The Cost of Truthmaker Maximalism

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Abstract: According to truthmaker theory, particular truths are true in virtue of the existence of particular entities. Truthmaker maximalism holds that this is so for *all* truths. Negative existential and other 'negative' truths threaten the position. Despite this, maximalism is an appealing thesis for truthmaker theorists. This motivates interest in parsimonious maximalist theories, which do not posit extra entities for truthmaker duty. Such theories have been offered by David Lewis and Gideon Rosen, Ross Cameron, and Jonathan Schaffer. But these theories cannot be sustained, I'll argue, and hence maximalism comes with a serious ontological cost. Neither Armstrong's invocation of totality facts nor the Martin-Kukso line on absences can meet this cost satisfactorily. I'll claim that negative facts are the best (and perhaps only) way out of the problem for the truthmaker maximalist.

Keywords: Truthmaking, maximalism, negative facts, parsimony, ontology

1   Introduction

Truth depends on how the world is: reality determines the truths. Truthmaking theory can be seen as the attempt to find specific entities to ground specific truths. These should be entities whose existence explains why those truths are true, rather than false. When an entity grounds some proposition's truth, that entity is the truth's *truthmaker*; the truth is true *in virtue of* that entity. According to most truthmaking accounts, that truth will be true in virtue of that entity's existence, so that truth is grounded in *what* exists (Rodriguez-Pereyra 2005, 17). This thought is the beginning of a very intuitive picture of how the world determines which propositions are true and which are false. According to that picture, a proposition is true if, but only if, a truthmaker for that proposition exists.

This picture, although intuitive, is by no means innocuous. There are truths – paradigmatically, true negative existentials – which require for their truth that certain things *fail* to exist. Such truths put pressure on the *truthmaker maximalist* contention that *every* truth is true in virtue of some existing thing. This is sometimes called the *problem of negative truth*. Because of it, maximalism is perhaps the most contentious aspect of the truthmaker theorist's doctrine.

The question of maximalism is significant, for it influences the debate surrounding truthmaking theory as a whole. One important issue is the use

of truthmaker theory to 'catch cheats' (Sider 2003; Armstrong 2004), e.g. to argue against presentists on the basis that they posit truths (about the past or future) but deny any corresponding ontology. Such moves have most force given maximalism, for if truths about what does *not* exist need no truthmakers, it may be question-begging against the presentist to require truthmakers for truths about the past or future (Tallant 2009). Another important issue is whether truthmaking theory should be seen as a theory of truth, as a successor to the correspondence theory. The claim would be that *what it is* for the proposition *that A* (which I'll denote '⟨A⟩') to be true is for it to be made true, so that truthmaking is constitutive of truth. If truthmaking is itself a substantive relation (as I hold), then this move gives us a way to make sense of truth as a substantial property (or relation, in this case), as opposed to a 'minimal' (Wright 1992) or 'purely logical' property (Horwich 1990). This is an option I take seriously. But it is an option only so long as the truths and the truthmade coincide; that is, just so long as maximalism holds. So I take the question of maximalism to be important to truthmaker theory more generally.

My main aim in this paper is to argue that a maximalist truthmaking account does not come cheaply. In particular, *parsimonious* maximalist accounts, which aim for maximalism without special additions to their ontology, are not viable. A maximalist should adopt a plenitudinous truthmaking ontology, containing entities which are 'custom-made' truthmakers for negative truths. These might be absences, totality facts, or negative facts. I'll argue that both Armstrong's totality facts (1997; 2004) and absences, as conceived by Kukso (2006) and Martin (1996), are problematic. This suggests that the maximalist should take negative facts seriously, and this is indeed my preferred option: see Jago 2011 and Barker and Jago 2012.

The paper proceeds as follows. I set out the problem of negative truth in more detail and motivate the maximalist's position in §2. I then discuss and reject parsimonious maximalist accounts from David Lewis and Gideon Rosen (§3), Ross Cameron (§4) and Jonathan Schaffer (§5). §6 discusses problems with Armstrong's totality facts and with absences, as conceived by Kukso (2006) and Martin (1996). §7 briefly makes the case for negative facts.

2 The Problem of Negative Truth

Truthmaking is often taken to require the following two theses:

(MAXIMALISM) Every truth has a truthmaker.

(NECESSITATION) If x is a truthmaker for $\langle A \rangle$ then, necessarily, $\langle A \rangle$ is true if x exists.

