How Negative Truths are Made True

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Identifying plausible truthmakers for negative truths has been a serious and perennial problem for truthmaker theory. I argue here that negative truths (in particular contingent negative existential truths) are indeed made true but not in the way that positive truths are. I rely on a distinction between "existence-independence" and "variation-independence" drawn by Hofmann and Horvath (2008) to characterize the unique form of dependence negative truths exhibit on reality. The notion of variation-independence is then used to motivate a principle of truthmaking for contingent negative truths.

1. Introduction

Negative truths have likely posed the greatest challenge to truthmaker theorists who think that all (or at least all contingent) truths have truthmakers. The challenge is that, prima facie, it is hard to see how a negative truth, e.g., <there are no unicorns>[1] that is concerned with the *non-existence* of something could be (or even needs to be) made true by the *existence* of some entity. To complicate matters, most truthmaker theorists accept Truthmaker Necessitarianism, the view that if an entity x makes a proposition p true, then necessarily, if x exists, then p is true.[2] This exacerbates the problem for it is quite difficult to identify some entity whose existence is sufficient for the truth of a proposition like <there are no unicorns>. Indeed, it appears on first reflection that every entity in the actual world,

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[1] I will abbreviate "the proposition that…" with angle brackets < , >.
[2] Armstrong (2004: 6), Smith (1999: 276), Fox (1987: 189), Rodriguez-Pereyra (2005: 18), Lowe (2009: 209), Molnar (2000: 83), and Cameron (2008: 413) accept Necessitarianism. Not everyone agrees that truthmaking is or involves necessitation, e.g., Cameron (2005), Schaffer (2010b: 311), Parsons (1999: section 2.1), and Heil (2000: 233). Briggs (2012) develops a sophisticated view of truthmaking without necessitation.

including the entire world itself, is compatible with the existence of a unicorn, an entity whose existence would render <there are no unicorns> false.

There are a variety of attempts by truthmaker theorists to provide negative truths with truthmakers. Russell (in)famously suggested in his *Logical Atomism* lectures (1985) that we need to accept the existence of negative facts to ground negative truths. More recently, Armstrong (2004) supplies negative truths with a truthmaker by postulating the "totality state," the state of the first-order states of affairs being all the states there are. Martin (1996) and Kusko (2006) have argued that absences or lacks account for how negative truths are made true, while others have attributed certain novel features to the world as a whole, e.g., Cameron (2008) claims that the world is essentially a world and has its parts essentially and Schaffer (2010a; 2010b) holds that the world is the one fundamental entity, being that on which all its parts depend.

I am not concerned to rebut these putative solutions in this paper, since there is already quite a bit of discussion of them in the literature.[3] Perhaps some of these solutions are viable, I cannot rule this out. Instead, I am going to suggest that it is more profitable to consider contingent negative truths on their own terms than to assume that if these truths are made true, then they must be made true in the way that positive truths are, viz. by being necessitated by the existence of some relevant entity.[4] In this paper I will suggest that while negative truths do indeed have truthmakers, they are made true in a different way than positive truths. Below I characterize the unique form of dependence on the world exhibited by negative truths. To do this, I rely on a distinction between "existence-independence" and "variation-independence" drawn by Hofmann and Horvath (2008: 305ff.) and go on to

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[3] For instance, see Lewis (1999: 204ff.), Cox (1997), Molnar (2000: sections 2 through 7), Dodd (2007: section 2), Cameron (2008: 419), Merricks (2007: chapter 3), and Armstrong (2004: chapter 5) among others. Also see my (2013) for critique of the views of Armstrong, Cameron, and Schaffer.

[4] Below, in footnote 26, I will give some reasons for why I focus on contingent negative truths.

formulate a principle of truthmaking for negative truths, i.e., a principle setting out necessary and sufficient conditions under which a proposition is made true by something. The approach adopted here allows us to respect the intuitive differences between positive and negative truths and articulate the way in which negative truths are made true by entities, while releasing us from the need to postulate controversial truthmakers to necessitate negative truths.

Before proceeding, let me address a possible concern. The idea that truth depends on *what exists* is a relatively simple and straightforward way to cash out the intuition that truth depends on being, as well as the correspondence intuition that truths correspond to reality. But some may find this unnecessarily strong, preferring instead the view that truths, especially negative truths, depend on *how things are*. To say that <there are no unicorns> depends on how things are, is simply to say that <there are no unicorns> is true because there are no unicorns.[5] However, I'm not convinced that this is sufficient to account for the dependence of negative truth on being. To say that the truth depends on how things are sounds innocuous enough, but it is not entirely clear how we should understand the phrase 'how things are.' In the literature, 'how things are' is typically contrasted with 'what exists.' Dodd (2001: 74, 2007: section 6), for example, argues that inessential predicative truths such as <the ball is red> depends on how the ball is rather than what exists, i.e., a truthmaker, such as a state of affairs or a trope. The difference between a world in which the proposition is true and one in which it is false is simply a difference in *how things stand* with what exists, i.e., which entities have which properties. He believes we can account for the truth of this proposition simply by saying that the ball instantiates redness (2001: 74). At most, this commits us to the existence of the ball and to the property *redness* but not to a truthmaker

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[5] A number of authors seem to hold a view like this, e.g., Merricks (2007: xiii), Hornsby (2005: 44ff.), Dodd (2007: 396ff.), and Melia (2005: 69). Thanks to an anonymous referee for raising this objection.

for the proposition. Can we similarly say that the truth of <there are no unicorns> depends upon how things are—i.e., entities instantiating properties—rather than what exists? Not easily. It is not clear how certain things are such that <there are no unicorns> is true.[6] We could say that 'there being no unicorns' is how something—perhaps the world—is. But this seems to commit us to the existence of the world and to a property *not containing unicorns*, an unattractive option for those wishing to avoid truthmaker commitments. Suppose, instead, we say that <there are no unicorns> depends for its truth on how things are since 'there being no unicorns' is *what is the case*. But then something either *makes* it the case that there are no unicorns or nothing does.[7] If something does make it the case that there are no unicorns, then we ought to figure out which things/facts serve as its ground; presumably this ground will be the ultimate truthmaker for <there are no unicorns>. But if nothing does, then it seems we must regard its being the case that there are no unicorns as a fundamental or primitive feature of reality (cf. Bennett 2011: 189). Both options are unappealing for the defender of the view we are considering. At this point it is not clear in what sense negative truths depend on how things are.[8] For the view under consideration is that <there are no

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[6] Another dissimilarity between <there are no unicorns> and <the ball is red> is that the difference between a world in which <there are not unicorns> is true and one in which it is false is a difference in *what exists*, unlike the case with <the ball is red> (if Dodd is correct).

