

Truths *qua* Grounds

# Truths *qua* Grounds

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A number of philosophers have recently found it congenial to talk in terms of grounding. Grounding discourse features grounding sentences that are answers to questions about what grounds what. The goal of this article is to explore and defend a counterpart-theoretic interpretation of grounding discourse. We are familiar with David Lewis's applications of the method of counterpart theory to *de re* modal discourse. Counterpart-theoretic interpretations of *de re* modal idioms and grounding sentences share similar motivations, mechanisms, and applications. I shall explain my motivations and describe two applications of a counterpart theory for grounding discourse. But, in this article, my main focus is on counterpart-theoretic mechanisms.

A number of philosophers have recently found it congenial to talk in terms of grounding. Grounding discourse features grounding sentences such as 'The whole exists in virtue of its parts', 'Mental facts are grounded in physical facts', and 'It is true that snow is white because snow is white'. Grounding sentences are answers to questions about what grounds what. The interpretation of grounding discourse is the topic of this article.<sup>1</sup>

Grounding discourse is primarily intended to capture beliefs about *non-causal* or *metaphysical* determination.<sup>2</sup> From these beliefs claims about relative ontological fundamentality are supposed to follow: the grounds are meant to be ontologically prior to what they ground.<sup>3</sup> Grounding theorists usually take grounding sentences at face value. Thus interpreted, there is a determinate fact of the matter about what grounds what (about the truth value of the content of grounding sentences)

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<sup>1</sup> In this article, by 'grounding', I mean *metaphysical* grounding.

<sup>2</sup> See e.g. the first sentence of Kit Fine's 'Guide to Ground' (2012): 'A number of philosophers have recently been receptive to the idea that, in addition to scientific or causal explanation, there may be a distinctive kind of metaphysical explanation, in which *explanans* and *explanandum* are connected, not through some sort of causal mechanism, but through some constitutive form of determination.'

<sup>3</sup> See e.g. Koslicki 2015, 306.

independently of the way things are conceived, described, or referred to. I use the label ‘grounding realists’ to refer to grounding theorists who favour this reading of grounding sentences.

In this article, I explore an alternative approach, namely a counterpart theoretic interpretation of grounding discourse. Counterpart-theoretic interpretations of *de re* modal and grounding discourse share similar motivations, applications, and mechanisms. According to the creation myth of counterpart theory, once upon a time, the debate about modal theorising opposed those philosophers who committed themselves to Aristotelian essentialism because they found modal discourse useful and those philosophers, like Quine, who advised against using modal discourse because they rejected Aristotelian essentialism. Participants in this debate were in a deadlock because of the shared assumption that Aristotelian essentialism is as congenial as modal theorising is. By interpreting modal idioms in terms of counterpart theory, David Lewis (1968) broke this deadlock by providing us with an adequate interpretation of *de re* modal idioms that allows for modal theorising without commitment to Aristotelian essentialism. Likewise, the current debate about grounding opposes those philosophers who commit themselves to grounding realism because they find grounding theorising useful and those philosophers who advise against using grounding discourse because they reject the commitments of grounding realism.<sup>4</sup> Participants in this debate are in a deadlock because they share the assumption that grounding realism is as congenial as grounding theorising. But it isn’t, or so an adequate counterpart-theoretic interpretation of grounding discourse would allow us to show. Moreover, there is a cluster of analogies between the theoretical benefits that derive from the flexibility of counterpart-theoretic mechanisms when applied to *de re* modal discourse and the benefits that one can expect to derive from applications of these mechanisms to grounding discourse. I will describe two of these applications. But my main focus in this article is on the mechanisms. Since Lewis’s original counterpart theory is not expressive enough to do the work that I have in store for it, I will need to introduce *advanced* counterpart-theoretic resources.

The plan is as follows. In Section 1, I state my assumptions about the logical form of grounding sentences and the structural principles governing grounding discourse. In Section 2, I motivate the project further. In Section 3, I introduce the advanced counterpart-theoretic resources I shall appeal to in Section 4, which concerns offering counterpart-theoretic truth conditions for grounding sentences. In Section 5, I address likely objections to the proposal of Section 4 and thereby clarify the behaviour of counterpart relations in grounding contexts. Section 6 focuses on two applications of the framework that illustrate the potential utility of its flexibility: the first application is a reply to an objection to the principle that grounds necessitate what they ground. The second application shows

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<sup>4</sup> So-called ‘grounding naysayers’; see Hofweber 2009, Daly 2012.

how to articulate monistic doctrines about what grounds what – *i.e.* claims according to which grounds and what they ground are identical facts under different guises.

## 1. Grounding discourse

In this section, I state my assumptions about the logical form of grounding sentences and the structural principles governing grounding discourse.

Grounding sentences display a rich variety of grammatical and logical forms if the following examples offered by Correia and Schnieder (2012b, 1) are indicative:

- (1) Mental facts obtain because of neurophysiological facts.
- (2) Legal facts are grounded in non-legal (*e.g.* social) facts.
- (3) Normative facts are based on natural facts.
- (4) Meaning is due to non-semantic facts.
- (5) Dispositional properties are possessed in virtue of categorical properties.
- (6) What accounts for the existence of the whole is the existence and arrangement of its parts.
- (7) What makes something beautiful are certain facts about the reception of its beholders.
- (8) That snow is white is true because snow is white.

I shall assume that every atomic grounding sentence can be represented as a predication of ‘is grounded in’ of the following form:

[*p*] is grounded in [*q*],

where [*p*] is a fact, [*q*] are one or many facts, and where I conceive of facts as true propositions.<sup>5,6</sup> In what follows, I use square brackets, ‘[’ and ‘]’, to form names for facts, angle brackets, ‘<’ and ‘>’,

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<sup>5</sup> A counterpart theorist may also wish to think of the *relata* of grounding as mereologically construed states of affairs, as in Lewis 2015. However, doing so requires assuming mereological essentialism in grounding contexts, which I find undesirable.

<sup>6</sup> See Bliss and Trogon 2014. This predicate approach to grounding is opposed to the so-called *operator* approach, which represents grounding sentences by means of a sentential ‘because’ operator; see Correia 2010. Notice that a counterpart-theoretic interpretation of grounding discourse could also proceed by applying counterpart theory to the truthmaker

to form names for propositions, italic font for singular designators, and bold font for plural designators. Notice also that by ‘grounding’, I mean *full* grounding.

Grounding discourse is governed by a set of structural principles. Following Schaffer (2009), Correia (2010), Rosen (2010), Jenkins (2011), Audi (2012), Daly (2012), Fine (2012), Trogdon (2013), and Bliss and Trogdon (2014), we can agree on a fairly stable set of default rules listed as (G1)–(G7). Thus, I shall assume that every instance of the following is true, where ‘*p*’ stands for an arbitrary proposition and ‘**q**’ for one or many arbitrary propositions:

- (G1) *Factivity*: If [*p*] is grounded in [**q**], then *p* is true and **q** are true;<sup>7</sup>
- (G2) *Quasi-irreflexivity*: ‘[*p*] is grounded in [*p*]’ is false;<sup>8</sup>
- (G3) *Transitivity*: If [*p*] is grounded in [*q*] and [*q*] is grounded in [**r**], then [*p*] is grounded in [**r**].
- (G4) *Asymmetry*: If [*p*] is grounded in [*q*], then it is not the case that [*q*] is grounded in [*p*].
- (G5) *Non-monotonicity*: From ‘[*p*] is grounded in [**q**]’, it does not follow that, for any [*x*], [*p*] is grounded in [**q**] and [*x*].
- (G6) *Necessitation*: If [*p*] is grounded in [**q**], then **q** together strictly imply (necessitate) *p*.
- (G7) *Hyperintensionality*: Both positions in grounding sentences are hyperintensional.

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semantics for the operator approach to grounding; see Fine 2012, 71–74. But a counterpart-theoretic interpretation of grounding sentences understood as predications of the grounding predicate seems more direct and intuitive to me.

<sup>7</sup> Notice that (G1) is trivial if facts are understood as true propositions. Notice also that the truth predicate is *distributive*, where a predicate ‘*F*’ is distributive just in case it is analytic that, for any **x**, **x** are *F* iff each *y* among **x** is *F*.

<sup>8</sup> *Quasi-irreflexivity* differs from *Irreflexivity*, which is the principle that if ‘[*p*] is grounded in [*q*]’ is true, then [*p*] ≠ [*q*]; see Jenkins 2011 and sections 2 and 6.2 below.

Except perhaps for (G5) and (G7), none of the listed principles is entirely uncontroversial.<sup>9</sup> Still, there is enough agreement on the validity of (G1)–(G7) to allow us to assume them for the sake of the argument.<sup>10</sup>

Importantly, I take a commitment to grounding realism to imply that grounding idioms are referentially transparent.<sup>11</sup> If so, *Quasi-irreflexivity* entails that grounding is irreflexive, since if ‘ $[p]$  is grounded in  $[p]$ ’ is false, then, for any ‘ $[q]$ ’ co-referential to ‘ $[p]$ ’, it is false that  $[p]$  is grounded in  $[q]$ .

Principle (G7) needs clarification. Following Nolan (2014, 151), I ascribe hyperintensionality to positions in a sentence. In context, the thought is that substituting for ‘ $[p]$ ’ a designator for a fact that necessarily co-obtains with  $[p]$ , or substituting for ‘ $[q]$ ’ a designator for facts that together necessarily co-obtain with  $[q]$ , does not necessarily preserve the truth value of ‘ $[p]$  is grounded in  $[q]$ ’. In general, the source of hyperintensionality may be located in our representation of a subject matter or in the subject matter itself (Nolan 2014). Grounding realists typically take the hyperintensionality of grounding to be a worldly matter. However, there are reasons to take it to be a matter of representation, at least sometimes (Jenkins 2011).

But don’t be misled by the distinction between ‘worldly’ and ‘representational’ views on the hyperintensionality of grounding. Wondering about whether two facts necessarily co-obtain is wondering about whether every world that *represents* one of them as obtaining also *represents* the other as obtaining and *vice versa*. Any view about the hyperintensionality of grounding needs a story about the relevant notion of representation of a fact in a world. There are at least three ways to do so: in terms of transworld identity, duplication,<sup>12</sup> or counterparthood. How we should choose partly depends on our views about the extent of metaphysical possibility.