I won't give an argument in favour of NECESSITATION here. Nearly all truthmaker theorists, including Mulligan et al. (1984); Armstrong (1997; 2004) and Cameron (2007), accept it. (Parsons (1999) and Mellor (2003; 2009) are notable exceptions.) A theory which rejects NECESSITATION would seem to be guilty of changing the subject (Beebee and Dodd 2005). Note that NECESSITATION gives a necessary but not a sufficient condition on truthmaking. There are cases in which x's existence necessitates $\langle A \rangle$'s truth without making it true (necessary truths being a case in point). MAXIMALISM too is an appealing idea, in that it treats all truths on a par (Cameron 2007, 412). For present purposes, it won't matter whether MAXIMALISM is treated as a contingent or necessary truth. (I think it should hold necessarily if it holds at all, but I won't rely on that assumption here.)

There is a problem with holding both MAXIMALISM and NECESSITATION simultaneously. MAXIMALISM entails that there's some entity which makes

(1) $\langle$Vulcans do not exist$\rangle$

true. NECESSITATION entails that this entity necessitates (1)'s truth, and hence necessitates that Vulcans don't exist. But, the problem goes, how could any entity do *that*? Let's call an entity x an *absence-necessitator* when x's existence necessitates the non-existence of some contingent entity. Then the worry for maximalism posed by negative truths is this: maximalism requires absence-necessitators, but (supposedly) there can be no such entities.

To be sure, this is not the whole of the worry for the maximalist. For even if some entity x necessitates (1)'s truth, it does not follow that (1) is true in virtue of x. Yet the phenomenon of absence-necessitation (if it is indeed a phenomenon) calls out for ontological explanation. And it seems highly likely that an ontological story about absence-necessitators will provide entities which explain why given negative truths are true, rather than false. Consider the kinds of absence-necessitators that have been proposed in the

literature: absences (Kukso 2006; Martin 1996), negative facts (Russell 1985) and totality facts (Armstrong 1997; 2004). If there were such entities, then we could reasonably claim that they serve as truthmakers for the negative truths. (This is how their defenders see those entities.) So, as I see things, the problem of absence-necessitators is at the heart of the more general problem of negative truth.

The problem for these proposed absence-necessitators is that absences-qua-genuine-entities, negative facts and totality facts are generally thought to be 'really peculiar' (Cameron 2007, 413), or 'too weak to bear much metaphysical weight' (Fox 1987, 206). The worry is sometimes put by insisting that *genuine existence is positive* (Molnar 2000, 84–5), whereas absences, negative facts and totality facts are all 'negative' entities and hence not genuine parts of existence. (Admittedly, it's unclear exactly what Molnar means by calling reality 'positive': see Parsons 2006. But I don't doubt that there's an issue here.)

One might respond: so much the worse for maximalism! One might adopt instead a more moderate view, on which some but not all truths require truthmakers. A proponent of this view would look to divide propositions into 'positive' and 'negative' ones, such that the negation of a negative proposition is a positive proposition and vice versa. (1) is a paradigm negative proposition, for example, whereas ⟨Vulcans exist⟩ is a paradigm positive proposition. The *moderate non-maximalist* view is then that a positive proposition requires a truthmaker to be true, whereas a negative proposition requires only that the corresponding positive proposition does *not* have a truthmaker (Mellor 2003; 2009; Simons 2005). Thus, (1)'s truth is explained wholly by ⟨Vulcans exist⟩'s lacking a truthmaker. Nothing is required to exist in order to *make* (1) true.

This commonsensical view might appear to capture the truthmaking intuition whilst avoiding the worry about absence-necessitators. But it is not clear whether moderate non-maximalism really does avoid the worry. I've argued elsewhere (Jago 2012) that moderate non-maximalists are committed to absence-necessitators just as much as the maximalist is. The argument, in brief, is this. Consider the proposition

(2) ⟨¬Anna knows that Vulcans do not exist⟩.

If Anna fails to exist, or fails to have the relevant beliefs, or her beliefs fail to connect with the facts in the right way, then (2) is true, and true because Anna

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does *not* exist, or because of her *lack* of the relevant beliefs, or because of their *lack* of an appropriate connection to reality. By non-maximalist lights, therefore, (2) looks to be the kind of proposition which does not require a truthmaker for its truth, i.e., a negative proposition. If so, the moderate non-maximalist should classify

(3) ⟨Anna knows that Vulcans do not exist⟩

as a positive proposition, and hence as a proposition which is true iff it has a truthmaker. Suppose (3) is true. Then by assumption, it has a truthmaker T and, given NECESSITATION, it is necessary that: (3) is true if T exists. So necessarily, if T exists then Anna knows that Vulcans do not exist. And since knowledge is factive, it is thus necessary that: Vulcans do not exist if T exists. So T necessitates (1)'s truth.

