Facts and Truth-making

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Abstract This essay is a reflection on the idea of truth-making and its applications. I respond to a critique of my 1986 paper on truth-making and discuss some key principles at play in the Truth-maker Program as it has emerged over the past 25 years, paying special attention to negative and general truths. I maintain my opposition to negative and general facts, but give an improved account of how to do without them. In the end, I accept Truth-maker Maximalism and a weakened form of Truth-maker Necessitarianism, reject the assumption that truth-makers must be entities, and urge that the idea of a truth-maker be broadened and loosened so that it applies to anti-realistic as well as realistic truths.

Keywords Anti-realism · Fact · Generality · Negation · Realism · Truth · Truth-maker

1 Facts as Truths and Facts as Truth-makers

Facts, in the everyday usage exemplified by typical occurrences of the locutions "in fact," "the fact that," and "that... is a fact," are nothing but truths (Frege 1925/1967, p. 35, Lewis 2001b, pp. 276–277). This usage comes easily to those who speak and write in English and other similar languages. Philosophers, like other speakers, often draw on it innocently and unreflectively. But they have also used it as a philosophical weapon, as in the case of Strawson's attempt to trivialize a central tenet of Austin's account of truth.[1]

Some philosophers—including Russell (1918/1956), the early Wittgenstein (1922/1961), and Austin (1950/1964)—have also used the word "facts" as a more-or-less technical term for actual situations or states of affairs that supposedly account for truths, or an important class of truths. In this usage, "Facts," as I once put it, "are what constitute the objective world, and what make true sentences and thoughts true and false sentences and thoughts false" (Pendlebury 1986, p. 177). Facts, thus understood, are not truths, but truth-makers.

The word "fact" is also used in other ways, but I set this aside and consider only the two conflicting uses that I have mentioned. It is difficult to do without the first even if you wish to abjure it in favor of the second. However, I see no harm in embracing both: the first as a convenient idiom that can easily be explained away but is unlikely to buy many philosophical goods; the second as a technical concept with useful philosophical applications, some of which I will consider in this essay. But the two should not be confused. It is especially important not to allow the easy availability of facts-as-truths of various kinds—including disjunctive, negative, general, logical, mathematical, and perhaps even normative facts—to tempt us to assume that there are corresponding kinds of facts-as-truth-makers. When there might otherwise be a risk of ambiguity, I'll refer to facts according to the first usage as truths and reserve the word "facts" for truth-making facts.[2]

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[1] "Of course, statements and facts fit. They were made for each other. If you prize the statements off the world you prize the facts off it too; but the world would be none the poorer." (Strawson 1950/1964, pp. 38–39)

[2] Some philosophers who are committed to truth-making facts prefer to identify them by means of other terms—e.g., "states of affairs" (Armstrong 1989a, 1997, 2004) and "facta" (Mellor 1995, p. 162)—in order to avoid confusing them with truths.

I will not refer to truth-making facts simply as truth-makers, because not all truth-makers are facts. Individuals are also truth-makers. Obama, the man, makes it true that Obama exists, that Obama is identical with Obama, and more—but how much is subject to dispute. Various other kinds of truth-makers have also been proposed. These include tropes (i.e., particularized properties), properties as universals, meanings, concepts, mere possibilities, and absences. (See, e.g., Mulligan et al. 1984 and Fox 1987 on tropes, Martin 1996 on absences, and Armstrong 2004 on the others.) And some philosophers who accept truth-makers reject truth-making facts (e.g., Mulligan et al. 1984, p. 318; Lewis 2001a).

I will take it for granted that there are such things, and that they include particular facts, which involve individuals' having properties and standing in relations. Using the term "property" to cover both monadic properties and relations, I will assume, more specifically, that whenever n individuals (taken in some order) have an n-place property, then there is, necessarily, a particular fact that is constituted by those individuals (in the relevant order) and that property. I will also assume that there are no other particular facts. David Lewis complains that on such an approach the connection between the constituents of a particular fact "has been in no way explained or excused" (2001a, p. 613). I reply that the connection is just a matter of the individuals' having the property. It is true that I cannot explain what this involves, but I think I should be excused because the ancient problem of explaining property possession in other terms may be unsolvable, and does not in any case depend upon a commitment to facts.[3]

This essay is a reflection on the idea of a truth-maker and its applications. I will respond to a critique of my earlier paper on truth-making (Pendlebury 1986) and discuss some key principles at play in what I will call "the Truth-maker Program" as it has emerged over the past 25 years, paying special attention to negative and general truths. I will maintain my opposition to negative and general facts, but give an improved account of how to do without them. In the end, I will accept Truth-maker Maximalism and a weakened form of Truth-maker Necessitarianism, reject the assumption that truth-makers must be entities, and urge that the idea of a truth-maker be broadened and loosened so that it applies to anti-realistic as well as realistic truths.