[7] See Bennett (2011: 188ff.) on "case-making." Answering the question 'what explains why <there are no unicorns> is true?' with 'that there are no unicorns' leads naturally to the question 'what makes it the case that there are no unicorns?' It is not obviously implausible to think that this question could be answered in terms what there is and how it is. So I don't see why it is always "confused" or "perverse" to try to account for negative truth in terms of what exists as Melia (2005: 69) and Merricks (2007: 66) say, respectively.

[8] Perhaps there are other ways to understand 'how things are,' 'depends,' and 'being' than the ones I'm considering. Merricks says that truth "trivially" depends on being. He writes, "*That hobbits do not exist* is true because hobbits do not exist. And so on. And so we might say that truth 'depends on the world'. But such 'dependence' is trivial" (2007: xiii). Merricks never explains the distinction between substantial and trivial dependence. See Bennett (2011: 188ff.) for discussion. Similarly, Smith and Simon (2007: 81-82) imply that there is a non-literal way of understanding the phrase 'a way the world is,' but the notion is never explained. Hornsby (2005: 44) and Dodd (2007: 396-400) suggest that the dependence of truth on being is, in some sense, conceptual. Both explain the asymmetry between '<*p*> is true' and '*p*' in terms of the latter being conceptually more basic than the former; it takes less to understand the latter than the former (which involves the notions 'true' and 'proposition'). Prima facie, it is hard to see how conceptual asymmetries can serve to explicate the dependence of truth on being, since presumably being is not conceptual in nature. However, Dodd (2007: 399-400) claims that the conceptual asymmetry between '<*a* is F> is true' and '*a* is F' "is a counterpart of" the

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unicorns> depends for its truth on how things are, but *not* on what exists, *not* on what

properties are instantiated, and *not* on what is the case. In fact, the view does not seem to be

any different from one that altogether denies that negative truth depends on being.

On the other hand, I do understand how negative truths could depend for their truth

on being if they depend on what exists. So I will proceed on the tentative assumption that

we want to provide negative truths with truthmakers, if we think they depend on being at all.

The above considerations may not be decisive against every alternative to truthmaker theory,

nor do they demonstrate that negative truths must have truthmakers.[9] Therefore, the thesis

of this paper may be read conditionally: if you think negative truths depend on being, then

the following is a promising account of how negative truths depend on what exists in the

world beyond them.[10]

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identity dependence between <*a* is F> and its constituents *a* and F. Yet even if the identity dependence
between <*a* is F> and its constituents serves to explain how the truth of <a is F> depends on being, Dodd
says nothing about how to apply this to negative truths. Semantic descent from '<a is F> is true' leads us to *a*
and F, but to what does semantic descent from '<there are no unicorns> is true' lead? If it leads to nothing,
then the appeal to conceptual asymmetries reflecting identity dependencies in the world has not explained how
<there are no unicorns> depends for its truth on being.

[9] The thesis that all truths have truthmakers ("Truthmaker Maximalism") is controversial and has been
challenges on a variety of fronts. A number of authors hold that negative truths do not need truthmakers, e.g.,
Lewis (1999: 204), Melia (2005: 69), Mellor (2003: 213), Merricks (2007: 66), Mulligan, et al. (1984: 315), Saenz
(2014: 92ff.), and Simons (2005: 255ff.). It is not feasible to address all these arguments, which is why below I
condition my thesis on the acceptance of, or at least sympathy for, truthmaker theory. Nevertheless, there are
arguments for Maximalism that should be mentioned. Cameron (2008: 411) argues that once we've absolved
some truths from needing truthmakers, there is no motivation for thinking that any truth needs a truthmaker
(which he regards as implausible). Fiocco (2013: 14ff.) argues that denying that a truth has a truthmaker leads to
a contradiction. Jago (2012: section 4) argues that non-Maximalism collapses into Maximalism because the
former is committed to truthmakers for negative truths that are entailed by certain positive truths. Rodriguez-
Pereyra (2005) argues that truths are grounded in what there is since grounding is a relation and relations relate
entities. (See Hornsby (2005) for response and Rodriguez-Pereyra (2009) for rejoinder.) Finally, some have
suggested that an unpalatable consequence of non-Maximalism is a commitment to a dualistic view of truth
itself where we have grounded and ungrounded truth. See my (ms.) for this argument. Barker and Jago (2012:
136) also flag this as a consequence of non-Maximalism. Saenz (ms.), a non-Maximalist, recognizes and
embraces this consequence of the view.

[10] Or perhaps, if your only reservation about truthmakers for negatives is the lack of attractive positions
currently on offer, then the following is a promising account of how negative truths depend on what exists in
the world beyond them.

2. Negative and Positive Propositions

Intuitively, positive truths, such as <some dogs exist> and <the rose is red>, are those that state that something *is*: that something exist, that something has a property, or that something stands in a relation to something else. Negative truths, such as <there are no Hobbits> and <the rose is not black>, are those that state that something *is not*: that something does not exist, that something lacks a property, or that something does not stand in a relation to something else.[11]

Many find it plausible to think that positive truths such as <Spot exists> are made true by the existence of entities that necessitate the truth of these propositions. Is it also plausible to think that negative truths are made true by the existence of relevant entities that necessitate their truth? Truthmaker Maximalists probably think so because they want to have a unified account of truthmaking. I suspect that it is also because they assume that the dependence of a positive truth like <Spot exists> on the existence of the dog Spot is a paradigm of truthmaking. They assume, in other words, that if every truth is made true, then each is made true in exactly the same way (e.g., by being necessitated by some entities that it is about). But I think that this generalization from the case of positive truths is problematic