If this argument is correct, then both the maximalist and the moderate non-maximalist require absence-necessitators in their ontologies. As far as the absence-necessitator problem for maximalism goes, the non-maximalist is no better off than the maximalist. Moderate non-maximalism, motivated by the desire to avoid absence-necessitators, is thus an unstable position.

The non-maximalist is not forced (by this argument) into holding that those absence-necessitators are truthmakers for the negative truths, for NECESSITATION is a necessary but insufficient condition on truthmaking. So this argument alone does not disprove moderate non-maximalism. The point I want to stress is that an ontology containing absence-necessitators is (or is poised to be) 'maximalist friendly': on all accounts of absence-necessitators of which I am aware, those absence-necessitators also serve as truthmakers for negative truths. So one should either accept that there are absence-necessitators (and hence adopt a maximalist-friendly ontology) or else reject truthmaking theory entirely.

Evaluation of the latter option is a complicated business and one I do not propose to enter into here. I will instead consider the prospects for truthmaker theory in light of its demand for absence-necessitators. If one can make metaphysical sense of absence-necessitators, then there is no ontological objection to accepting maximalism. So I will be considering the prospects for maximalism and, in particular, for theories which provide truthmakers for negative truths. Some attempts to do this do not posit additional entities just to make the negative truths true (they do not rely on negative facts, absences-qua-entities, totality facts and so on.). Let's label these *parsimonious maximalist* theories. I'll discuss (and reject) parsimonious attempts due to

Lewis and Rosen (2003), Cameron (2007) and Schaffer (2010b) in §§3–5. I'll then consider non-parsimonious accounts in §§6–7.

3   Lewis and Rosen's Account

In this section, I'll discuss David Lewis's (2003) account of truthmaking and Lewis and Rosen's (2003) maximalist addition to it. For a long time, Lewis rejected truthmaker theory on the grounds that 'the demand for truthmakers just is a demand for necessary connections' (Lewis 1999, 219), which conflicts with his Humeanism. The latter requires that, for any two possible entities x and y, a duplicate of x must be able to co-exist with a duplicate of y (Lewis 1986). In particular, a duplicate of whatever makes (1) true must be able to co-exist with a Vulcan. But how could this be, if a truthmaker for $\langle A \rangle$ must necessitate $\langle A \rangle$'s truth?

Later on, Lewis noticed a way of reconciling truthmaking with Humeanism (Lewis 2003). According to his counterpart theory (Lewis 1971; 1986), something can be essentially F without being intrinsically F (i.e., even if some intrinsic duplicate of that thing is not F). On Lewis's story, I am identical to my body, yet I'm essentially a person, whereas my body isn't. Since the counterpart relation is one of similarity, which is a matter of contextual salience, attributions of essential properties vary with context. Picking me out *qua person* raises my personhood to salience, creating a context in which only people are my counterparts and hence in which I'm essentially a person.

Lewis (2003) treats truthmaking in a similar way. The truthmaker for $\langle$this lemon is juicy$\rangle$ is the lemon, *qua* juicy. That entity is just the lemon, insofar its juiciness is raised to salience (the effect of the '*qua* juicy' locution). It is perfectly consistent, in some other context, to hold that the lemon might not have been juicy.

In their postscript to Lewis's paper, Lewis and Rosen (2003) extend the idea to cover negative existentials. They take (1) to be made true by the world, *qua* unaccompanied by Vulcans. For more specific negative existentials, such as

(4) $\langle$there are no hippos in the lake$\rangle$

we get more specific truthmakers: in this case, the lake, *qua* unaccompanied by hippos. This approach is parsimonious: all the entities referred to by *qua-*

phrases are already required by Lewis's Modal Realism. It's also (by design) compatible with Lewis's Humeanism, which many take to be an advantage.

The Lewis-Rosen view faces a serious triviality objection, however. As Lewis recognises (2003, 32), it would be absurd to claim that Elvis, *qua* unaccompanied by Vulcans, is what makes (1) true. Elvis has nothing whatsoever to do with whether there exist Vulcans. What is the difference between this 'cheap trick' (Lewis 2003, 32) and the genuine account? It is this, says Lewis: in the genuine account, the invoked counterpart relations must 'rest upon similarities that strike us as having at least some importance' and 'rest predominantly upon intrinsic similarity' (2003, 33).