## 2. Grounding and the extent of metaphysical possibility

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<sup>9</sup> Thus, Fine (2012) has introduced a notion of non-factive grounding; Schaffer (2012) has objected to *Transitivity*; Rodriguez-Pereyra (2015) objects to *Quasi-irreflexivity*, *Asymmetry*, and *Transitivity*; and Leuenberger (2014) and Skiles (2015) object to *Necessitation*.

<sup>10</sup> One may wonder about expanding the list of structural principles by adding Fine’s (2012) principle of amalgamation or Sider’s (2011) principle of *Purity*. However, both principles seem more controversial to me than (G1)–(G7).

<sup>11</sup> Cf. Koslicki 2015, 306.

<sup>12</sup> Duplication is crucially articulated in terms of commonality of intrinsic properties:  $x$  is a duplicate of  $y$  iff  $x$  and  $y$  have the same intrinsic properties; cf. Lewis 1983c.

Schaffer (2016) recently claimed that whether the hyperintensionality of grounding is genuine hyperintensionality depends on how we conceive of metaphysical necessity:

Whether this is true hyperintensionality depends on the range of possible worlds one countenances. If metaphysical possibility is the widest sense of possibility then this is true hyperintensionality. But if – as I think – metaphysical possibility is itself a restricted sense of possibility (perhaps restricted to worlds with common laws of metaphysics, just as nomological possibility is usually thought to be restricted to worlds with common laws of nature) then there may be room for an intensional distinction between  $\emptyset$  and  $\{\emptyset\}$  after all, at ‘worlds’ with different set theoretic principles. (Schaffer 2016, 73 n. 26)

According to Schaffer’s suggestion, in the absolute sense of possibility,  $\emptyset$  could exist without  $\{\emptyset\}$  existing (or *vice versa*). But this absolute sense of possibility does not capture the metaphysical notion of possibility because there is a law of metaphysics according to which  $\emptyset$  and  $\{\emptyset\}$  necessarily coexist. Likewise, according to his suggestion, there may be two facts  $[p]$  and  $[q]$  such that, as a matter of metaphysical necessity,  $[p]$  and  $[q]$  necessarily co-obtain and yet, as a matter of absolute possibility,  $[p]$  could obtain without  $[q]$  obtaining or *vice versa*. Then suppose that  $[p]$  metaphysically necessarily co-obtains with  $[q]$  and  $[p]$  is grounded in  $[q]$ . Given Schaffer’s suggestion, we can model asymmetrical dependence relations between  $[p]$  and  $[q]$  by looking at variations in worlds that are absolutely possible, but not metaphysically so.

Schaffer’s suggestion is attractive. But I confess to finding the manner of restricting the range of metaphysical possibilities in terms of ‘metaphysical laws’ utterly arcane.<sup>13</sup> If one can recombine  $\emptyset$  and  $\{\emptyset\}$  in a way that violates set theoretic principles, then I do not see what prevents us from saying that such a violation is a metaphysical possibility.<sup>14</sup> If one cannot recombine  $\emptyset$  and  $\{\emptyset\}$  in a way that violates set theoretic principles, then I do not see why we should regard as possible, in any sense, such a violation. By distinguishing absolute and metaphysical possibility in the way he does, Schaffer wants to have his Humean cake and eat it too, or so it seems to me.<sup>15</sup>

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<sup>13</sup> Notice that the view that grounding is governed by *metaphysical laws* is common among realists about grounding; see e.g. Daly 2012, 82.

<sup>14</sup> The resulting view would be a form of contingentism about some metaphysical truths; see Miller 2009 and Leuenberger 2014.

<sup>15</sup> I take wholehearted Humeanism about the extent of metaphysical possibility to be the view that metaphysical possibility is combinatorial. See Wilson 2015 and Segal 2015 for recent discussions of wholehearted Humeanism.

From a wholehearted Humean perspective, it would be better to have available an intensional account of the hyperintensionality of grounding that does not compromise with the view that metaphysical possibility is both absolute and combinatorial; an account that does not appeal to any obscure carving of the modal space in terms of metaphysical laws. Counterpart theory seems to provide us with just this.

Consider, by analogy, the interpretation of *de re* modal idioms. Taken at face value, the claim that Sappho is necessarily human, if true, prevents us from recombining Sappho with the property of being a tiger. Thus, taken at face value, *de re* necessity claims restrict the domain of metaphysical possibilities by limiting recombination. If so, whoever takes essentialist idioms at face value must make a choice: either she maintains that metaphysical possibility is absolute and, if so, she is committed to the view that absolute possibility is not combinatorial; or she maintains that absolute possibility is combinatorial and, if so, she is committed to the view that metaphysical possibility is a restricted notion of possibility. Schaffer's suggestion is remarkably close to this second alternative.

By contrast, one virtue of the counterpart theorist's account of essentialist idioms is that it allows us to contend that Sappho is necessarily human without denying that metaphysical possibility is both absolute and combinatorial. According to counterpart theory, '*a* is necessarily *F*' is true if and only if every counterpart of *a* is *F*. Interpreting counterpart relations as sensitive to our contextual goals and interests, it follows by analysis that the notion of possibility involved in *de re* modal claims is restricted relative to our contextual goals and interests. But this is compatible with the view that metaphysical possibility, in the strict sense of the term, is not context sensitive. If so, the counterpart-theoretic account of *de re* modal idioms does not conflict with the view that metaphysical possibility is both absolute and combinatorial.<sup>16</sup> Thus a counterpart theorist may say that, in a context in which we conceive of Sappho as necessarily human, Sappho could not have been a tiger. In this context, worlds that represent Sappho as a tiger represent a *metaphysical impossibility*. But the metaphysical possibility/impossibility divide involved here is the relative and half-hearted way of carving the modal space counterpart theory gives rise to. For, according to the counterpart theorist, there are other contexts in which Sappho could have been a tiger.

*Nota bene*: when I say that a context in which Sappho is necessarily human is a context in which a world that represents her as a tiger is a world that represents a metaphysical impossibility, the relevant notion of *representation* is counterpart-theoretic. But it is not the usual indicative

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<sup>16</sup> More precisely, the counterpart theorist articulates her principle of recombination, in terms of which she accounts for the extent of the metaphysical modal space, in terms of duplication (cf. Bricker 2001), whereas she articulates *de re* modality in terms of counterparthood. Duplication and counterparthood to a thing give rise to two sets of *representatives* for this thing whose overlap varies relative to how counterpart relations vary.

counterpart-theoretic notion of representation. We can account for it in a metalinguistic and counterfactual way. Here we are talking about what the counterparts of Sappho *would have been* if the context *had been* relevantly different. The relevant notion of an impossible representation of Sappho I appealed to derives from a contextually relevant *contrast* between which counterparts Sappho has and which counterparts she would have had if the context had been relevantly and saliently different. Counterpart theorists routinely appeal to such contrasts when explaining the flexibility of counterpart relations. I just did so when contrasting a context in which Sappho is essentially human with a context in which she could have been a tiger.<sup>17</sup>

In the same vein, a counterpart theorist about grounding can maintain that, when we assert that some fact [*p*] is grounded in some facts [*q*], we create a context in which the obtaining of [*q*] necessitates the obtaining of [*p*]. On the assumption that this necessitation claim can be read *de re*, the counterpart theorist about grounding can interpret it in terms of context-sensitive counterpart relations to the *relata* of the grounding claim. Two counterpart relations are involved here, one between [*p*] and its counterparts and one between [*q*] and their counterparts. Grounding contexts fix these counterpart relations in a way that gives rise to a necessary connection between these facts. But a counterpart-theoretic approach to grounding would allow us to say that this notion of necessary connection is the flexible and half-hearted notion counterpart-theoretic mechanisms give rise to. The counterpart theorist may loosely say that, in contexts in which it is true that [*p*] is grounded in [*q*], worlds that represent [*q*] as obtaining without [*p*] obtaining are *metaphysically impossible*. So there is a restricted notion of metaphysical possibility that is already available to the counterpart theorist. But, contrary to Schaffer's grounding realist, the counterpart theorist need not appeal to obscure laws of metaphysics to make sense of it, since this is just the loose counterpart-theoretic notion of metaphysical possibility we are familiar with; the one we can use without conflict with the view that, strictly speaking, metaphysical possibility is both combinatorial and absolute.

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<sup>17</sup> Or consider Lewis's (1986, 252) contrast between a context that requires match of origins and a context that doesn't: 'In a parallel fashion, I suggest that those philosophers who preach that origins are essential are absolutely right – in the context of their own preaching. They make themselves right: their preaching constitutes a context in which *de re* modality is governed by a way of representing (as I think, by a counterpart relation) that requires match of origins. But if I ask how things would be if Saul Kripke had come from no sperm and egg but had been brought by a stork, that makes equally good sense. I create a context that makes my question makes sense, and to do so it has to be a context that makes origins not be essential.' Contrasting the two contexts from the perspective of a context in which origin essentialism is true, a representation of Kripke as being brought by a stork is an impossible counterpart of Kripke in the sense I emphasise here.



What remains to be explained is how the counterpart theorist can use the mechanisms of counterpart theory in order to account for asymmetrical beliefs about what grounds what. Explaining this is what I aim to do in the following sections.

### **3. Counterpart-theoretic resources**

In this section, I introduce advanced counterpart-theoretic resources I shall appeal to when shaping a counterpart-theoretic interpretation of grounding sentences.

In section 1, I made the assumption that grounding sentences are predications having the following form:

[*p*] is grounded in [**q**],

where [*p*] is a fact and [**q**] are one or many facts, and facts are understood as true propositions. This being assumed, a counterpart-theoretic account of grounding discourse requires a counterpart theory for propositions, and it requires the counterparthood predicate to take *plural* values. So, in Section 3.1, I briefly describe a counterpart theory for propositions and in Section 3.2 I indicate a plural extension of Lewis's original counterpart theory.