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[11] Cf. Molnar (2000: 72). Molnar (2000: 72ff.) worries that we cannot identify a formal criterion for distinguishing positive from negative truths, but holds out hope that we will be able to identify which predicates pick out positive properties, something which can only be done via an *a posteriori* investigation into what properties there are. While drawing the distinction between positive and negative truths may be difficult, denying the distinction is a substantive, unintuitive, and controversial position. The assumption that there is a distinction between positive and negative truths should be considered the default position given that both proponents and detractors of Maximalism rely on the distinction. Proponents of Maximalism often attribute importantly different truthmakers to positive truths than they do negative truths (e.g., Cameron (2008: 413, 418) and Armstrong (2004: chapters 5 and 6). Moreover, if there weren't a distinction between positive and negative truths, then it would not be clear why truthmaker theorists (or correspondence theorists of truth) face the challenge of providing negative truths with truthmakers (or correspondents), a challenge they clearly do seem to face. Those who deny that negative truths have truthmakers (e.g., Lewis (2001: 610), Bigelow (1988: 133), Simons (2007: 255-6), and Mellor (2003: 213)) are committed to a distinction between negative truths and other truths, for they must have some criteria with which to distinguish those truths without truthmakers from the others. Mumford (2005, 2007) is one of the few to bite the bullet and deny the existence of negative truths altogether. However, his denial is primarily motivated by the problem of providing truthmakers for negatives rather than any difficulty with drawing the positive/negative truth distinction (2007: 46). This provides prima facie justification for the assumption that there is a distinction between positive and negative propositions.

and is needlessly complicated. The reason it is problematic is familiar. There seem to be no ordinary, uncontroversial or non-suspicious[12] entities that are suitable (i.e., necessitating) truthmakers for negative existential truths. We could be justified in postulating such entities if there were compelling reasons to think that every truth needs to be necessitated by some entity, but truthmaker theorists have notoriously had a hard time arguing for either thesis.[13]

The reason that requiring negative truths (especially negative existentials) to be made true in the same way as positive truths is complicated is this: it forces us to identify some entity whose *existence guarantees* the truth of a proposition that intuitively represents the *non-existence* of something. Positive existentials, by contrast, represent the *existence* of something (or, perhaps, represents some entity *as existing*). This difference helps explain why identifying truthmakers for positive truths is relatively easy but for negative truths relatively hard. Since the former represent something as actually being the case, all it takes to make them true is that the world *be* as they represent it as being; their truthmakers constitute the world's being as they represent it as being. But because negative truths represent the non-existence of something, it is not clear how the existence of some entity could constitutes the world's being such that something else does not exist. Since the truth-value of a proposition not only has to do with how the world is but also with the nature of the proposition itself, any account of how propositions are made true should take into account this difference between positive and negative propositions.

If this gloss on the difference between negative and positive existentials is correct, then this suggests, intuitively, that if a positive truth *p* is true, then *p* is true because of the

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[12] 'Suspicious' entities are those that appear to be postulated for the sole purpose of providing some truths with truthmakers. See Sider (2003: chapter 2) and Merricks (2007: 35) on "suspicious" ontologies.

[13] Even Armstrong, Maximalism's most prominent defender, admits "the truth-maker principle seems to me to be fairly obvious once attention is drawn to it, but I do not know how to argue for it further" (1989: 89). See footnote 9 above for a list of other attempts to argue for Maximalism. See footnote 35 below on some problems facing arguments for Necessitarianism.

existence of some entity, otherwise *p* is false, but conversely that if a negative truth *q* is false, then *q* is false because of the *existence* of some entity, otherwise *q* is true.[14] To see this, consider the following true propositions,

(1) There are no unicorns,
(2) There exist dogs,

and the following false propositions,

(3) There are no human beings,
(4) There exist flying pigs.

The negative existential (1) is true, but not, it seems, in virtue of the existence of any particular entity, whereas the negative existential (3) is false and false, it seems, in virtue of the existence of human beings.[15] The case is reversed when we look at (2) and (4): (2) is true and true in virtue of the existence of dogs while (4) is false, but not false in virtue of the existence of a particular entity. So, true negative existentials (like (1)) and false positive existentials (like (4)) are in the same boat: neither have their truth-values in virtue of the existence of any particular entity. This suggests that we treat true positive existentials and false negative existentials similarly and true negative existentials and false positive existentials similarly. The former pair have their truth-values in virtue of the existence of particular entities whereas the latter pair do not. I said above that the Maximalist *needlessly* complicates things by requiring every negative existential to have a necessitating truthmaking. This is because there is a perfectly good way in which negative existentials are made true that does not require the existence of an entity that necessitates each one. This form of truthmaking, which I present below, not only relieves us of the need to postulate new entities as truthmakers for negative existentials, but it also takes into account the unique way in which

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[14] Simons (2005: 255) and Saenz (2013: 93) talk of negatives being true by 'default.'
[15] This example casts doubt on the thought that false propositions are only ever false because they lack truthmakers. See Schaffer, for instance, who says "falsehoods are false because they lack a (successful) truthmaker" (2010b: 317).

these propositions represent the world.

3. Existence-Independence and Variation-Independence

Let's keep (1), the proposition *that there are no unicorns*, as our example of a true negative existential. If I am right that there is no entity that necessitates the truth of (1), then (1) is true independently of each and every existing entity. This kind of independence is what I will call, following Hofmann and Horvath (2008), "existence-independence." The truth-value of a proposition p is existence-independent of an entity x if it does not depend on the existence of x. If p's truth is existence-independent of x, then the truth-value of p is whatever it is, no matter whether x exists or not (cf. Hofmann and Horvath (2008: 306)). To make this notion more precise, consider the ways in which the truth-value of a proposition p and the existence or non-existence of a certain entity x can co-vary:

(a) x exists and p is true.
(b) x exists and p is false.
(c) x does not exist and p is true.
(d) x does not exist and p is false.

Let us say that if (a), (b), (c), and (d) are *all* possible with respect to p and x, then p's truth-value is existence-independent of x. If, however, x's existence makes a difference to p's truth-value and hence if it is not the case that (a), (b), (c), and (d) are all possible with respect to p and x, then p's truth-value is existence-dependent on x.[16] I do not intend this to be a