Even with this restriction in place, we can run a triviality objection. Consider all those perfect intrinsic duplicates of Elvis. Each is exactly similar to Elvis himself in many, many respects of intrinsic similarity. (This remains the case even if we restrict 'respects of similarity' to natural properties.) Now select from the Elvis duplicates those that are unaccompanied by Vulcans. They remain exactly similar to Elvis in many, many respects, but differ extrinsically from Elvis in one respect (namely, they are unaccompanied by Vulcans). Of course, each particular Elvis-duplicate may differ extrinsically from Elvis himself in many further ways. But our way of selecting those Elvis-duplicates as a group in this way rests on many, many intrinsic respects plus just one extrinsic respect. So 'intrinsic duplicate of Elvis, unaccompanied by Vulcans' is a way of selecting counterparts which rests *predominantly* (albeit not totally) on intrinsic similarity, just as Lewis requires.

By Lewis's lights, picking out Elvis qua intrinsically as he is and unaccompanied by Vulcans determines a suitable context in which to treat Elvis as a truthmaker for (1). Triviality has not been avoided. (True, it is not clear to what 'rest[ing] predominantly upon intrinsic similarity' amounts. Yet Lewis needs this notion to avoid his own 'cheap trick' objection, and so the onus is on him to make precise sense of the notion in a way that avoids this kind of objection.)

In this section, I've argued that Lewis and Rosen's account of truthmaking can be trivialised. In the next section, I'll discuss an attempt to overcome this problem, due to Cameron (2007).

4 Cameron's Account

In this section, I'll discuss Cameron's (2007) account of what makes the negative truths true. His account is a descendent of Lewis and Rosen's; it can be seen as an attempt to overcome the triviality worry raised in §3. It does so by rejecting Lewis's multiplicity of counterpart relations: on Cameron's view, the truth of modal ascriptions is independent of context of utterance (2007, 420): equivalently, there is a single counterpart relation for all contexts.

The key idea in Cameron's account is that each world (in any context, however picked out) is essentially the way it is. In counterpart theoretic terms, each world's only counterparts are itself and worlds indistinguishable from it. As a consequence, each world couldn't be any way other than the way it is and so the world's existence necessitates all the propositions that are true according to that world. Accordingly, Cameron takes each world w to be the truthmaker for each negative proposition that's true according to w. In this way, Cameron's account is both maximalist and parsimonious.

One worry with this approach is that the world as a whole is a severely non-discriminating truthmaker. We expect the following to differ in (at least some of) their truthmakers (as they do on the Lewis-Rosen view):

(5) ⟨there are no Vulcans in Sydney⟩

(6) ⟨there are no Hobbits in London⟩

They differ completely in their subject matter: one is about Sydney and Vulcans, the other about London and Hobbits. Making (5) true requires Sydney to be a certain way, but shouldn't require the non-Sydney part of the world to be any particular way. Similarly, making (6) true requires London to be a certain way, but shouldn't require the non-London part of the world to be any particular way. Intuitively, (5) is true in virtue of the way Sydney is, whereas (6) is true in virtue of the way London is. Cameron's view denies this. Cameron may opt to bite the bullet here, but it is a worry nevertheless.

More tellingly, Cameron's view also faces a triviality objection, somewhat similar to that faced by the Lewis-Rosen theory. Suppose we cook up a theory as follows. Pick some arbitrary actual world-stage s and let PAST be the fusion of all those world-stages prior to s. According to the theory, PAST has no counterparts other than itself and indistinguishable parts of worlds indistinguishable from the actual world. Then (according to this bizarre theory), PAST is essentially the way it is and hence necessitates all actual

truths. The theory then takes PAST to be what makes all the negative truths true. But clearly this is absurd: claiming that PAST makes (1) true is just as counterintuitive as claiming that Elvis (however picked out) makes it true.

The question for Cameron, therefore, is this: what is it that rules out the bizarre PAST theory, but not Cameron's preferred theory? One might argue that, since things in the past (relative to world-stage *s*) could have been some other way, PAST too could have been some other way. But Cameron cannot accept this principle in general, for he holds both that things in the world's history could have been different and that the world itself (*de re*) could not have been other than it is. He must reject the inference from '*x* is essentially the way it is' and '*y* is a proper part of *x*' to '*y* is essentially the way it is', for everything is a part of some world, and at least some things aren't essentially the way they are.

