrm{E_G}$*) entails that $\Box_{a_1,a_2,...}(\phi \to (\phi < \psi))$. Now, note that ϕ and ψ contain exactly the same free variables and constants. So, for every i, a_i is a free variable or constant in ϕ. By

Reflexivity and β-Conversion, it follows that for every i, $\phi \rhd a_i$. And by Inheritance, it follows that $\Box_\phi(\phi \to (\phi < \psi))$.

Abstracting away from the details of the argument, the core thought is this: If we accept Decomposition alongside with Inheritance and Reflexivity, whatever is essential to some entity will be also essential to any entity with the same 'constituents'. In certain cases of logical grounding, ground and groundee have exactly the same constituents. So, in these cases, downwards essences will automatically go together with upwards essences. Note also that the argument pattern does not only work for ground upwards essence, but also for conditional upwards essence. Indeed, we could give a perfectly analogous argument to the one presented here by simply replacing ($\mathrm{E_G}$*) and ($\mathrm{E_G}$) with the corresponding conditional claims. But since the previous argument for conditional upwards essence rests on less contentious assumptions, I take it to be preferable.

7 Concluding remarks and questions for further research

The topic of this paper has been the phenomenon of upwards essence: cases in which a grounding connection (or a conditional that matches it, or a generalization thereof) pertains to the essence of the grounding truth (or constituents thereof). I have clarified the landscape of the different types of upwards essence, diffused three extant objections against upwards essence, and presented arguments in favor of upwards essence—both via concrete example cases and via abstract arguments based on general principles. What I have hoped to convince the reader of is that upwards essence is not merely a perfectly coherent, but, indeed, an existent phenomenon.

That being said, the discussion in this paper still leaves many interesting questions open. A first aspect concerns the relevant notion of essence. In my discussion, I have worked with the wide notion of consequentialist mediate essence. Thus, one may wonder about the fate of upwards essence on more narrow notions of essence: Are there also constitutive immediate upwards essences? A second aspect concerns the way in which I have construed the notion of upwards essence—as one in which, roughly, grounding is *accompanied* by corresponding essences possessed by the ground or constituents of it. But one may wonder about cases in which the grounding is *grounded in* (or backed by, in some other heavyweight metaphysical sense) the corresponding essences. Can there be also upwards essences in this more demanding way? Finally, one may wonder about the fate of what may be called *pure upwards* essences, viz., upwards essences that

do not go together with corresponding downwards essences. Can be there also such upwards essences? But while these are all good and important questions, they will have to await for another time.

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