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[16] Different entities may 'make a difference' to the truth-value of different propositions in different ways. For example, <Fido exists> is existence-dependent on Fido the dog, since neither (b) nor (c) are possible with respect to this proposition and Fido. Similarly, <some dogs exist> is existence-dependent on Fido because (b) is not possible with respect to this proposition and entity. But unlike the previous example, (c) is possible for <some dogs exist> and Fido, since this proposition is true as long as *some* dog or other exists. The difference in these two cases tracks the difference between *rigid* and *non-rigid* or *generic* dependence. <Fido exists> rigidly depends for its truth on Fido since it is true in virtue of Fido being the very entity he is. On the other hand, <some dogs exist> generically depends for its truth on Fido because it is true in virtue of Fido being a dog. When a proposition/entity pair fails (b) and (c), then the proposition rigidly depends upon the entity for its truth; when a proposition/entity pair fails only (b), then the proposition generically depends upon the entity for its truth. It is also important to note that being existence-dependent upon an entity is not sufficient for

definition of existence-dependence, which, as a *dependence* notion, is not to be defined purely in modal terms.[17] To be a dependence notion, we would have to require, perhaps, that x's existence asymmetrically fixes or determines p's truth-value or that x's existence explains or is responsible for p's truth-value. The notion of existence-dependence is a very general conception of one thing's existence being a determining factor for something else (in this case, a proposition's truth-value). As such, the notion may be explicated in a number of ways, perhaps, e.g., in terms of grounding or ontological dependence.[18]

It appears that for all x, (1) is true existence-independently of x. Does it follow that the truth of (1) has no connection to reality, that (1)'s truth 'floats free' of being? Not at all. There is a different sense of independence with respect to which (1) is *not* independent of reality. This other sense of independence, again following Hofmann and Horvath, is called "variation-independence" (2008: 306).[19] The truth-value of a proposition p is variation-independent of some entity x if p's truth-value does not change with any *possible* variation of or change in x; no matter how x changes, p's truth-value does not change. Conversely, p's truth-value is variation-dependent on x if p's truth-value does change with some possible variation of or change in x.[20] While a negative existential truth like (1) is existence-

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truthmaking. <The rose is red>, for instance, existence-depends on the individual rose because (c) is not possible with respect to this proposition and the rose. But most do not consider the rose to be a plausible truthmaker for this proposition, since it's possible for the rose to exist and the proposition be false, i.e., (b) is possible. At best, when a proposition/entity pair fails only (c), the entity *helps* make the proposition true.

[17] Hence, existence-dependence should not be conflated with existential/modal dependence, according to which, if x depends on y, then necessarily, if y exists, then x exists. See Fine (1994; 1995: 270ff.).

[18] See Schaffer (2009), Audi (2012a/b), and Fine (2012) for accounts of grounding. See Lowe (2009), Fine (1995), and Koslicki (2012) on ontological dependence. Thanks to an anonymous referee and X for encouraging me to clarify that existence-dependence should not be defined purely in modal terms.

[19] Hofmann and Horvath draw the existence/variation independence distinction to defend the notion of metaphysical analyticity. They suggest that analytic truths are variation but not existence independent of reality, just the reverse of what I'm suggesting for negative existential truths. I am unsure whether they would endorse the use to which I'm putting their distinction.

[20] A "variation" in x, let us say, is some change in x, i.e., gaining or losing a property, relation, or part. We should not, I think, include x's coming into or going out of existence as a change in x. If we did, then every instance of existence-dependence would also be an instance of variation-independence. This restriction on

independent of each and every entity, it is plain that it is not variation-independent of reality as a whole[21]; it is not true independently of any possible variation in what there is and how it is. Even though a truth like (1) is not necessitated by the existence of any entity, there are plainly ways in which reality could vary that would change (1)'s truth-value, to wit: if a unicorn came to exist (and the other existing entities came to stand in new relations to the unicorn), then (1) would false.

With the distinction between existence and variation independence in hand, we can articulate the differences between our examples (1), (2), (3), and (4) more perspicuously. The truth-values of (1) and (4) are existence-independent of each and every entity, but not variation-independent of reality as a whole, whereas the truth-values of (2) and (3) are not existence-independent of each and every entity, but are variation-independent of the facts about particular dogs and humans, respectively.[22] Admittedly, both (1) and (2) variation-depend on reality as a whole: (1) would change from true to false if a unicorn came into existence and (2) would change from true to false if all dogs ceased to exist. But variation-dependence cannot be the whole story of truthmaking for positive truths such as (2), for the simple reason that positive truths are *also* existence-depend on certain entities that explain and necessitate their truth-value. Positive truths state that some particular things exist, which gives us reason to think that they depend for their truth on the existence of those particular things and not merely on possible changes in reality as a whole. Any account of how a positive truth like (2) is made true should acknowledge that it depends for its truth on something more specific than the whole of reality, viz. the existence of certain entities (dogs)

what counts as a change allows us to say that p's being existence-dependent on x for its truth-value does not entail p's being variation-dependent on x for its truth-value.

[21] I'll use 'being,' 'reality as a whole,' and 'the world' interchangeably in this paper. More on how I am using 'the world' below.

[22] Cf. Hofmann and Horvath (2008: 306).

that it represents as existing.

The fact that (1) and (2) exhibit different forms of dependence on what there is—(1) is variation-dependent while (2) is existence-dependent—provides a reason for treating truthmaking for positive and negative truths differently. However, we are still left with the task of articulating what it is for a negative truth to be made true, something we can do by formulating a principle of truthmaking for negative truths.

4. Truthmaking for Negatives

The fact that contingent negative existential truths are existence, but not variation, independent of reality suggests that a principle of truthmaking in terms of *supervenience*—a "truth supervenes on being" (TSB) principle[23]—is appropriate for these truths. The idea of supervenience is (roughly) the idea that there is no difference in one thing (or set of things) without a difference in another thing (or set of things). On the face of it, the view that negative truths are variation-dependent on reality seems just to be the idea that negative truths supervene on reality. But it is widely acknowledged that supervenience, like other generic modal relations (e.g., necessitation), only indicate patterns of covariation, i.e., they only indicate that one thing is always the case when another is. As such, it sometimes fails to capture the ontological priority of one thing to another or the asymmetrical dependence of one thing on another (after all supervenience is an non-symmetrical relation).[24] Indeed, TSB principles are often rejected for failing to capture the intuition that truth depends on being because being and truth symmetrically supervene on each other.[25] The idea that there is no

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[23] See Bigelow (1988: 133) and Lewis (2001: 612) for influential TSB principles.
[24] See Bennett and McLaughlin (2011: section 3.5) and Horgan (1993: section 8) on how supervenience falls short in capturing the nature of ontological dependence.
[25] Merricks (2007: chapter 4), Rodriguez-Pereyra (2005: 18-19), and Dodd (2001) should be consulted for critique and discussion of TSB principles.

difference in truth without a difference in being is essential to our account of how negative truths are made true, but it needs to be supplemented.