#### ***3.1. Counterpart theory for propositions***

An adequate counterpart theory for propositions should allow that a proposition can have more than one counterpart in some world. It should also allow that counterpart relations can vary within the same sentence relative to how we refer to, or conceive of the propositions whose modal properties are – or relative ontological priority is – evaluated. Following Dorr (2005), this implies rejecting Lewis's view of propositions as sets of possible worlds. A counterpart theory for propositions is best combined with a conception of propositions as having the objects they are about as constituents – *e.g.*

a neo-Russellian approach to structured propositions.<sup>18</sup> It is also best combined with a counterpart theory for the semantic values of non-logical predicates.<sup>19</sup>

Assuming an account of propositions as structured, counterparthood for propositions can be understood as a function of counterpart relations between their constituents. This being assumed (C<sub>pr1</sub>) is a good candidate account of counterparthood for monadic atomic propositions:

(C<sub>pr1</sub>)  $\langle Fa \rangle$  is a counterpart of  $\langle Gb \rangle$  in  $w$  iff  $a$  inhabits  $w$ ,  $a$  is a counterpart of  $b$  in  $w$  and the semantic value of ‘ $is F$ ’ is a counterpart in  $w$  of the semantic value of ‘ $is G$ ’.

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<sup>18</sup> On Soames’s (1987) neo-Russellian account of propositions, for instance, ‘ $a$  is  $F$ ’ and ‘ $a$  stands in relation  $R$  to  $b$ ’ express respectively the propositions  $\langle \langle a \rangle, F \rangle$  and  $\langle \langle a, b \rangle, R \rangle$ ; the negation of ‘ $a$  is  $F$ ’ expresses the proposition  $\langle \text{NEG}, \langle \langle a \rangle, F \rangle \rangle$ , where NEG is the truth function for negation; the conjunction of ‘ $a$  is  $F$ ’ and ‘ $a$  stands in relation  $R$  to  $b$ ’ expresses the proposition  $\langle \text{CONJ}, \langle \langle \langle a \rangle, F \rangle, \langle \langle a, b \rangle, R \rangle \rangle \rangle$ , where CONJ is the truth function for conjunction; and ‘something is  $F$ ’ expresses the proposition that  $\langle \text{SOME}, g \rangle$ , where SOME is the property of being a non-empty set and  $g$  is the function from individuals  $o$  to the propositions  $\langle \langle o \rangle, F \rangle$ . Alternatively, one may wish to take propositions to be ordered pairs whose first member is a Lewisian proposition—a set of possible worlds—and the second member is a world. But the neo-Russellian approach has two advantages. First, it allows us to understand counterpart relations between propositions as functions of counterpart relations between their constituents. Second, Russellian propositions do not come with truth conditions.

<sup>19</sup> However, I shall not commit myself to any specific view on the semantic value of non-formal predicates in what follows. They can be thought of as universals, tropes,  $n$ -tuples of entities, or pluralities of things. In any case, it is more adequate to conceive of them as worldbound. See Heller 1998, Dorr 2005, Ball 2011, Ehring 2011, and Guigon 2016 for independent defences of a counterpart theory of properties. Notice that a counterpart theory for properties seems to yield a new problem of ‘advanced modalizing’; cf. Divers 1999. Roughly, in a context of advanced modalizing, we modalize about conceptual tools we use to interpret ordinary modal discourse. For instance, we engage into advanced modalizing when asking whether a possible world could have been empty. If we extend counterpart theory to properties, we also engage into advanced modalizing when wondering about how counterparthood could be – *e.g.* when asking whether it could have been an equivalence relation. Clearly, it would be unstable to offer a counterpart-theoretic analysis of advanced modalizing about counterparthood. But distinguishing between ordinary and extraordinary interpretations of modal claims – cf. Divers 2002, 48-51 – allows us to deal with advanced modalizing in any context, this one included. Thanks to an anonymous referee for stressing this point.

(C<sub>pr1</sub>) allows for both *true* and *false* counterparts for propositions.  $\langle Fa \rangle$  is a *true* counterpart of  $\langle Gb \rangle$  in  $w$  if and only if  $\langle Fa \rangle$  is a counterpart of  $\langle Gb \rangle$  and  $a$  satisfies ‘is  $F$ ’. If a proposition has a true counterpart in a world, this world represents it as *true*. If a proposition has no true counterpart in a world, this world represents this proposition as *false*.<sup>20</sup> If so, there are two ways a proposition can fail to have a true counterpart in a world, namely by having a false counterpart in this world or by having no counterpart in this world.<sup>21</sup>

(C<sub>pr1</sub>) can be extended to polyadic atomic propositions:

(C<sub>pr2</sub>)  $\langle Ra_1, \dots, a_n \rangle$  is a counterpart of  $\langle Sb_1, \dots, b_n \rangle$  in  $w$  iff  $\langle a_1, \dots, a_n \rangle$  inhabits  $w$ ,  $\langle a_1, \dots, a_n \rangle$  is a counterpart of  $\langle b_1, \dots, b_n \rangle$  in  $w$ , and the semantic value of ‘ $R\dots,\dots,\dots$ ’ is a counterpart in  $w$  of the semantic value of ‘ $S\dots,\dots,\dots$ ’.

Counterparthood conditions for more complex propositions can be offered on the basis of (C<sub>pr1</sub>), (C<sub>pr2</sub>), and the neo-Russellian account of complex propositions.

What are counterpart relations between propositions? It depends on their subject matter. Perhaps there are abstract objects, like pure sets, that literally exist in every possible world. If so, many propositions about such objects exist literally in every possible world too. In this case, identity may play the role of counterparthood between these propositions, at least in some contexts. But, following Lewis (1968), I shall take concrete beings, like particles, tables, fields, people, and so on,

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<sup>20</sup> But what if a proposition has both a true and a false counterpart in a world? Does this imply that this proposition could be indeterminate or that it could be both true and false? No; a proposition that could be indeterminate is a proposition that has a unique counterpart whose truth value is indeterminate, and a proposition that could be true *and* false is a proposition that has a unique counterpart that is both true and false. Nothing in the present account commits us to there being possible propositions of these sorts. A world in which a proposition has two counterparts, a true one and a false one, is simply a world that represents an identity pair of propositions as a non-identity pair of propositions.

<sup>21</sup> The implication that a proposition is represented as false in the absence of any counterpart is in line with the assumption that counterparthood for propositions is a function of counterpart relations between constituents of propositions. In Lewis’s original counterpart theory, a world that represents *de re* Humphrey as non-existing is a world in which Humphrey has no counterpart. Such a world also represents *de re*  $\langle$ Humphrey exists $\rangle$  as false. And it is adequate for the counterpart theorist about propositions to say that this world represents *de re*  $\langle$ Humphrey exists $\rangle$  as false because  $\langle$ Humphrey exists $\rangle$  has no counterpart in it since Humphrey has no counterpart in it. Here it is also important to remember that, counterpart theory is an account of *de re* modal representation and, ultimately, a reduction of *de re* modality to *de dicto* modality *plus* comparative overall similarity; see Sider 2002. The *de dicto* representation of propositions is a different issue.

as *worldbound*. According to the suggested counterpart theory for propositions, propositions about these sorts of things are worldbound too. But not only them. If Socrates and Plato are worldbound, then so are {Socrates}, {{Plato}}, {{Socrates}, Plato}, etc. and propositions about these sets. In general, my focus is on worldbound propositions.

I shall follow Lewis in understanding counterpart relations between worldbound entities as relations of *comparative overall similarity*. More precisely, counterpart relations between individuals are relations of comparative overall similarity, whereas counterpart relations between propositions are functions of similarity relations between constituents of propositions. Notice that this is compatible with the idea that counterpart relations between objects may be sensitive to which propositions about them we are considering. Following Lewis (1971, 1983b), comparative overall similarity will be thought of as highly context sensitive, and so are counterpart relations between propositions.<sup>22</sup>

### 3.2. *Plural counterpart theory*

Predications of grounding can take plural values in the *ground* position. So, a counterpart-theoretic account of grounding should allow for plural predications of counterparthood.<sup>23</sup> My goal in this section is to offer a sketch of a plural extension of Lewis's counterpart theory and show how to apply it to propositions. But notice that the utility of a plural extension of counterpart theory goes beyond the aim of this article. We undeniably make plural *de re* modal judgements. For instance, we can say things like 'The Rolling Stones could have had another guitarist', 'the students could be surrounding the building', or 'the daughters of Dr March are necessarily sisters'. Whoever thinks that *singular de re* modal idioms are best interpreted using counterpart theory should think the same about *plural de re* modal idioms. Yet, the adequate counterpart theory to interpret these idioms is a plural counterpart theory.

Lewis's (1968) singular predicate of *counterparthood* can be understood as follows:

(CT<sub>s</sub>) For all  $x$  and  $y$ ,  $x$  is a counterpart of  $y$  iff  $x$  is similar to  $y$  and there is no  $z$  in  $x$ 's world such that  $z$  is more similar to  $y$  than  $x$  is.

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<sup>22</sup> Notice that this is not a necessary requirement on counterpart theories. Some accounts of comparative overall similarity yield context-insensitive counterpart relations; see Buras 2006 and Guigon 2014. But context-sensitive comparative overall similarity relations give to my framework the flexibility that I want it to have.

<sup>23</sup> A relevant example of *collective* grounding will be discussed in detail in section 6.1.

By extension, plural counterparthood can be understood thus, where, following Oliver and Smiley (2013), ‘**x**’, ‘**y**’, etc. are plural variables:<sup>24</sup>

(CT<sub>pl</sub>) For all **x** and **y**, **x** are counterparts of **y** iff **x** are similar to **y**, and for any **z** distinct from **x** in the world of which **x** are parts, it is not the case that **z** are more similar to **y** than **x** are (where **x** ≠ **z** iff there is an *x* such that *x* is among **x** but not among **z** or *x* is among **z** but not among **x**).

In plural counterpart theory, **x** are possibly *F* in *w* just in case there is a possible world *v* such that **x** have counterparts **y** in *v* that are *F*. Likewise, **x** are necessarily *F* in *w* just in case **x** have no non-*F* counterparts **y**.

To give a concrete example, the counterpart-theoretic translation of (12) is (12’)

(12) The students could be surrounding the building;

(12’) There is a possible world *w* and there are some counterparts **x** in *w* of the students such that **x** are surrounding the building.

Likewise, the counterpart-theoretic translation of (13) is (13’):

(13) The daughters of Dr March are necessarily sisters;

(13’) For every possible world *w*, if there are counterparts **x** in *w* of the daughters of Dr March, then **x** are sisters.

It is worth noticing that ‘surrounding the building’ and ‘being sisters’ are non-distributive predicates.<sup>25</sup> This indicates that, in some contexts at least, plural predications of counterparthood are to be interpreted as *collective*.<sup>26</sup> Indeed, (13’) makes sense only if ‘there are counterparts **x** in *w* of the daughters of Dr March’ is understood as being about *possibilia* that *together* are counterparts of Dr March’s daughters.