Alternatively, one might argue that the way the PAST-theory stipulates PAST's counterparts to be is just too bizarre (specifically: too bizarrely restrictive) to count as a counterpart relation. But note that, on Cameron's view, the counterpart relation is not defined in terms of intrinsic similarity (as Lewis and Rosen's multiple counterpart relations are). The actual world is intrinsically similar to many entities which are (by Cameron's lights) *not* its counterparts (e.g., entities just like the actual world but with the addition of a single speck of dust). So (unlike on Lewis's view) it is not clear why factors other than intrinsic similarity should not be allowed to restrict the counterpart relation (as they do on the PAST theory).

What Cameron needs is a positive argument for restricting each world's counterparts as he does (for surely, there is no good positive argument for restricting PAST's counterparts as the PAST-theory does). Cameron provides one such argument: he claims that 'the actual world is individuated by what is true according to it' and that 'this amounts to the claim that it has all its properties essentially' (2007, 415). But this is too quick. There is both a *generic* and a *specific* sense of 'truth according to world *w*'. The generic sense applies irrespective of the nature of the world in question. In this sense, a Lewisian concrete world and an ersatz world (a set theoretic construction) can agree on what is true. A specific sense of 'truth according to world *w*', by contrast, is defined relative to a particular kind of world. Truth according to a set-of-propositions-world *w*, for example, is merely a matter of set-theoretic membership of *w*: $\langle A \rangle$ is true according to world *w* (in this sense) iff $\langle A \rangle \in w$. In this specific sense of 'truth according to *w*', no primitive proposition is true according to any Lewis-world.

To evaluate Cameron's claim that a world is individuated by what is true according to it, we need to be clear on whether 'truth according to world w' is used in the generic or in some specific sense. I'll argue that the claim does not hold on either reading. First, assume the generic sense of 'truth according to world w' and consider some concrete possible world w and the corresponding ersatz (either set-of-propositions or set-of-sentences) world w'. By definition, the truths according to w are precisely the truths according to w'. Yet we can easily distinguish these worlds (one is concrete, the other isn't), and hence it is false that we individuate either world purely in terms of what's true according to it. Now let's instead assume the specific sense of 'truth according to a world' that applies to concrete Lewisian worlds. Cameron's claim is then that we individuate *concrete* worlds by what's true according to them in this sense. We individuate concrete world w by the *ersatz* set-of-propositions world w' which says that w is the actual world (2007, 415). (Cameron is not committed to Lewisian modal realism here. The claim can be about individuating our concrete world along with merely possible concrete individuals.)

This claim is problematic. If there are distinct but indiscernible concrete worlds w_1 and w_2, then no ersatz world w' can uniquely represent either as being actual; hence we cannot *uniquely* identify either w_1 or w_2 via w'. Nevertheless, those concrete worlds may be distinguished from one another *indexically*: when the inhabitants of w_1 say '*this* world', they pick out w_1, not w_2. Indeed, consider our case: when we say '*our* world', we identify our world and no other. So (at least in some cases) it is false that concrete worlds are identified via what is true according to them. (It may be that concrete worlds are identified via what is true according to them in some cases. But, since Cameron requires there to be just one counterpart relation, it cannot be fixed by a way of identifying objects which applies in some but not all cases. Cameron's argument requires that in all cases concrete worlds are identified via what is true according to them.)

Cameron's positive argument for fixing his one counterpart relation in the way he does fails. He requires such an argument to rule out theories (like the PAST-theory) which fix the counterpart relation in some other way. So I do not think that Cameron's account is a promising way to make good on parsimonious maximalism. In the next section, I discuss our final candidate: Schaffer's truthmaker monism.

5 Schaffer's Account

In this section, I discuss Schaffer's *truthmaker monism* (Schaffer 2010b), the doctrine that, if $\langle A \rangle$ has a truthmaker at world w, then w itself is $\langle A \rangle$'s one and only truthmaker at w (2010b, 307). This view is motivated by Schaffer's *priority monist* metaphysics (Schaffer 2010a;c). On this view, there exists a plurality of entities, namely, the world and all its proper parts. All of those proper parts are ontologically dependent on the one fundamental entity, the world as a whole. Schaffer argues for truthmaker monism by claiming that:

(FUNDAMENTAL) If x is a truthmaker for some $\langle A \rangle$, then x is a fundamental entity.

Combined with priority monism, this entails truthmaker monism. In this way, Schaffer can allow that the world is a truthmaker for (1), even though it might have co-existed with a Vulcan, as part of a larger world w^+ (2010b, 318). In this case, the counterpart of the actual world is not fundamental (for it is a proper part of w^+) and hence is not a truthmaker at w^+. So whilst Schaffer rejects NECESSITATION, he does accept:

(NECESSITATION*) If x is a truthmaker of $\langle A \rangle$ then, necessarily, $\langle A \rangle$ is true if x exists and is a truthmaker.