The thesis that negative truths are variation-dependent on reality, recall, is the thesis that the truth-value of a negative truth would change with certain possible variations or changes in reality (in particular with changes in what exists). This should be understood to mean that it would *only be in virtue of* a change in being that there would be a change in the truth-value of p. This claim contains two important components: (i) *Only* a change in being can render a change in a negative truth p, i.e., changes in what exists *alone* and not, for instance, changes in the truth-values of other propositions would be responsible for a change in p's truth-value and (ii) that p's truth-value would change only *in virtue of* a change in being—hence, being would not change in virtue of a change in p's truth-value—indicates that p asymmetrically depends on being for its truth-value. Obviously, not every change in being would render a change in p's truth-value; being would have to change in a specific way, viz. by containing an entity in virtue of which p would be false: p's false-maker (more on this to follow). So in addition to the thought that there is no difference in negative truth without a difference in being we need the idea that it is in virtue of changes in what exists alone that p's truth-value would change.

Another important feature of true propositions is that they are discriminating in the sense that only what they are *about* is relevant to their truth-value. Admittedly, it is difficult to say what a proposition is about, especially negative existentials. Nevertheless, if negative existentials are about any *existing* entities—and not unicorns, Hobbits, werewolves, or the world's lacking these things, none of which exist—they would seem to be about that portion of being of which they say that something does not exist. In other words, negative existentials are about their domains of quantification. (1) says that there are no unicorns

simpliciter, i.e., that there are no unicorns in our most unrestricted domain of quantification, which is the world itself. <There are no Arctic penguins> is about the Arctic and <there is no beer in the refrigerator> is about the refrigerator. This fits nicely with the account of variation-dependence given above. Any negative existential p is variation-dependent upon what p is about, i.e., p's domain of quantification, for it would only be in virtue of a change in that domain—in particular, a change in what exists—that there would be a change in p's truth-value. It would, for instance, only be in virtue of the world changing by gaining a unicorn that (1) would change its truth-value; it would only be in virtue of the Arctic gaining a penguin that <there are no Arctic penguins> would change its truth-value; it would only be in virtue of the refrigerator gaining a beer that <there is no beer in the refrigerator> would change its truth-value. In light of the foregoing analysis, I suggest the following principle of truthmaking for contingent negative truths:

(TM_N)   For any entity x and contingent negative truth p, x is a truthmaker for p iff p is about x and it would only be in virtue of a change in x that p would be false, viz. a change such that at least one entity would exist, which actually does not, in virtue of which p is false.

This principle captures the *asymmetrical* variation-dependence between each contingent negative truth and whatever is relevant to its truth in the world beyond it.[26] A number of

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[26] My primary aim is for TM_N to capture the way in which negative existential truths are made true. However, TM_N can be applied to contingent negative predications such as <liquid L has no odor>. Plausibly, this proposition is about liquid L and it would only be in virtue of a change in L that the proposition would be false. The relevant change would be a change in L's olfactory qualities. This would be a change in existence since L's coming to have the property *smelling sulfurous* is the coming into existence of a state of affairs or a trope. But one might think that the difference is not in what exists, but in *how* L is. In this case, we would have to consider the nature and scope of falsemaking. See below for a principle of falsemaking.

Can and should TM_N be extended to *necessary* negative existential truths such as <there are no square circles>? I think it can be, but only trivially. The second conjunct on the right-hand side of the bi-conditional is equivalent to this conditional: if p were false, then p would only be false in virtue of a change in x. Since no necessary negative is false, the antecedent is always false; hence the conditional is always true for the substitution of any necessary negative truth. Despite this, I do not think we should extend TM_N to necessary negative truths. Such truths cannot change their truth-values; they are true in spite of any possible change in being. As such, they do not depend for their truth-value on possible variations in what exists, i.e., they do not variation-depend on being. If necessary negative truths are made true, I suspect that their truthmaking involves existence-dependence. Though I do not want to defend this here, it seems reasonable to me to think that

comments on this principle are in order.

First, to account for the ways in which being would have to change for a negative truth to change its truth-value, TMN employs the notion of a proposition being 'false in virtue of' the existence of an entity. Hence, we need a principle of *false-making* to supplement TMN. Fortunately, such a principle is not hard to formulate. Consider again our example (1). If (1) were false, it would be made false by the existence of a unicorn. The existence of a unicorn necessitates the falsity of this proposition, i.e., necessarily, if a unicorn exists, then (1) is false. Moreover, the existence of any unicorn is relevant to the falsity of (1) because (1)'s *positive* counterpart <there are unicorns> is about any unicorn.[27] Hence, the principle of false-making FMN:

(FMN)   For any entity x, contingent negative p, and p's positive counterpart q, x is a false-maker for p iff x is one of the entities that necessitates the falsity of p and x is one of the things that q is about.

Second, on my account of truthmaking for negative truths that say that something does not exist *simpliciter*, e.g., (1), it is 'being,' 'reality as a whole,' or 'the world' that serves as their truthmakers. I think this because only changes in the world as a whole would be responsible for changes in the truth-value of such propositions. The term 'the world' is

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<there are no square circles> is made true by squares and circles or perhaps the properties being a square and being a circle. Given the nature of these properties, they cannot be instantiated by one and the same thing at the same time. Is it a problem that TMN doesn't apply to necessary negative truths? Admittedly, it does reduce the unity of the view. On the other hand, some philosophers deny that necessary truths need truthmakers. If they are correct, then TMN provides a unified account of how negatives are made true. But even if they are wrong, contingent negatives have caused enough problems for truthmaker theorists that a solution to their truthmakers would be significant boon to the project. Thanks to an anonymous referee for prompting me to think further about the scope of the account.

Another referee for this paper suggested that TMN may face a form of Parmenides' Paradox for the sentence "There is nothing this sentence is about." I am inclined to say that the proposition expressed by the sentence—if it in fact expresses any proposition—is just false since it is about itself.