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<sup>24</sup> In general, an adequate formal counterpart theory should combine the vocabulary and axioms of Lewis’s (1968) counterpart theory to the vocabulary and axioms of an adequate plural logic, e.g. that of Oliver and Smiley 2013; cf. Guigon 2015a, 148-50 for such an account.

<sup>25</sup> Cf. the definition of a distributive predicate in note 7.

<sup>26</sup> This implies that the plural counterpart theorist needs an account of plural predications of overall similarity that allows for a *collective* reading; cf. Guigon 2009 for such an account.

We want to apply plural counterparthood to propositions. To illustrate this, consider how the framework allows us to give a counterpart-theoretic account of necessitation between some facts and a fact. For instance, consider (14):

(14) <Socrates exists> and <Plato exists> together necessitate that {Socrates, Plato} exists.

In terms of a plural counterpart theory for propositions this translates to the following:

(14') For every possible world  $w$ , if there are, in  $w$ , true counterparts  $\mathbf{x}$  of <Socrates exists> and <Plato exists>, then there is, in  $w$ , a true counterpart  $y$  of <{Socrates, Plato} exists>.

Notice that (14') interprets *de re* the necessary connection expressed in (14). Thus interpreted, this necessary connection is a function of the *de re* representation of Socrates, Plato, and {Socrates, Plato}.

#### 4. Counterpart-theoretic grounding

In this section, I use the resources introduced above to offer counterpart-theoretic truth conditions for grounding sentences. I will be guided by principles (G1)–(G7) and grounding realists' intuitions about what grounds what while doing so.

Some terminology: By an 'm-possible world', I mean a metaphysically possible world in the half-hearted and relative counterpart-theoretic sense that I introduced in Section 2. By contrast, let an 'M-possible world' be a metaphysically possible world in the absolute and combinatorial sense of the term. By a ' $p$ -world' and a ' $\mathbf{q}$ -world', I mean respectively a world in which a proposition  $\langle p \rangle$  is represented as true and a world in which propositions  $\langle \mathbf{q} \rangle$  are represented as true, hence a world in which these propositions have true counterparts.

According to an infamous simplistic modal account of grounding, a fact is grounded in some facts just in case the former could not obtain without the latter obtaining. Consider as a starting point the counterpart-theoretic version of this mistaken account:

(PROTO.CT-G) ' $[p]$  is grounded in  $[\mathbf{q}]$ ' is true if and only if  $\mathbf{q}$  are true, and  $p$  has a true counterpart in every m-possible  $\mathbf{q}$ -world.

One of the main problems with (PROTO.CT-G) is that it fails to capture intuitions according to which the grounds are ontologically prior to what they ground. For instance, the proposition that {Sappho, Socrates} exists is true and strictly implies that {Sappho} exists. So, given (PROTO.CT-G), we can

derive that the fact that {Sappho} exists is grounded in the fact that {Sappho, Socrates} exists. But it is intuitively wrong that {Sappho, Socrates} is ontologically prior to {Sappho}. A counterpart theorist about grounding must do better than (PROTO.CT-G). What is required in order to make progress is an adequate way to capture the intuition that grounds are prior to what they ground.

One way to capture this intuition consists in accounting for the thought that grounds are foundational, a base, for what they ground. This thought has to do with the analogy between grounding and building. Karen Bennett (2011) recently proposed to take this analogy seriously and to conceive of grounding as a *building* relation. I think that the counterpart theorist would be well-advised to resist the realist assumptions on which Bennett's view relies – *e.g.* the assumption that grounding is some mysterious non-causal *generation* relation that links the world across levels.<sup>27</sup> Still, she can use the analogy between building and grounding as a heuristic to account for the view that grounds are foundational for what they ground and, therefore, prior to what they ground.

According to the building view of grounding, the grounds are like a building's foundation and what they ground, derivative facts, are like superior floors of the building. In construction, the integrity of the whole building depends on the foundation: a damage in the foundation is likely to cause serious problems throughout the building; by contrast, a damage at a superior floor is much less likely to cause damages in the foundation of the building. Thus there is a sense in which the integrity of the whole building depends more on the (solidity of the) foundation than on the (solidity of) superior floors. One way to account for this appeals to demolition scenarios. Imagine two demolition scenarios about the Small Tower, a simple building composed of a foundation and exactly one floor on top of it. In scenario A, the demolishers place their explosives at the foundation of the Small Tower. In scenario B, they place their explosives at the superior floor. Intuitively, the detonation is more likely to make the Small Tower collapse entirely in scenario A than in scenario B. Now consider a variation A\* on scenario A in which the detonation demolishes the foundation of the Small Tower but leaves the superior floor undamaged. And consider a variation B\* on scenario B in which the detonation demolishes the superior floor of the Small Tower but leaves the foundation undamaged. Intuitively, given where the explosives were placed in each scenario, scenario B\* is much more likely than scenario A\*. Demolishing the foundation of a building while leaving superior floors intact would require extraordinarily sophisticated demolition techniques. But there is nothing extraordinary about

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<sup>27</sup> In the same vein, Schaffer (2012, 122) writes, “Roughly speaking, just as causation links the world across time, grounding links the world across levels. Grounding connects the more fundamental to the less fundamental, and thereby backs a certain form of explanation.” Likewise, Correia (2013, 271): “along this line of thought is the venerable tradition which holds that one of the general aims of metaphysics is to unveil the layered structure of reality, which consists of a level of basic, i.e. ungrounded, facts, and a (perhaps itself structured) level of facts grounded in the former facts.”

demolishing superior floors of a building without damaging its foundation. Thus, on the construction area, a world in which B\* occurs is closer to our world than a world in which A\* occurs. This can be taken as an account of why the integrity of the whole building depends more on the foundation than it depends on superior floors.

The analogy between building and grounding suggests that one can account for the idea that the grounds are foundational for what they ground in a similar vein. Given the analogy, damaging the grounds should be more likely to damage the grounded than damaging the grounded is likely to damage the grounds. Thus suppose that [p] is grounded in [q]. The thought is that some world in which [p] does not obtain/is demolished but [q] obtain/are not demolished is somehow closer to our world than worlds in which [q] do not obtain/are demolished but [p] obtains/is not demolished. This provides us with an account of the thought that grounds are foundational for what they ground in a way that preserves the intuition that grounds are prior to what they ground.<sup>28</sup>

An equivalent approach appeals to counterpossible conditionals. According to it, if [q] are foundational for [p], then, if either [p] or [q] but not both of them were not to obtain, it would be [p] that would not obtain.<sup>29</sup> For instance, suppose that {Sappho} exists because Sappho exists. If so, the existence of Sappho is foundational for the existence of {Sappho}. The thought is that this is true just in case if either the fact that Sappho exists or the fact that {Sappho} exists, but not both of them, were not to obtain, it would be the fact that {Sappho} exists that would not obtain. This conditional is counterpossible on the assumption that the existence of Sappho necessitates that of {Sappho} and *vice versa*. Yet, following Krakauer (2012), one can account for the truth conditions in which such counterpossibles are true in a way that is analogous to the standard Lewis-Stalnaker semantics for counterfactuals, that is to say by means of a suitable closeness metrics. The idea is that the counterpossible conditional is true if and only if some metaphysically impossible world that represents the fact that Sappho exists as obtaining without the fact that {Sappho} exists obtaining is closer to our world than any metaphysically impossible world that represents the fact that {Sappho} exists as obtaining without the fact that Sappho exists obtaining. This corresponds to the closeness ordering I captured in terms of demolition scenarios.

So far the proposed account of the thought that grounds are foundational for what they ground is neutral regarding whether we interpret grounding sentence at face value or counterpart-

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<sup>28</sup> Notice that, if grounding sentences are taken at face value, then the proposed account seems inadequate in cases of *multiple realisability*. I explain in Section 5 why interpreting grounding sentences counterpart-theoretically avoids this problem.

<sup>29</sup> See Krakauer 2012, 112–43.



theoretically.<sup>30</sup> Depending on which grounding sentence we evaluate, counterpart theorists and grounding realists can even agree that not every way of fixing the relevant closeness ordering between impossible worlds is equally adequate. Thus the counterpart theorist can contend that the relevant closeness ordering between impossible worlds is constrained by which theories are true. For instance, suppose that ZF-set theory is true. Then the counterpart theorist can maintain that, whatever the context, avoidance of major violations of ZF-set theory is more important than avoidance of minor violations of ZF-set theory. Not anything goes, not even for a counterpart theorist.<sup>31</sup> But, assuming a *de re* reading of the relevant necessitation claims, the counterpart theorist can coherently maintain this account and deny that, talking wholeheartedly and absolutely, there are metaphysically impossible worlds. For she can coherently interpret the suggested account of the thought that grounds are foundational for what they ground in terms of the restricted notion of metaphysical possibility counterpart theory gives rise to, or so I argue next.

The counterpart theorist can maintain that ‘if either of [Sappho exists] or [{Sappho} exists] but not both of them were not to obtain, then it would be [{Sappho} exists] that would not obtain’ is true just in case some world in which [Sappho exists] has a true counterpart and [{Sappho} exists] has no true counterpart is closer to our world than any world in which [{Sappho} exists] has a true counterpart and [Sappho exists] has no true counterpart. The worlds involved in this account represent *de re* metaphysical impossibilities. But, given a suitable choice of counterpart relations to interpret these modal claims, these m-impossible worlds need not be M-impossible worlds—that is to say, they need not be metaphysically impossible worlds in the absolute and combinatorial sense of the term.

In general, let a  $\bar{p}\mathbf{q}$ -world be a world in which  $p$  has no true counterpart and  $\mathbf{q}$  have true counterparts and let a  $p\bar{\mathbf{q}}$ -world be a world in which  $p$  has a true counterpart but  $\mathbf{q}$  have no true counterparts, where these worlds need not be m-possible. Following Lewis (1973, 48), let  $<_w$  be a strict closeness ordering to an arbitrary world  $w$ . The counterpart theorist’s account of the thought that grounds are foundational for what they ground can be regimented as follows:

(CT-F) ‘ $[\mathbf{q}]$  are foundational for  $[p]$ ’ is true in  $w$  if and only if there is a  $\bar{p}\mathbf{q}$ -world  $v$  such that,  
for all  $p\bar{\mathbf{q}}$ -world  $u$ ,  $v <_w u$ .