He argues that this is sufficient to establish that any truth is grounded. Let's grant this point. Then MAXIMALISM is easily satisfied; the theory is parsimonious; and all without invoking essential properties or implicating counterparts (Schaffer 2010b, 322). The key question for Schaffer is: why think FUNDAMENTAL is true? I'll first review and reject Schaffer's support for FUNDAMENTAL (and hence for NECESSITATION*). I'll then argue that there are independent reasons for rejecting FUNDAMENTAL and hence for rejecting NECESSITATION* (without which, Schaffer can no longer claim to address the problem of negative truth).

Schaffer gives a number of arguments in favour of FUNDAMENTAL. He argues that 'truthmakers need to be restricted to fundamental entities to ensure the right order of explanation' (Schaffer 2010b, 319), i.e. from being to truth, and not vice versa. But, as Schaffer himself acknowledges (2010b, 319–20), all that we need to get the order of explanation right is the requirement that the more fundamental explains the less fundamental. Morrissey the cat's existence explains why $\langle$Morrissey exists$\rangle$ is true, but not vice versa, because

Morrissey is more fundamental than that truth. Morrissey is far from being a fundamental entity, and so this argument does not support FUNDAMENTAL.

Schaffer also argues that 'the restriction to fundamental entities is needed if any 'cheaters' are to be caught' (2010b, 319). But again, this is not so: *some* cheaters can be caught without appeal to FUNDAMENTAL. The truthmaking case against presentists is that they (supposedly) can't find *any* entities, fundamental or otherwise, to act as truthmakers for truths about the past or the future. It's not as if they accept that past entities exist but are non-fundamental; so a truthmaking argument against the presentist doesn't require truthmakers to be fundamental. (The same goes for the argument against the growing-block theory.)

What about other cases of 'cheat-catching'? In making his case, Schaffer focuses on 'Rylean behaviourism, with its *brute dispositions*' (2010b, 319). He points out that someone (like Armstrong) who believes in dispositions but not in brute dispositions has 'truthmakers enough for behaviourism' (2010b, 319), and so can't call the behaviourist for cheating. But so what? If one has a plausible story on which dispositions (qua truthmakers for mental-state ascriptions) can be reduced to a categorical base, then why should one rule out *this* kind of theory? The kind of behaviourism which Armstrong wants to rule out on 'cheating' grounds is the kind that says: mental-state ascriptions are made true by *brute* dispositions which do not reduce to any categorical base. Truthmaker theory alone should not rule out such theories. If it did, it would rule out dispositional essentialism (Bird 2007; Mumford 2003) too, and truthmaker theory alone should not do that. (Indeed, it is quite plausible that properties such as *having unit negative charge* are fundamental, irreducible dispositions which play a role in grounding certain truths, such at 'this electron has unit negative charge'.) In short, neither the presentist case nor the brute dispositions case of cheat-catching provides support for FUNDAMENTAL.

Without FUNDAMENTAL, the argument from priority monism to truthmaker monism does not go through. ⟨Morrissey exists⟩ may be grounded in Morrissey's existence, even if Morrissey is not a fundamental entity. Indeed, it is independently plausible that Morrissey's existence is what makes ⟨Morrissey exists⟩ true. Not only does Morrissey's existence necessitate that truth (and vice versa), it does so in a minimal way. Take away parts so that Morrissey no longer remains, and ⟨Morrissey exists⟩ is no longer true. Moreover, Morrissey is clearly the most relevant entity to the truth of ⟨Morrissey exists⟩. So Morrissey himself has an excellent claim to be the truthmaker for ⟨Morrissey

exists). The same goes for each entity x and the proposition that x exists. So FUNDAMENTAL should be rejected in favour of the UBIQUITY principle: every entity is a truthmaker for some proposition.