[27] One might be skeptical that <there are unicorns> is about any particular unicorn U. Admittedly, <there are unicorns> is not about U in the same way that <U exists> is about U. Still I think we can say that <there are unicorns> is about U in virtue of U satisfying the predicate 'being a unicorn' (or perhaps instantiating the property *being a unicorn*). <U exists> is, let us say, *directly* about U, while <there are unicorns> is *indirectly* about U.

notoriously ambiguous and to make matters more complicated a number of other

truthmaker theorists (namely Cameron (2008) and Schaffer (2010)) also hold that 'the world'

serves as a truthmaker but seem to use the term quite differently. So let me say something

about how I am using 'the world.' By 'the world' I do *not* mean an abstract entity (composed

of propositions or states of affairs) that is actualized. I take 'the world' to refer to whatever is

the sum of everything that exists (or, if you like, what exists and what properties and

relations are instantiated). Perhaps 'the world' refers to different sums at different times,

though I do not want to presuppose a particular view of temporal reality here (e.g.,

presentism, growing block, or eternalism). What I do want to say is that it is possible for the

world to change, i.e., it is possible for the 'the world' to refer to a different sum of entities

than it in fact does.[28] The world can change in (infinitely) many ways: it can gain parts, lose

parts, and its parts can gain or lose properties/relations, etc. But when we say that a negative

existential truth like (1) would change its truth-value only in virtue of a change in the world,

what is it exactly that changes in the world? Certainly, the world as whole would have

changed intrinsically by gaining a proper part it did not have, namely a unicorn. Proper parts

of the world would change too with the addition of a unicorn. Such an addition might only

bring about an extrinsic or 'Cambridge' change in those proper parts of the world insofar as

those entities would come to instantiate new properties and relations they previously did not

have.[29] To illustrate more generally, suppose the world W is composed of two proper parts x

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[28] I write in terms of the world as a whole changing in time, but we need not make any temporal references to
make the point: it is possible for the world to vary by simply having one or more entities than it actually does.
So the possibility I'm discussing can be given a temporal or modal reading. The temporal reading is that
possibly, the world at time t_2 contains one or more entities than the world at t_1 (where t_1 is earlier than t_2). Read
modally, it says, possibly, there is a counterpart v of the actual world w that contains everything w contains and
some more. See Pawl (2013) of the interaction between principles like these and Truthmaker Necessitarianism.
[29] These are the changes the world would undergo if it simply expanded to include a unicorn and everything
else remained the same, e.g., if the world expanded to include an "island universe" (i.e., a universe
spatiotemporally disconnected from our universe), a proper part of which is a unicorn. See Parsons (2006: 594)
for discussion of this possibility and why it entails that the actual configuration of the universe does not

and y. Now suppose some entity z comes into existence. W gains a new proper part; it is now composed of x, y, and z and so has changed intrinsically. Parts x and y, however, have not changed intrinsically, only extrinsically insofar as they come to stand in new relations R_1 and R_2, respectively, to z. According to TMN, W would be the truthmaker for <there is no z>, for it was the thing that changed the truth-value of this proposition. It is important to note that the adherent of Necessitarianism cannot accept that the world could change by the mere addition of some entity, for she thinks that any addition of an entity x necessitates the removal of another entity y, which is the necessitating truthmaker for the negative existential <x does not exist>.[30] I think this is a drawback of Necessitarianism, for it does at first glance seem possible for the world to expand or contract by the mere addition or subtraction of something (cf. Merricks 2007: 71). The employment of variation-dependence rather than existence-dependence in the account of truthmaking for negatives obviates the need to postulate something that will exclude the existence of unicorns, Hobbits, and dragons, etc.

The idea that the world is (or is a constituents of) a truthmaker for negative existential truths is not novel. One view, critically discussed by Merricks (2007: 46ff.), is that what makes <there are no Hobbits> true is the world instantiating the property *being such that*

necessitate the truth of <there are no unicorns>. Nevertheless, there may be other ways that the world would be different if unicorns existed. If a unicorn were to exist in my office, certain things would be different, e.g., the configuration of air molecules at a particular location would be different than it in fact is. Perhaps more drastic changes would also be required, e.g., life on earth would have a different evolutionary history than it in fact does, in order to produce unicorns. And if unicorns have magical powers, as their mythology sometimes suggests, then it is likely that the laws of nature would be different too. But if the unicorn exists on some distant, not-yet-discovered planet, then evolutionary history on earth would remain unchanged; the only change would be in the history of that distant planet. In general, the changes undergone by the world needed to make negative existentials false will be more-or-less significant depending upon what the false-maker is, as well as when and where the false-maker comes into existence.

However, Kripke (1980: 23-24, 156-158) argues that unicorns and other mythical creatures are not possible objects since their mythology doesn't specify their essential traits (e.g., genetic makeup, evolutionary history, etc.). If he is right, I would need to change my example of a contingent existential truth—<there are no unicorns>, which would be necessarily true—to something else, e.g., <there are no Arctic penguins>. I thank an anonymous referee for raising this issue.

[30] In Lewisian terms, Necessitarians must adopt a "two-way difference-making" principle: if two worlds W and V differ, then at least W contains an entity x that V does not and V contains an entity y that W does not (2001: 609). This is opposed to a "one-way difference-making" principle that he prefers: two worlds W and V can differ simply by V containing more entities than W.

there are no Hobbits. A more well-known view is Armstrong's (2004: 72-6), who believes that

every negative existential truth is made true by the "totality state of affairs," the state of all

the states of affairs standing in the 'totaling' relation to the property *being a state of affairs* (a set

of entities stands in the totaling relation to some property when those entities are all the

instances of that property). Cameron (2008: 413) thinks that the world is the truthmaker for

every negative existential truth because he thinks the world has its parts and properties

essentially. Hence, for him the world essentially lacks unicorns and Hobbits. For Schaffer

(2010b), the world *alone* is fit to be the one truthmaker for every truth because the world is

ontologically prior to all of its parts, i.e., it grounds all of its parts. Thorough discussion of

these views is not possible here and my goal, at any rate, is not to show that these views are

incorrect.[31] The point is simply that the account of the world given here, does not commit us

to any of these features of the world—the very features that make these proposals so

controversial—in order to provide truthmakers for negatives. That is, the account is not

committed to properties like *being such that there are no Hobbits*, *being a world*, *being such that there*

is nothing more, or to totality states, the world's essential worldliness, or to priority monism. In

fact, the account doesn't even require states of affairs or topes as truthmakers for negatives.

All the present account says is that the world is what exists and that changes in what exists

would be responsible for changes in the truth-values of certain negative existentials.[32]

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[31] In my (2013) I give reasons for thinking that these views fail to supply negatives with truthmakers.
[32] This is not to say that the account makes no substantial commitments. In addition to the world, the view requires domains that negative truths are about, the particulars, properties, and relations occupying those domains, and the relation of variation-dependence. Although Briggs (2012) offers a similar account to the one given here (her view eschews Necessitarianism), I prefer mine because it doesn't require everything that hers does, ontologically (viz. a duplication relation and a counterpart relation) or theoretically (viz. set-theoretical and possible worlds-theoretical frameworks) (Briggs (2012: section 2)).