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<sup>30</sup> Thus Krakauer (2012) endorses a realist interpretation of this account.

<sup>31</sup> But the range of grounding sentences for which the closeness ordering is thus constrained independently of any contextual specification is a piecemeal matter that can vary among counterpart theorists.

(CT-F) adequately preserves the intuition that, if  $[q]$  are foundational for  $[p]$ , then  $[q]$  are ontologically prior to  $[p]$  – for arbitrary  $[p]$  and  $[q]$ .<sup>32</sup> What makes (CT-F) counterpart-theoretic is the way we interpret the relevant notion of representation of a proposition in a world and the way we understand the closeness ordering between worlds. This needs further clarification.

Central to the counterpart-theoretic interpretation of (CT-F) is the metalinguistic and counterfactual notion of counterparthood in m-impossible worlds that I briefly introduced in Section 2. According to the counterpart theorist, by asserting that  $[p]$  is grounded in  $[q]$  I thereby create a context in which there is a necessary connection between the obtaining of  $[q]$  and the obtaining of  $[p]$ . The counterpart-theoretic account of such necessary connections is familiar (Lewis 2003). But, according to the counterpart theorist I am considering, by asserting that  $[p]$  is grounded in  $[q]$  in a certain context, we also create a contrast between this context,  $C$ , and a relevantly and saliently different context,  $C'$ , in which  $[q]$  could obtain without  $[p]$  obtaining or  $[p]$  could obtain without  $[q]$  obtaining. The contrast context  $C'$  represents as possibilities what are impossibilities from the perspective of the grounding context  $C$ . But, from the perspective of  $C$ , the impossibilities represented as possibilities by  $C'$  are not on par if it is true that grounds are foundational for what they ground. For, if so, they are such that some world in which  $[q]$  are represented as obtaining without  $[p]$  is closer to our world than any world in which  $[p]$  is represented as obtaining without  $[q]$ . For instance, in a context  $C$  in which it is true that  $[\{\text{Sappho}\} \text{ exists}]$  is grounded in  $[\text{Sappho exists}]$ , there is a two-way necessary connection between these two facts that is such that, in  $C$ , a context  $C'$  that *would* represent Sappho as existing without  $\{\text{Sappho}\}$  existing or  $\{\text{Sappho}\}$  as existing without Sappho existing is a context that represents impossibilities. But since it is true in  $C$  that the fact that Sappho exists is foundational for the fact that  $\{\text{Sappho}\}$  exists, it is true in  $C$  that the m-impossibilities represented (as m-possibilities) in  $C'$  are ordered in such a way that some world in which the proposition that Sappho exists has a true counterpart but the proposition that  $\{\text{Sappho}\}$  exists has no true counterpart is closer to our world than any world in which the proposition that  $\{\text{Sappho}\}$  exists has a true counterpart but the proposition that Sappho exists has no true counterpart. Here the relevant notion of counterparthood in m-impossible worlds is not meant to capture the way things *could* be in the context we are in nor is it meant to capture the way things *could not be* in genuine impossible worlds. It is merely meant to capture how things *could have been* if the context had been relevantly and saliently different to the grounding context we are in.

This being clarified, let us combine (PROTO.CT-G) and (CT-F) in a counterpart-theoretic interpretation of grounding sentences and evaluate the result:

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<sup>32</sup> See Section 5 for replies to objections I anticipate on this point.

(CT-G) ‘ $[p]$  is grounded in  $[q]$ ’ is true *iff*

- (i)  $q$  are true, and  $p$  has a true counterpart in every m-possible  $q$ -world, and
- (ii) there is a  $\bar{p}q$ -world  $v$  such that, for all  $p\bar{q}$ -world  $u$ ,  $v <_w u$ .

According to (CT-G), a sentence of the form ‘ $[p]$  is grounded in  $[q]$ ’ is true just in case  $[q]$  obtain,  $[q]$  necessitate  $[p]$ , and  $[q]$  are foundational for  $[p]$  in the sense captured by (CT-F). Both the notion of necessitation and the notion of being foundational for involved in (CT-G) are counterpart-theoretic.

In the remaining of this section, I briefly demonstrate that (CT-G) validates each of the structural principles (G1)-(G7) on grounding discourse (cf. Section 1). Readers can skip immediately to the conclusion of this section without loss of continuity.

Clause (i) of (CT-G) merely adds to (CT-F) that grounding is factive and *Necessitation* holds. So (CT-G) validates principles (G1) and (G6). That grounding is asymmetrical – (G4) – and quasi-irreflexive – (G2) – follows from the asymmetry and irreflexivity of the closeness ordering involved in clause (ii) of (CT-G). In order to see this, suppose for *reductio* that there are failures of *Asymmetry* or *Quasi-irreflexivity*. Then, on the assumed link between grounding and being foundational for, there are facts  $[p]$  and  $[q]$  such that  $[q]$  are foundational for  $[p]$  and  $[p]$  is foundational for  $[q]$ . If so, given (CT-F), for any world  $v$  that does not represent  $[p]$  as obtaining but does represent  $[q]$  as obtaining, there is a world  $u$  that represents  $[p]$  as obtaining but does not represent  $[q]$  as obtaining such that  $u$  is as close to our world as  $v$  is. But this contradicts clause (ii) of (CT-G). Therefore, by *reductio* it follows from (CT-G) that grounding is asymmetrical and quasi-irreflexive.

That grounding is transitive according to (CT-G) can be shown as follows. Suppose that  $[p]$  is grounded in  $[q]$  and  $[q]$  is grounded in  $[r]$ . Can we deduce from this and (CT-G) that  $[p]$  is grounded in  $[r]$ ? Since grounding is factive and necessitation is transitive, we know that  $\langle r \rangle$  are true and that  $\langle p \rangle$  has a true counterpart in every m-possible  $r$ -world. So, clause (i) of the right-hand side of (CT-G) is verified. Assuming this, what needs to be shown is that there is a  $\bar{p}r$ -world  $v$  such that, for all  $p\bar{r}$ -world  $u$ ,  $v <_w u$ . Every  $p\bar{r}$ -world is either a  $p\bar{q}\bar{r}$ -world or a  $pq\bar{r}$ -world. So in *every*  $p\bar{r}$ -world, some grounded fact is represented as obtaining without its grounds being represented as obtaining. On the other hand, every  $\bar{p}r$ -world is either a  $\bar{p}qr$ -world or a  $\bar{p}\bar{q}r$ -world. If so, no  $\bar{p}r$ -world is a world in which a grounded fact is represented as obtaining without its grounds. On the assumption that grounds are foundational for what they ground, this warrants the belief that some  $\bar{p}r$ -world is closer to our world than any  $p\bar{r}$ -world. If so, clause (ii) of the right-hand side of (CT-G) is verified too. Therefore, according to (CT-G),  $[p]$  is grounded in  $[r]$  and grounding is transitive.

That (CT-G) satisfies (G5), the principle that grounding is non-monotonic, is straightforward. Suppose that the existence of {Sappho} is grounded in the existence of Sappho. Does it follow that the existence of {Sappho} is grounded in the existence of Sappho and the fact that my bike is blue?

Given (CT-G), from ‘the existence of {Sappho} is grounded in the existence of Sappho’, it follows that some world  $w$  in which  $\langle$ Sappho exists $\rangle$  has a true counterpart but  $\langle$ {Sappho} exists $\rangle$  doesn’t is closer to our world than any world  $v$  in which  $\langle$ {Sappho} exists $\rangle$  has a true counterpart but  $\langle$ Sappho exists $\rangle$  doesn’t. But, assuming that possible worlds are closer to our world than impossible ones, it is false that some world in which  $\langle$ Sappho exists $\rangle$  and  $\langle$ my bike is blue $\rangle$  together have true counterparts but  $\langle$ {Sappho} exists $\rangle$  doesn’t is closer to our world than any world in which  $\langle$ {Sappho} exists $\rangle$  has a true counterpart but  $\langle$ Sappho exists $\rangle$  and  $\langle$ my bike is blue $\rangle$  together don’t. For {Sappho} and my bike could be such that the first exists and the second is green, whereas my bike, Sappho and {Sappho} could not be such that the first is blue, the second exists but the third doesn’t. If so, (CT-G) validates (G5).

Finally, that grounding is hyperintensional according to (CT-G) can be shown as follows. Suppose that we substitute ‘ $[p]$ ’ in ‘ $[p]$  is grounded in  $[q]$ ’ with a name for a fact, ‘ $[r]$ ’, that necessarily co-obtains with  $[p]$  but is such that  $[q]$  are not foundational for  $[r]$ . Assuming (CT-F), it is not the case that some (m-impossible)  $\bar{r}q$ -world  $v$  is closer to our world than any  $r\bar{q}$ -world. But, given clause (ii) of (CT-G), if it is true that ‘ $[r]$  is grounded in  $[q]$ ’, there must be such a world. So it is false that  $[r]$  is grounded in  $[q]$  despite the fact that  $[p]$  and  $[r]$  necessarily co-obtain; hence, grounding is hyperintensional in the grounded-position. A parallel reasoning shows that, assuming (CT-G), grounding is also hyperintensional in the ground-position.

Therefore, (CT-G) preserves each of the structural principles (G1)-(G7).

I think that (CT-G) is satisfactory as a counterpart-theoretic account of the conditions in which grounding sentences are true. Perhaps some may wish to complain that (CT-G) is unsatisfactory as a metaphysical analysis of grounding. But this would be misunderstanding my goals. My aim here has been to deploy counterpart theory to give a semantical analysis of grounding discourse. It has not been my goal to offer a foundational analysis of grounding.<sup>33</sup> I will apply (CT-G) to specific concerns about grounding in section 6 in order to illustrate its potentially great theoretical utility.

## 5. Objections and replies

But first I stop to address some likely objections to (CT-G). This will allow me to clarify my views on the behaviour of counterpart relations in grounding contexts.

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<sup>33</sup> Cf. Hazen 1979 and Woodward 2017, section 4 on the distinction between semantic and foundational uses of counterpart theory.

*Objection 1.* According to (CT-G), if it is true that {Sappho} exists because Sappho exists, there is a world in which Sappho but not {Sappho} exists. But ZF-set theory, if true, is necessarily true. So no possible world is such that Sappho but not {Sappho} exists in it. So, either (CT-G) is false or it commits the counterpart theorist to genuine impossible worlds.