The important consequence of denying FUNDAMENTAL is that Schaffer's account now violates NECESSITATION*, as well as NECESSITATION. If FUNDA-MENTAL is false then there is a world w and a part p of w such that p is a truthmaker at w. That part p could have existed on its own: call that world w_p (so that p and w_p are counterparts, if not numerically identical). Now consider some negative existential $\langle A \rangle$ which is true according to w_p but not w (there must be one, since w extends w_p). Given truthmaker monism, w_p is the only truthmaker for $\langle A \rangle$ at w_p. But since p is a counterpart of w_p, and is a truthmaker at w, it could have been that: w_p exists and is a truthmaker even though $\langle A \rangle$ is false. Hence truthmaker monism entails a counterexample to NECESSITATION* (as well as to NECESSITATION). Indeed, if we accept UBIQUITY, then every world will be one such counterexample. The actual world might have co-existed with a Vulcan as part of a larger world w^+ *whilst remaining a truthmaker* (for some proposition or other), contradicting NECESSITATION*.

Without NECESSITATION* (or NECESSITATION) in play, we do not have a solution to the original problem of negative truth from §2. So truthmaker monism (which falsifies both NECESSITATION* and NECESSITATION) does not provide a solution to the problem of negative truth (even if we accept priority monism). Our quest for a solution must turn elsewhere.

6   The Way of Plenitude

A parsimonious maximalist account of truthmaking would be one that provides truthmakers for the negative truths, without adding to its ontology dedicated entities to do this job. Lewis and Rosen, Cameron and Schaffer offer such accounts, and I've argued that they should be rejected. The moral I want to draw is that truthmakers for negative truths don't come cheaply. Perhaps, in these times of austerity, this is reason to reject them and (given the argument from §2) reject truthmaking theory too. But what if we don't want to be so ontologically tight-fisted? What if we want to enlarge our ontology, specifically to supply truthmakers for the negative truths? Is there a coherent path for this expansive ontology to take?

The contenders are Armstrong's totality facts (1997; 2004), negative facts

(Russell 1985) and absences (Kukso 2006; Martin 1996). I'll argue that the best option for a maximalist is a thoroughgoing theory of (substantial, worldly, and non-linguistic) negative facts. I see little coherence in Martin's (1996) or Kukso's (2006) approaches. They each insist that there are absences (absences 'are real') yet also that absences must not be reified. Absences 'are not entities or properties' (Martin 1996, 62) and 'are not objects, things, or states of affairs' (Kukso 2006, 29). But if so, how can they stand in the *truthmaking* relation to a proposition? They can't. If absences are to do truthmaking work, they must exist, and (trivially!) everything that exists is a *thing*. That includes facts (or states of affairs), events and properties. The way to make sense of absences (despite what Kukso (2006, 29) says) is to identify them with negative facts. There's no tension between accepting negative facts and accepting absences-qua-entities. So the immediate question is: if we are to accept a maximalist theory at all, should we prefer a theory in terms of particular negative facts, or in terms of totality facts?

Armstrong analyses totality facts as follows. There is a relational universal, *Tot*, which relates a mereological sum of things s to a property F just in case s is the sum of all Fs (Armstrong 2004, 73). *Tot*'s relating the sum of all hamsters to the property *being a hamster* is the totality fact that such-and-such are all the hamsters. If there are n hamsters, then this fact serves as the truthmaker for 'there exist exactly n hamsters'. *Tot*'s relating the sum of all first-order facts to the property *being a first-order fact* is the totality fact that such-and-such are all the first-order facts. This fact serves as a truthmaker for all truths not made true by one of the first-order facts, such as 'there are no flying hamsters'.

My worry with Armstong's approach is that the *Tot* universal cannot work as advertised. It is supposed to form a fact $Tot(s, F)$ just in case s is the sum of all Fs. But take the sum of *all* facts s. This sum totalises the property *being a fact*, so we should expect $Tot(s, being\ a\ fact)$ to hold. This entity is a fact, one among many, and hence a (mereological) part of s. And s is a (non-mereological) part of $Tot(s, being\ a\ fact)$. But both mereological and non-mereological parthood are *kinds* of parthood: if x is a mereological or non-mereological part of y, then x is a part (in the generic sense of 'part') of y. So $Tot(s, being\ a\ fact)$ is a part of s, itself a part of $Tot(s, being\ a\ fact)$. This can be only if $Tot(s, being\ a\ fact)$ and s are identical (for it cannot be that x is a proper part of y, which is itself a proper part of x). But $Tot(s, being\ a\ fact)$ and s are not identical, since s is a proper non-mereological part of $Tot(s, being\ a\ fact)$. Hence there cannot exist a

totality fact $Tot(s, being\ a\ fact)$, and so Tot cannot be that universal which applies to s and F just in case s is the sum of all Fs.