See van Frassen (1995), Simons (2003), and van Inwagen (2002: 127) for arguments against thinking the world is an entity. See Varzi (2006) for critical discussion of Simons (2003). Schaffer (2012a: 34-5) gives non-truthmaker related reasons for believing that the world is an entity. First, we have a singular term in natural language—the 'world' or the 'cosmos'—for this entity. Second, common sense recognizes the world as an entity, Third, the world is the object studied by physical cosmology (and other disciplines). Finally, classical mereology contains the axiom of unrestricted composition, which guarantees that there is a world/cosmos, the

Moreover, the entities I've identified as truthmakers for negatives existentials—domains that they are about, e.g., the world and the Arctic—are entities to which many philosophers are already committed. They are not postulated for the sole sake of providing negatives with truthmakers, which seems to be the case with Armstrong's and Cameron's candidate truthmakers.[33] This should make the account attractive to anyone sympathetic to Maximalism (or even a truthmaker principle restricted to contingent truths). And if successful, it would remove a significant roadblock for those skeptical about finding truthmakers for negatives because they find the extant proposals extravagant, ad hoc, or otherwise unattractive.

5. Objections

I have claimed that negative existential truths do not have necessitating truthmakers, but that they still depend on being as per TM$_N$. I foresee a number of objections to this claim.

Objection 1: On the present account, negative truths are not necessitated by anything. But truthmaking involves necessitation; hence the present account is not an account of truthmaking.

Response: Nothing in the mere idea that truth depends on what exists implies that every truth depends on what exists in the very same way nor does it imply Necessitarianism.

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fusion of all actual objects. Schaffer writes, "But any account of when composition occurs that preserves common sense and fits science should recognize the cosmos. It is only the most radical views of composition—views that do not even recognize tables and chairs—that do not recognize the cosmos" (2012a: 34-5).

[33] See Armstrong (2004: 70ff.). Cameron writes, "Why should you believe my claim? Well I'm just doing what the truthmaker theorist always does: urging you to believe in a certain entity with certain essential properties on the grounds that this entity is a suitable truthmaker for otherwise recalcitrant truths" (2008: 415). Schaffer should be excluded from this charge. See his (2010a) for non-truthmaker related arguments for priority monism.

The central motivation for truthmaker theory, as I understand it, is that truth is not brute, but a dependent feature of true propositions, dependent on what exists in the world. The present account respects and explicates this thought, for it maintains that every negative truth asymmetrically depends on for its truth-value on some entity. It just so happens that this dependence takes a different form than the one exhibited by positive truths. Negative truths are not brute, nor do they "float free" of being as they would if they were both existence *and* variation-independent of reality. But they are not. So I do not see why the present account would not qualify as an account of truthmaking just because it does not involve necessitation. If we insist that negative truths are made true in the way positive truths are and that truthmaking involves necessitation, then we are back to square one, wondering what entities necessitate the truth of negative truths. There are options on offer (as noted above), but so far none have gained popular support.[34] The assumption of Necessitarianism seems to be the main obstacle to supplying negatives with truthmakers. And what's more, attempts to argue for the thesis are unpersuasive.[35] The objector could, of

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[34] Again, this is not to say that none of these accounts are correct. There have been a few attempts to make putative 'negative' entities ontologically respectable. See Björnsson (2007) and Barker and Jago (2012) for defenses of negative facts. I have reservations about both accounts. Barker and Jago's account relies on positing a "tie" of non-mereological composition (cf. Armstrong 2007: 122) they call "anti-instantiation" between the constituents of negative facts. They suggest that once we allow for non-mereological composition, negative facts should be no stranger than positive facts. They admit that they don't clearly distinguishing between instantiation and anti-instantiation (2012: 127). But without an explanation of what anti-instantiation is, in what sense it qualifies as a 'tie' between objects and properties, or a form of composition, it's hard to gauge the prospects of the proposal. Concerned with Bradley's regress, Björnsson denies that there is a further constituent of facts binding together their objects and properties. According to him, "whether an object has [or doesn't have] a property is an affair *internal* to the object and the property," but admits, "The exact nature of this internal affair is beyond the scope of this paper, depending as it does on the exact nature of objects and properties" (2007: 13). Although he gestures at some possible ways of understanding this "internal affairs," each is sketchy and in need of much further development to properly substantiate his thesis. Moreover, Björnsson appeals to Beall's (2000) notion of a negative "polarity" to explicate his view, a notion that Dodd criticizes in his (2007: section 3). Both accounts of negative facts gain support from the thought that if you're already committed to positive facts, you ought to be committed to negative facts. If they are right, this may not actually lift prospects of an ontology of negative facts as much as sink those for an ontology facts in general. In that case, truthmaker theorists might wish to opt for tropes as truthmakers.

[35] See Armstrong (2004: 6-7) and Merricks (2007: 9) for attempts to argue for the thesis. Armstrong's argument simply presupposes the need for necessitating truthmakers. Merricks's first argument (2007: 9) only shows that when there are two 'contenders' for being truthmaker for a proposition that we should think a necessitating

course, opt to exclude negative truths from the scope of truthmaking. But without an argument for this, the restriction would abandon the central motivation behind truthmaker theory and leave us without an account of the dependence that negative truths have on reality. Moreover, the objector must overlook seemingly obvious differences in the way positive and negative truths represent the world, differences that at least provide prima facie justification for treating negative truths differently from positive truths.

Objection 2: Merricks (2007) imagines a non-Maximalist truthmaker theorist arguing that we can absolve negative existentials from needing necessitating truthmakers on the grounds a negative existential "*denies* the existence of something. So there does not seem to *be* something (or some way things *are*) that a negative existential is about" (2007: 84). He objects, saying

> This argument is just special pleading. But for special pleading, the reasoning behind this argument would release counterfactuals of freedom from the demand for grounding in what there is and how it is. For *counter*factuals of freedom are not about any *actual* action (or feature) of an entity. So there does not seem to *be* something (or some way things are) that a counterfactual is about. Thus, this reasoning suggests [TSB accounts] should release counterfactuals of freedom from the requirement that existing things (or those things being a certain way) ground their truth. (2007: 84)

I have suggested that we treat negative truths differently from positive truths (in particular by providing them with a principle of truthmaking that does not require them to be necessitated by anything) on the grounds that they represent the world differently, so Merricks would apply this objection to the present account.