*Reply.* (CT-G) does not commit us to there being any world in which Sappho exists without {Sappho} existing nor does it commit us to there being any world in which <Sappho exists> has a true counterpart but <{Sappho} exists> has no true counterpart. The only counterparts these propositions have are in m-possible worlds, which are all M-possible worlds. What is true is that (CT-G) accounts for the truth of ‘[{Sappho} exists] is grounded in [Sappho exists]’ by *contrasting* the counterparts of <Sappho exists> and <{Sappho} exists> with the counterparts these propositions *would have had* if the context had been saliently and relevantly different. My notion of counterparthood in m-impossible worlds is built on such a contrast. (CT-G)’s account of the truth of ‘[{Sappho} exists] is grounded in [Sappho exists]’ merely relies on the claim that there may be a context in which some world contains a counterpart of Sappho but no counterpart of {Sappho}. Saying this is one thing; denying that, for every world  $w$  and every  $x$ , if  $x$  is a part of  $w$ , then  $\{x\}$  is a part of  $w$  is another thing. Nothing in the counterpart theorist’s account of the conditions in which ‘{Sappho} exists because Sappho exists’ is true commits her to the rejection of this claim. Therefore, nothing commits the counterpart theorist to there being any world in which ZF-set theory fails.

*Objection 2.* But if you maintain that, independently of the context, for every world  $w$  and every  $x$ , if  $x$  is a part of  $w$ , then  $\{x\}$  is a part of  $w$ , then how can it be that there are contexts in which {counterpart of Sappho} is not a counterpart of {Sappho}? Could it be less similar to {Sappho} than the counterpart of Sappho is similar to Sappho? This seems hard to justify. And it would be worse to say that, though similar to {Sappho}, something else in the world is more similar. In general, if counterpart relations are based on similarity, then there are constraints as to what counterpart relations can be invoked by a context.<sup>34</sup>

*Reply.* Objection 2 seems to rely on the assumption that the flexibility of counterpart relations is constrained by the intrinsic nature of individuals. More precisely, the thought seems to be that there cannot be any context in which similarities in intrinsic respects are outweighed in relevance and importance by similarities in extrinsic respects. Perhaps this assumption is warranted in foundational uses of counterpart theory. But I cannot see any good reason to make this assumption in semantical uses of counterpart theory. On the contrary, it is crucial to counterpart theorists that sometimes counterparthood is fixed by attaching importance to similarities in highly extrinsic respects. We are

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<sup>34</sup> I am grateful to an anonymous referee for the *Australasian Journal of Philosophy* for this objection.

familiar with Lewis's claim that there might be a context in which Socrates could have been a poached egg. Surely, a poached egg counterpart of Socrates is intrinsically much unlike Socrates and any of his duplicates. Woodward (2017, Section 2) rightly points out that 'you may count as a counterpart of mine by being twelve feet from a cat, for instance.' But it is also true that a duplicate of mine may fail to be a counterpart of mine by failing to be twelve feet from a cat. So, assuming as one should that, in semantical uses of counterpart theory, similarities in extrinsic respects can outweigh similarities in intrinsic respects, a context in which {counterpart of Sappho} fails to be relevantly similar to {Sappho} is not so hard to conceive. This may be a context in which no or little importance is attached to this or that set-theoretic principle, or in which *de re* modality is fixed by a way of representing {Sappho} that requires a match of highly extrinsic properties but not of intrinsic ones, or in which counterparthood to Sappho and counterparthood to {Sappho} are fixed in different ways (cf. Section 6.2). Each of these alternatives, and combinations of them, is available to the counterpart theorist, and none of them commits her to genuine impossible worlds in which ZF-set theory is violated.

*Objection 3.* (CT-G) seems to fail in cases of multiple realisability. We say that a type of mental state, like pain, is multiply realisable if – although pain is realised by a certain type of neurophysiological state in human beings – it could have been realised in another type of bodily state. For instance, there might be a Martian who feels pain when smallish cavities in his feet get inflated. Assuming that physicalism is the thesis that mental facts are grounded in physical facts,<sup>35</sup> the multiple realisability of pain seems to imply that the grounded fact could obtain without its grounds obtaining. The core of the problem is that cases of multiple realisability exhibit a mere one-way necessitation: the realiser necessitates what it realises but not the other way around. In fact, alleged cases of grounding that we associate with this modal profile apparently abound. For instance, because my bike is turquoise, it is also blue; but if my bike had been ultramarine, it would still have been blue. Or the fact that I exist is grounded in the existence of my parts, but, if mereological essentialism is false, I could have had other parts. Or suppose that the fact that there is a season is grounded in the fact that winter is a season; even if winter had never come, there would still be a season. In each of these alleged cases of grounding (for short, 'cases of 1N-grounding'), it seems that the necessitation is merely one-way. Suppose that '[*p*] is grounded in [*q*]' expresses such a case of 1N-grounding. The problem is that clause (ii) of (CT-G) seems to fail if the one-way necessitation in cases of 1N-grounding is interpreted counterpart-theoretically as the conjunction of the following claims: (i) there is an *m*-possible world *u* in which  $\langle p \rangle$  has a true counterpart but  $\langle q \rangle$  have no true counterparts and

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<sup>35</sup> See Poland 1994, 18; Schaffer 2013; Wilson 2014.

(ii) there is no m-possible world  $v$  in which  $\langle \mathbf{q} \rangle$  have true counterparts in  $v$  but  $\langle p \rangle$  has none. This is because, on the plausible assumption that every m-possible world is closer to our world than any m-impossible world, this conjunction implies that  $u$  is closer to our world than any world in which  $\langle \mathbf{q} \rangle$ , but not  $\langle p \rangle$ , have true counterparts. Yet, this conflicts with the closeness ordering involved in clause (ii) of (CT-G).

*Reply.* According to me, Objection 3 fails to appreciate that a counterpart theory for grounding is a theory according to which the grounds are truths *qua* grounds. This being appreciated, multiple realisability does not threaten the proposed account.

Say that some possible facts,  $[\mathbf{q}]$ , are *potential grounds* for a fact,  $[p]$ , if and only if, for any world  $w$ , if  $[\mathbf{q}]$  obtain together in  $w$ , then  $[\mathbf{q}]$  ground  $[p]$  in  $w$ . I take it that the specificity of cases of 1N-grounding is that the grounded fact, say  $[p]$ , is such that there is a list of pluralities of facts  $[\mathbf{q}^1]$ , ...,  $[\mathbf{q}^n]$  such that each member  $[\mathbf{q}^i]$  in this list is a potential ground for  $[p]$  and, for any two members  $[\mathbf{q}^i]$  and  $[\mathbf{q}^j]$  in this list,  $[\mathbf{q}^i]$  are intrinsically different to  $[\mathbf{q}^j]$ . I contend that, according to a counterpart theory for grounding, a context in which it is true that  $[p]$  is grounded in  $[\mathbf{q}]$  is a context in which  $[\mathbf{q}]$  are truths *qua* grounds for  $[p]$ . Following Lewis's (2003) use of the '*qua*  $\phi$ ' clause, I interpret this as meaning that, *qua* grounds for  $[p]$ ,  $[\mathbf{q}]$  are such that whatever could ground  $[p]$  is a way  $\langle \mathbf{q} \rangle$  could be. So,  $[\mathbf{q}]$  *qua* grounds for  $p$  are such that, for any potential grounds  $[\mathbf{q}^i]$  for  $[p]$ ,  $[\mathbf{q}^i]$  are among the counterparts of  $[\mathbf{q}]$ . The first outcome is that, even in cases of 1N-grounding, there is no m-possible world in which the grounds (*qua* grounds) have no true counterparts but the grounded fact does. The second outcome is that the closeness ordering on which (CT-G) relies is vindicated. Objection 3 relies on an interpretation of the one-way necessitation that arises in cases of 1N-grounding that is inadequate in contexts in which we assert that  $[p]$  is grounded in  $[\mathbf{q}]$  (*qua* grounds for  $[p]$ ).

I am not saying that there is no difference between cases of 1N-grounding and other cases of grounding. But I claim that the only difference that it makes within an adequate counterpart theory for grounding concerns the relative indeterminacy in *intrinsic resemblance* among counterparts of the grounds, not the validity of (CT-G). Nor am I saying that there are no legitimate contexts in which we can account for this difference in terms of modal differences. But I claim that these contexts are not grounding contexts, *i.e.* not contexts in which the grounds are conceived of as truths *qua* grounds.

By analogy, consider a word processor software like Word. Surely, it makes a difference whether Word can only run on DOS or whether it can run both on DOS and Mac OS. Suppose that I am a Word user and that which computer I will buy to replace my old PC is mainly determined by my desire to use Word. If Word can only run on DOS, then my choice is limited to PCs. But if Word can run on DOS and Mac OS, then I have a larger choice: I can buy either a PC or a Mac. Likewise, whether the grounded fact is multiply realisable makes a difference on the range of possible representatives for its grounds. If Word can only run on DOS, then there are important intrinsic

similarities among all my potential acquisitions: they are all PCs. By contrast, if it can run on both DOS and Mac OS, there are fewer intrinsic similarities among my potential acquisitions because there are many intrinsic dissimilarities between PCs and Macs. Still, if Word can run on both DOS and Mac OS systems, a context in which all I care about is having a computer to get Word running is a context in which PCs and Macs, *qua* computers on which I can get Word running, are such that intrinsic dissimilarities between them are irrelevant. By analogy, I claim that, if a derivative fact  $[p]$  has many potential grounds (alt. is multiply realisable), a context in which all I care about is ‘what grounds what?’ is a context in which, *qua* grounds for  $[p]$ , the facts that ground  $[p]$  are such that intrinsic dissimilarities between potential grounds for  $[p]$  are irrelevant. For instance, a context in which I wonder about what grounds the fact that there is a season is a context in which  $\langle$ winter is a season $\rangle$  *qua* ground for the fact that there is a season is such that intrinsic dissimilarities between winter, summer, spring, and autumn are irrelevant. The outcome is that, in this grounding context, possible summers, springs, and autumns, are counterparts of winter (*qua* season). And so  $\langle$ summer is a season $\rangle$ ,  $\langle$ spring is a season $\rangle$ , and so on, are counterparts of  $\langle$ winter is a season $\rangle$  *qua* ground for the fact that there is a season.

A counterpart theory for grounding is a theory of grounds as truths *qua* grounds. This being appreciated, alleged cases of 1N-grounding do not challenge (CT-G).