Armstrong may reply that no such totality fact $Tot(s, being\ a\ fact)$ is needed in his system of truthmaking, for all truths can be accounted for without it. Take, for example,

(7) s is the sum of all facts

(and assume this is true). Armstrong holds that the *first-order* totality fact, $Tot(s', being\ a\ first\text{-}order\ fact)$ (where s' is the sum of all first-order facts) alone makes (7) true. He also holds that, necessarily, exactly one (first-order) totality fact exists. Hence the first-order totality fact necessitates (7)'s truth. Here, Armstrong makes an inference of the form 'x exists and necessitates $\langle A \rangle$'s truth' to 'x is one of $\langle A \rangle's$ truthmakers'. But, as Armstrong (2004, §2.5) himself makes clear, this inference is not valid, for necessitation is insufficient for truthmaking. So I do not accept Armstrong's response to the problem. Moreover, to respond in this way really misses the force of the objection. The problem is not whether (by Armstrong's lights) some truth lacks a truthmaker, but rather that Tot cannot work as advertised. Given that Tot is not the universal of a sum's *totalling* a property, Armstrong's invocation of it in (first-order) totality facts looks to be rather *ad hoc*.

Other things being equal, therefore, a (non-parsimonious) maximalist is better off pursuing a theory in terms of particular negative facts. I'll briefly sketch such a theory in the next section.

7   Negative Facts

I have so far argued that the maximalist's best option lies with a theory of positive and negative facts as substantial, worldly, non-linguistic entities. I've defended a theory of negative facts elsewhere (Jago 2011; Barker and Jago 2012). All I will do here is briefly motivate that theory (or a similar one), and highlight some of its advantages for maximalism.

If one is to adopt a theory of negative facts, one first needs a story about positive facts. The most prominent contemporary theory is Armstrong's (1997; 2004) theory of states of affairs, on which the states of affairs *that a is F* is the non-mereological composition of the 'thin' particular a and the universal *Fness*. The composition is non-mereological because the existence of the

state of affairs is not in general guaranteed by the existence of *a* and *Fness*. Non-mereological composition is a theoretical primitive, added to the theory to provide a way of 'building' positive facts from particulars and universals. It provides the theorist with a way of moving from *a*'s possessing *Fness* to the existence of some entity, *that a is F*. Perhaps one cannot explain this kind of non-mereological composition much further.

In Barker and Jago 2012, the strategy is to say that, if we can posit this positive-fact-forming theoretical primitive, then we are also entitled to posit an additional negative-fact-forming theoretical primitive. This is a kind of non-mereological composition that takes particulars *a* and properties *G* and produces entities *that a lacks G*. To be sure, this theory carries an additional theoretical cost: one can't understand the negative form of non-mereological composition in terms of the positive form. But, as always, one looks to offset theoretical costs with other theoretical benefits (such as validating MAXIMALISM). On this theory, one analyses the negative existential fact *that there are no Fs* as the negative fact *that Fness is not instantiated*. This involves the higher-order property *being instantiated* which, in this case, *Fness* lacks.

One might, in addition, think of certain negative facts as reified absences. The absence of a hippo in this room can be identified with the fact *that there is no hippo in this room* (the negative non-mereological composition of the complex property *being-a-hippo-in-this-room* and the higher-order property *being instantiated*). Such facts would provide plausible truthmakers for problematic negative truths. Suppose there exists the negative fact *that Vulcans do not exist* (i.e., the negative non-mereological composition of the property *being a Vulcan* with the higher-order property *being instantiated*). Not only does this necessitate (1)'s truth, it is also fully relevant to that proposition. If we think of this fact as the reified absence of Vulcans, its existence is perfectly poised to explain why (1) is true, rather than false.

Here isn't the place to expound or defend this theory further. (The details are given in Barker and Jago 2012; some formal results about the theory are given in Jago 2011.) I recommend it to maximalists. If it is indeed a coherent option then, given what I argued in §§4–6 above, it is the best option open to maximalists (and the only acceptable account of absence-necessitators). If it is not a coherent option, then maximalism may well be untenable in general. Moreover, if the argument sketched in §2 holds water, then even non-maximalist truthmaker theories require absence-necessitators in their ontology. So it may well be that truthmaker theory in general stands or falls with the coherence of negative facts.

8 Conclusion

Given NECESSITATION, parsimonious maximalist truthmaking theories look appealing (to those attracted to truthmaker theory at all). But such theories cannot be sustained (§§3–5). So we must accept that maximalism comes with a serious ontological cost. If the argument sketched in §2 is correct, then truthmaker theory in general carries that cost. I've claimed that the cost is best met by a theory including both positive and negative facts (§§6–7).

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