Response: I do not think my account has the result that other truths, like

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entity is a better candidate for being a truthmaker than a non-necessitating entity. Merricks's second argument (2007: 9-10) only shows that some truths, e.g., positive existentials, have necessitating truthmakers. He generalizes the argument to all truths on the (unargued) assumption that all truths are made true in the same way.

counterfactual truths (or past truths or modal truths), are absolved from needing necessitating truthmakers. The problem with Merricks' argument is that it relies on an unjustified shift from '*p* denies the existence of some thing' to '*p* is not about any existing thing.' It does not seem that the former is synonymous with the latter, nor does the former seem to entail the latter: I see no reason to think that <there are no unicorns> is not about some existing thing just because it denies the existence of some thing, for it is, as I've claimed, plausibly about the world and its not containing a unicorn. Regardless, I am not trying to absolve negative existentials from having necessitating truthmakers on the grounds that they are not about anything. My grounds are that they deny the existence of some thing. Counterfactuals are not like this: they do not deny the existence of some thing. So even if neither negative existentials nor counterfactuals are about any thing, it does not follow that I must absolve the latter from needing necessitating truthmakers just because I absolve the former.

Objection 3: TMN is very similar to the TSB principles found in Bigelow (1988) and Lewis (2001: 612). According to Bigelow, truth's dependence on being is best captured by the following principle:

(TSB)   If *p* is true, then either at least one entity exists which would not exist, were *p* false, or at least one entity does not exist which would exist, were *p* false. (1988: 133)[36]

The treatment of truthmaking for negatives offered by TMN is not really an advance over this. In fact, TSB has the advantage over TMN since it offers a unified account of truth's dependence on being.

Response: First, TSB does not offer a unified account of truthmaking for positive and negative truths. It is a disjunctive principle: the first disjunct is supposed to capture the

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[36] Lewis supplements Bigelow's principle by also allowing truth to supervene on what fundamental properties and relation are instantiated in addition to what exists.

dependence of positive truths on being and the second, the dependence of negative truths on being. Moreover, the principle provides an inadequate account of this dependence for positive truths. For TSB, the dependence of positive truth on reality comes down to the correlation between the truth/falsity of a positive truth with the existence/non-existence of at least one entity. But this principle is far too permissible. Take <apple A exits> for example. TSB allows <apple A exists>'s instantiation of the property *being true* to be the proposition's truthmaker; it allows God's willing that A exist to be the proposition's truthmaker; it allows the fact that A is a fruit (or any fact involving A and one of its essential properties) to be the proposition's truthmaker.[37] All of these entities exist when <apple A exists> is true and fail to exist when <apple A exists> is false, but none of them plausibly make the proposition true. There is no doubt that truths like <apple A exists> supervene on being, but they do not *just* supervene on being; they are made true by *particular* entities. TSB fails to identify this truth's particular truthmaker.

Next, TMN offers a superior account of the dependence of negative truth on being than TSB. Unlike TSB, TMN accounts for the asymmetry between truth and being: it would *only be in virtue of* a change in being that there would be a change in the truth-value of a negative proposition. Additionally, TMN, together with FMN, provides us a way to specify the particular respect in which reality would have to change in order for a negative proposition to change its truth-value. This is an advance over TSB, which only says, with respect to a negative truth *p*, that at least one entity does not exist, which would if *p* were false. Again, this is too permissible, since the fact that *p* is false is an entity that does not exist, but which would if *p* were false. Obviously, this is not the sort of change in reality that would render *p* false. And unlike TSB, TMN accounts for the fact that certain negative

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[37] These examples are inspired by Smith (1999: 278).

truths, e.g., <there are no Arctic penguins>, only depend on particular portions of reality, e.g., the Arctic, and not the whole of reality. Unlike TSB, TMN accounts for the fact that propositions are discriminating in that what a proposition represents is relevant to its truth. It does this by including a condition that a truthmaker be that which the negative truth is about. TMN is not inconsistent with TSB; instead it should be seen as an advance on the latter principle since it better articulates the specific way in which negatives depend on reality.

6. Conclusion

Identifying truthmakers for negative truths has posed a serious challenge to truthmaker theory. Because of this and the fact that negative and positive propositions exhibit some important differences, I have argued that negative truths require a different account of how they depend on reality than positive truths. This dependence, which I am calling 'variation-dependence,' contrasts with the kind of dependence, 'existence-dependence,' exhibited by positive truths. This distinction led us to formulate the principle TMN for contingent negative truths. TMN provides a substantive account of the asymmetrical dependence of negative truth on being. The advantage of this account over others is that is tailored to the specific form of dependence exhibited by negative truths and it allows us to provide negative truths with plausible truthmakers, obviating the need to postulate new and unfamiliar entities to ground negative truths. Because TMN does not require necessitating truthmakers for negative truths, I hope the principle will be attractive to TSB theorists—those who hold the weaker principle that all truth supervenes on being. On the other hand, I hope TMN will be attractive to Maximalists since it does provide negatives with truthmakers. Granted, my account requires us to expand our notion of truthmaking to

include a form of dependence without necessitation. But this should this option should be seriously considered because of the problems Maximalists have faced trying to provide negatives with necessitating truthmakers, because of the intuitive differences between positive and negative propositions, and because of the difference between existence- and variation-dependence.

I want to conclude this paper by reflecting on the (apparently) inconsistent quartet posed by Molnar (2000: 84-5).

(i)   The world is everything that exists.
(ii)   Everything that exists is positive.
(iii)   Some negative claims about the world are true.
(iv)   Every true claim about the world is made true by something that exists.

These four theses, he claims, are each intuitively correct, yet it is hard to see how they could all be true. My response is not to reject any of these. Rather, it is to allow truthmaking to take a variety of forms; "is made true by" in (iv) need not refer to one and the same relation for all truths. Negative truths are indeed made true by something, just not in the same way that positive truths are. The overall picture of truthmaking that the present account fits into is one that seeks to balance both unity and plurality: all truth depends on being—every truth gets a truthmaker—but that dependence may take different forms for different truths.[38]

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[38] See my manuscript "Towards a Pluralist Theory of Truthmaking," for an introduction to this new approach to truthmaking.

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