*Objection 4.* One may wish to object that, although (CT-G) does not yield a monotonic notion of grounding (cf. Section 4), it falls short of leading a sufficiently selective account of grounding. *Non-monotonicity* – the principle that ‘ $[p]$  is grounded in  $[q]$ ’ does not entail that, for any  $[x]$ ,  $[p]$  is grounded in  $[q]$  and  $[x]$  – is motivated by the belief that each of the facts among the grounds for a fact must be relevant to the obtaining of the grounded fact.<sup>36</sup> Call this belief the *Difference-Maker Principle*. The problem is that (CT-G) apparently conflicts with this principle. In order to see why, suppose that (15) is true, where  $a^1, \dots, a^n$  are all and only the actual parts of the Eiffel Tower and  $\langle A(a^1, \dots, a^n) \rangle$  is a proposition that represents their actual arrangement:

(15) The existence of the Eiffel Tower is grounded in  $[a^1, \dots, a^n \text{ exist}]$  and  $[A(a^1, \dots, a^n)]$ .

Intuitively, the inference from (15) to (16) is invalid:

(16) The existence of the Eiffel Tower is grounded in  $[a^1, \dots, a^n \text{ exist}]$ ,  $[A(a^1, \dots, a^n)]$  and the fact that bachelors are unmarried.

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<sup>36</sup> See Rosen 2010.



The Difference-Maker Principle explains why it is invalid: the fact that bachelors are unmarried is irrelevant to the existence of the Eiffel Tower. However, one may think that (CT-G) warrants the inference from (15) to (16) for the following reason. According to (CT-G), if (15) is true, then some world  $w$  in which  $\langle a^1, \dots, a^n \text{ exist} \rangle$  and  $\langle A(a^1, \dots, a^n) \rangle$  have true counterparts but  $\langle \text{the Eiffel Tower exists} \rangle$  doesn't is closer to the actual world than any world  $v$  in which  $\langle \text{the Eiffel Tower exists} \rangle$  has a true counterpart but  $[a^1, \dots, a^n \text{ exist}]$  and  $[A(a^1, \dots, a^n)]$  together don't. Yet plausibly, since  $\langle \text{bachelors are unmarried} \rangle$  is a necessary truth and  $\langle \text{the Eiffel Tower exists} \rangle$  isn't, every world in which  $\langle \text{bachelors are unmarried} \rangle$ , but not  $\langle \text{the Eiffel Tower exists} \rangle$ , has a true counterpart is closer to our world than any world in which  $\langle \text{the Eiffel Tower exists} \rangle$ , but not  $\langle \text{bachelors are unmarried} \rangle$ , has a true counterpart. If so, it seems that some world  $w$  in which  $\langle a^1, \dots, a^n \text{ exist} \rangle$ ,  $\langle A(a^1, \dots, a^n) \rangle$ , and  $\langle \text{bachelors are unmarried} \rangle$  together have true counterparts but  $\langle \text{the Eiffel Tower exists} \rangle$  doesn't is closer to our world than any world  $v$  in which  $\langle \text{the Eiffel Tower exists} \rangle$  has a true counterpart but  $\langle a^1, \dots, a^n \text{ exist} \rangle$ ,  $\langle A(a^1, \dots, a^n) \rangle$ , and  $\langle \text{bachelors are unmarried} \rangle$  together don't. If so, since  $\langle a^1, \dots, a^n \text{ exist} \rangle$ ,  $\langle A(a^1, \dots, a^n) \rangle$ , and  $\langle \text{bachelors are unmarried} \rangle$  together necessitate that the Eiffel Tower exists, (16) follows from (15) and (CT-G). Generalising, it seems that, according to (CT-G), for any necessary  $[x]$  and contingent  $[p]$ , if  $[p]$  is grounded in  $[\mathbf{q}]$ , then  $[p]$  is grounded in  $[\mathbf{q}]$  and  $[x]$ . This seems bad on the face of the Difference-Maker Principle.<sup>37</sup>

*Reply.* I agree that Objection 4 shows that counterpart theorists about grounding discourse must preserve the Difference-Maker Principle. However, I do not think that this implies modifying (CT-G). For counterpart theorists can address this objection by insisting that counterpart relations to the grounds must be *fine-tuned* for what they ground. Let me explain.

Counterpart relations are selection functions. They select respects of similarity that are relevant and important relative to our contextual goals and the way we refer to or conceive of objects and facts. But, depending on the context, we can be more or less liberal in our way of selecting respects of similarity. Say that a counterpart relation is *coarse-tuned* when it is fixed by attaching importance to *at least* those respects of similarity that are relevant to our contextual goals. By contrast, say that a counterpart relation is *fine-tuned* when it is fixed by attaching importance to *exactly those* respects of similarity that are relevant to our contextual goals. The distinction between coarse- and fine-tuned counterpart relations is context-sensitive. Grounding contexts are contexts in which we wonder about

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<sup>37</sup> The general problem arises from the conceivability of demolition scenarios in which  $[p]$ ,  $[q]$ , and  $[r]$  are such that  $[p]$  is grounded in  $[q]$ ,  $[r]$  is irrelevant to what grounds  $[p]$ , and yet it is more likely that  $[p]$  is demolished without both  $[q]$  and  $[r]$  being demolished than it is likely that both  $[q]$  and  $[r]$  are demolished without  $[p]$  being demolished. My reply to Objection 4 is meant to address any scenario of this sort. Cf. Section 4 on the analogy between building and grounding.

what grounds some fact or some kind of fact. Thus, in such contexts, which respects of similarity to the grounds are relevant is firstly determined by what the grounded fact is. The proposed solution to Objection 4 consists in insisting that, given the Difference-Maker Principle, a counterpart theorist about grounding can legitimately assume that only those grounding claims whose counterpart-theoretic translation involves a fine-tuned counterpart relation to the grounds are apt to be true. Grounding claims whose counterpart-theoretic translation involves a needlessly coarse-tuned counterpart relation to the grounds are pragmatically discarded. This being taken into account, the counterpart theorist can maintain that the inference from (15) to (16) is invalid and thus block objection 4.

In order to appreciate this strategy, consider first Lewis's (2003) counterpart-theoretic account of truthmaking. Roughly, following Armstrong, Lewis conceives of truthmaking as a necessitation relation. Then he argues that, given his counterpart theory, he can maintain both that Long, the cat, makes it true that Long is black and that truthmakers necessitate the truth of the propositions they make true, although Long is contingently black. According to the counterpart theorist, contexts in which it is true that Long is necessarily black are contexts in which every counterpart of Long is black. Lewis proposes that, by referring to Long as 'Long *qua* black', we fix a context in which great importance is attached to Long's blackness, so that in this context every counterpart of Long is black. This being assumed the existence of Long *qua* black necessitates that Long is black since every possible world in which Long has a *black* counterpart is a world in which the proposition that Long is black is true. So, on Lewis's account, Long *qua* black makes it true that Long is black.<sup>38</sup> But, on Lewis's account, Long *qua* black and fluffy also makes it true that Long is black. For, by calling Long 'Long *qua* black and fluffy', we also fix a counterpart relation to Long that is such that every counterpart of Long is black. However, there is an intuitive difference between calling Long 'Long *qua* black' and calling it 'Long *qua* black and fluffy' with respect to a context in which we wonder about what makes it true that Long is black. By calling Long 'Long *qua* black' the counterpart relation to Long is fixed by attaching importance to *exactly this* respect of similarity that is relevant to the truth of the proposition that Long is black. By contrast, by calling it 'Long *qua* black and fluffy' the counterpart relation to Long is fixed by attaching importance both to a relevant and an irrelevant respect of similarity. In my terminology, the first counterpart relation is fine-tuned, whereas the second one is needlessly coarse-tuned. Insisting that adequate counterpart relations must be fine-tuned would have allowed the Lewisian to say that Long *qua* black, but not Long *qua* black and fluffy, makes it true that Long is black.

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<sup>38</sup> See MacBride 2005, Bricker 2015, and Guigon 2015b on Lewis's views about truthmaking.

By analogy, my reply to Objection 4 is that the ban on needlessly coarse-tuned counterpart relations in grounding contexts blocks the inference from (15) to (16). According to the counterpart theorist, by asserting (15) we select a counterpart relation to the grounds that is adequately fine-tuned for our contextual goals: it is fixed by attaching importance only to respects of similarity that are relevant. By contrast, by asserting (16) we select a counterpart relation to the grounds that is needlessly coarse-tuned: by mentioning the fact that bachelors are unmarried in (16), we fix a counterpart relation to the alleged grounds by attaching importance to respects of similarity between bachelors that are irrelevant to what grounds that the Eiffel Tower exists. Since (16) fails to select an adequately fine-tuned counterpart relation, the counterpart theorist can maintain that (16) is false in the context in which it is asserted.<sup>39</sup>

Grounding contexts are contexts in which the truths that occupy the ground-position are truths *qua* grounds. This constrains the range of eligible ways of fixing counterpart relations. In particular, in grounding contexts, counterpart relations must be fixed by attaching importance to *exactly those* respects of similarity to the grounds that are contextually relevant to the obtaining of the grounded fact. So grounding contexts are contexts in which *de re* modality is governed by a way of fixing counterpart relations that is less liberal than in ordinary (monotonic) *de re* modal contexts. This being understood and assumed, (CT-G) does not need to be revised on the face of Objection 4.

## 6. Applications

There is a host of potential applications of a counterpart-theoretic interpretation of grounding discourse that together make it appealing. In this final section, I focus on two applications that illustrate the virtues that we can expect to derive from the flexibility of the proposed framework. First, I show how a counterpart theory for grounding allows us to address a recent objection to *Necessitation*. Then, I explain how counterpart-theoretic grounding allows us to make sense of monistic doctrines about what grounds what.

### 6.1. A defence of *Necessitation*

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<sup>39</sup> It may be worth repeating here that my aim is not to give a reductive analysis of grounding.

Alex Skiles (2015) offers a series of counterexamples to *Necessitation*, some involving temporal rearrangement, others accidental generalisations. I will focus on the second category of counterexamples.<sup>40</sup>

Skiles defines an accidental generalisation as a fact of the form  $[\forall x (Fx \rightarrow Gx)]$  such that it obtains in the actual world  $w_{@}$  but fails to obtain in some world  $w_I$  that has the same laws of nature as  $w_{@}$  and is such that some  $F$ -individual inhabits  $w_I$ . The fact that every swan in Switzerland is white and the fact that every solid gold sphere is less than a kilometre in diameter are his examples of accidental generalisations. Following Skiles's lead, I focus on the first of these examples.

Suppose that  $a_1, \dots, a_n$  are all and only the actual Swiss swans. We say that  $[a_1 \text{ is white}]$ ,  $\dots$ ,  $[a_n \text{ is white}]$  are all and only the actual *instances* of the accidental generalisation  $[\forall x (x \text{ is a Swiss swan} \rightarrow x \text{ is white})]$ . One may have thought that this accidental generalisation is *grounded in* its instances; but it isn't if *Necessitation* is true, or so Skiles argues. Assuming *Necessitation*, if it is true that the fact that every swan in Switzerland is white is grounded in  $[a_1 \text{ is white}]$ ,  $\dots$ ,  $[a_n \text{ is white}]$ , then every world in which all of  $[a_1 \text{ is white}]$ ,  $\dots$ ,  $[a_n \text{ is white}]$  obtain is a world in which it is true that every swan in Switzerland is white. But this is false because, the generalisation being accidental, there is a nomologically possible world in which  $a_1, \dots, a_n$  coexist with a black Swiss swan. So, if *Necessitation* is true, accidental generalisations are not fully grounded in their instances. According to Skiles, the argument shows that *Necessitation* should be rejected since maintaining it would commit us to dubious restricted *totality facts* such as the fact that  $a_1, \dots, a_n$  are the only Swiss swans.

But, adapting Lewis's (2003) and Lewis and Rosen's (2003) Humean version of *truthmaker necessitarianism*, counterpart theorists about grounding can maintain *Necessitation* without commitment to totality facts, or so I argue.<sup>41</sup> What is relevant to address Skiles's objection is Lewis's account of truthmakers for negative existentials (Lewis and Rosen 2003, 39). The proposal is that what makes it true that there are no unicorns in this room is this room *qua* containing no unicorns. By referring to the room as 'the room *qua* containing no unicorns', we fix a context in which great importance is attached to similarity with respect to containing no unicorns. By doing so, we select a counterpart relation between rooms such that every counterpart of the room contains no unicorns. The room *qua* containing no unicorns is necessarily such that it contains no unicorns. This is why the

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<sup>40</sup> It is worth mentioning that Skiles discusses and dismisses a response to his counterexamples involving temporal rearrangement that appeals to a counterpart theory for *modal* judgements about facts. But his reply is based on the assumption that the counterpart theorist commits herself to grounding realism. Skiles misses his target if, as I propose, the method of counterpart theory is applied to both *de re* modal and grounding idioms.

<sup>41</sup> Cf. my reply to Objection 4 in Section 5 on Lewis's account of what makes it true that Long is black.

room *qua* containing no unicorns necessitates the truth of the proposition that there are no unicorns in this room.

But accidental generalisations and accidental negative existentials are two sides of the same coin. The fact that there are no unicorns in this room *is* the fact that everything that is in this room is a non-unicorn. So the room *qua* containing no unicorns also makes it true that every  $x$  in this room is a non-unicorn. Yet, the room *qua* containing no unicorns is not a totality fact, it is just the room.

This indicates how a counterpart theorist about grounding can escape Skiles's objection to *Necessitation*. Let us introduce the plural name '[The swhits]' to refer collectively to the instances of the accidental generalisation that every swan in Switzerland is white, namely [ $a_1$  is white], ..., [ $a_n$  is white]. Then, the counterpart theorist can say that [The swhits] *qua* including only facts about Swiss white swans – or *qua* facts about all the swans that live in Switzerland – ground the fact that every swan in Switzerland is white. [The swhits] *qua* including only facts about Swiss white swans necessitate, in a Humean fashion, the fact that every swan in Switzerland is white. Yet, [The swhits] *qua* including only facts about Swiss white swans are just [ $a_1$  is white], ..., [ $a_n$  is white] taken together and conceived under a contextually salient and relevant counterpart relation.

Assuming a counterpart-theoretic interpretation of grounding discourse, we need no totality fact to get grounds that necessitate accidental generalisations.

## 6.2. Monistic grounding

Carrie Jenkins (2011) has maintained that an adequate account of grounding should be such that grounding is merely *quasi-irreflexive* rather than *irreflexive*.<sup>42</sup> I agree. Her argument is that a metaphysics enthusiast scientist may believe that S's pain is grounded in one of her neurophysiological states and then discover *a posteriori* that S's pain is identical to her neurophysiological state. According to Jenkins, it would be absurd for this scientist to withdraw her grounding claim on the basis of her discovery.

Consider by analogy the debate about material constitution. Philosophers who take *de re* modal idioms at face value derive from the fact that we ascribe different *de re* modal properties to a statue and the lump of clay constituting it – *e.g.* the lump of clay could have been reshaped, the statue couldn't – that the statue and the lump of clay are non-identical. But we are familiar with the idea that one can resist this inference by arguing that the statue and the lump of clay are a single thing under different guises, and counterpart theory has been used to do so (Lewis 1971). Jenkins's point about the quasi-irreflexivity of grounding is analogous: one can resist the inference from

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<sup>42</sup> See also Wilson 2014, 39.

asymmetrical intuitions about what grounds what to the conclusion that the ground and what it grounds are non-identical by arguing that the ground and the grounded are a single fact under different guises. A counterpart-theoretic treatment of grounding claims allows us to implement such monistic theses about what grounds what. In this final section, I wish to emphasise this by showing how the proposed framework allows us to maintain that grounding is merely quasi-irreflexive.

In order to illustrate how (CT-G) allows us to maintain that grounding is merely quasi-irreflexive, consider (17):

(17) The fact that S is in mental state M is grounded in the fact that S is in neurophysiological state N.

I want to show that (CT-G) allows us to coherently combine (17) with the claim that the fact that S is in mental state M is identical to the fact that S is in neurophysiological state N.

Following Lewis's (2003) suggestion, by designating S's state as 'S's state *qua* mental' we fix a context in which we attach great importance to psychological respects of similarity and little or no importance to physical respects of similarity. Likewise, by referring to S's state as 'S's state *qua* neurophysiological' we thereby create a context in which we attach great importance to neurophysiological respects of similarity and little or no importance to psychological respects of similarity. This gives rise to two counterpart relations: a *mental* and a *neurophysiological* counterpart relation that select each different counterparts to S's state.

On my account, counterpart relations for propositions are functions of counterpart relations for individuals and their properties. This means that, just as 'S's state *qua* mental' and 'S's state *qua* neurophysiological' select respectively a mental and a neurophysiological counterpart relation to S, '<S is in mental state M>' and '<S is in neurophysiological state N>' select respectively a mental and a neurophysiological counterpart relation to this proposition.<sup>43</sup>

(CT-G) allows the counterpart theorist to maintain that (17) is true if and only if (17') is the case:

(17') (i) <S is in neurophysiological state N> is true, and, for every m-possible world  $w$ , if <S is in neurophysiological state  $N$ > has a true *neurophysiological* counterpart in  $w$ , then <S is in mental state M> has a true *mental* counterpart in  $w$ , and

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<sup>43</sup> Since '<S is in mental state M>' involves the adjective 'mental' and '<S is in neurophysiological state N>' involves the adjective 'neurophysiological', I assume that we need not add a '*qua* clause' to fix the counterpart relation here.

(ii) some m-impossible world  $v$  in which  $\langle S$  is in neurophysiological state  $N \rangle$  has a true *neurophysiological* counterpart and  $\langle S$  is in mental state  $M \rangle$  has no true *mental* counterpart is closer to our world than any m-impossible world  $u$  in which  $\langle S$  is in mental state  $M \rangle$  has a true *mental* counterpart and  $\langle S$  is in neurophysiological state  $N \rangle$  has no true *neurophysiological* counterpart.

What is worthy of attention here is that, since (17') appeals to two ways of fixing the counterpart relation, it is, as intended, compatible with the claim that the fact that  $S$  is in neurophysiological state  $N$  is identical to the fact that  $S$  is in mental state  $M$ . Therefore, a counterpart-theoretic approach to grounding discourse allows us to coherently maintain asymmetrical intuitions about what grounds what without commitment to the non-identity of the grounds and the grounded.<sup>44</sup>

## 7. Conclusion

In this article, I have explored and defended a counterpart-theoretic interpretation of grounding discourse. This approach has many virtues. Among other things, it breaks the deadlock between those grounding theorists who take grounding discourse at face value and those grounding sceptics who wish to ban using grounding discourse, it dissolves objections to the principle that grounds necessitate what they ground, and it allows for monistic views about the ground and the grounded.

The proposal is not, and is not meant to be, a 'reductive analysis' of the realist notion of grounding that those philosophers who take grounding sentences at face value love and praise. For it constitutively relies on context-sensitive mechanisms that are characteristic of counterpart theory. Still, the grounding realist and my counterpart theorist about grounding can discuss about what

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<sup>44</sup> One may wish to object that since clause (ii) of (17') explicitly appeals to a *neurophysiological* counterpart relation to  $\langle S$  is in neurophysiological state  $N \rangle$  it conflicts with the possibility that  $[S$  is in mental state  $M]$  has grounds that are not neurophysiological. If so, it conflicts with the possibility that  $M$  is multiply realisable. Quite so. I concede that my focus on the *neurophysiological* counterpart relation to  $\langle S$  is in neurophysiological state  $N \rangle$  is a simplification. On the face of my reply to Objection 4 (cf. Section 5), the precise truth is that the counterpart relation to  $\langle S$  is in neurophysiological state  $N \rangle$  should be fine-tuned to select exactly those respects of similarity to the fact that  $S$  is in state  $N$  that are relevant to the obtaining of  $[S$  is in mental state  $M]$ . On the face of my reply to Objection 3 (cf. Section 5), if  $M$  is multiply realisable, these respects of similarity to the grounds, however, should not be specifically neurophysiological. Still, I take it that a context in which it is plausible that a mental state is identical to its realiser is a context in which it is not that plausible that this mental state is multiply realisable. This is why, according to me, the simplification is innocent here.

grounds what without their differences interfering too much, until they draw conclusions about the commitments of their respective interpretations. Nevertheless, grounding realists might well regard my counterpart theorist about grounding a false friend, a Humean and Quinean sceptic in Aristotelian clothing.<sup>45,46</sup>

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<sup>45</sup> See Lewis 1983b, 42 and Schaffer 2009.

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