2 A Simple Model

When I wrote my earlier paper, I had no inkling of the heavy ontological lifting that the idea of a truth-maker

would later be made to do.[4] I assumed that facts are truth-makers and aimed merely to help meet some challenges faced by friends of facts—by showing that it is not necessary to assume that there is a 1–1 correspondence between facts and truths and, in particular, that there is no need for either negative or general facts, which have been seen as both unavoidable and puzzling, or even a downright embarrassment to those who endorse them. I did this by constructing a toy model within which I defined truth-making as a relation between sets of *atomic* facts and the true sentences of a standard first-order language, L, that included conjunction, disjunction, negation, and the existential and universal quantifiers. I thought, and still think, that this was enough to establish a strong presumption that disjunctive, negative, and general facts are unnecessary. But I did not intend to advance the model as a comprehensive theory and was not committed to applying all its features to full-blooded truth-making. Any attempt to develop a model rich enough to serve as a comprehensive theory would, in fact, have obscured my reasoning.

Let me mention just two of the many things that the model cannot do. First, it cannot provide grounds for accepting atomic facts, i.e., particular facts that involve only simple, unanalyzable individuals and properties that are independent of one another. It simply posits them. Second, even if we assume that there are atomic facts, the model still cannot establish a presumption that there are no conjunctive particular facts. It does show that some conjunctive truths require only sets of atomic facts, but leaves no space for the possibility of particular facts that cannot be analyzed into atomic facts (Armstrong 1997, pp. 1–2). I think that these limitations would be unwarranted in a comprehensive theory, especially because I do not have a compelling example of an atomic fact or a good argument for the claim that all particular facts are analyzable into atomic facts. The limitations were, however, convenient features of my model, because they allowed me to avoid difficult and distracting questions about relations of necessitation and exclusion between both individuals and properties while focusing on the questions about negation and generality with which I was primarily concerned.[5]

In the model, I represented a situation, or possible atomic fact, as an $(n + 1)$-tuple consisting of an n-place

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[3] For a critique of Lewis's view that all composition is mereological, see Hofman (2006).

[4] The bulk of the paper was written in 1979 and included as an appendix in my PhD dissertation (Pendlebury 1980, pp. 231–243).

[5] I concede that I excluded the possibility of a negative predication's being made true by the relevant individual's having a property incompatible with another property in virtue of which it would have satisfied the relevant predicate. However, I do not think that it is possible to explain all truths involving negation in this way. I therefore do not consider property incompatibility further in this essay.

property and *n* individuals, a possible world as a set of situations, and a fact in a world as a member of this set.[6] Basic meanings in *L* were given by a function that assigns individuals to terms and *n*-place properties to *n*-place predicates, yielding a 1–1 assignment of situations to atomic sentences.[7] This allowed for a recursive definition of a world-relative truth-making relation in terms of which the following hold for sentences of *L* not involving negation.

(a) An atomic sentence φ is made true in a world *W* by any set of facts in *W* that includes the situation that the meaning function for *L* assigns to φ.

(b) A disjunction is made true in *W* by any set of facts that makes either disjunct true in *W*.

(c) A conjunction is made true in *W* by any set of facts that makes both conjuncts true in *W*.

(d) An existential sentence $\exists v\varphi(v)$ is made true in *W* by any set of facts that makes at least one substitution instance of $\varphi(v)$ true in *W*.[8]

(e) A universal sentence $\forall v\varphi(v)$ is made true in *W* by any set of facts that makes every substitution instance of $\varphi(v)$ true in *W*.

On the whole, this is neat, easy, and effective. The only debatable results involve (e). Consider a world *W* containing just three individuals, *a*, *b*, and *c*, all of which possess the property, *P*, that the meaning function assigns to the predicate *F*. It's easy to see that $\forall xFx$ is made true in *W* by a set of three atomic facts, viz., *a*'s having *P*, *b*'s having *P*, and *c*'s having *P* (more technically, {< *P*, *a* > ,<*P*, *b* > ,<*P*, *c* >}), and all its supersets. But the same set of facts does not make $\forall xFx$ true in another world in which they are facts if that world contains other individuals. I'll return to the problem raised by cases like this soon.

My treatment of negations of atomic sentences in *L* was, in effect, as follows.

(f) A negated atomic sentence $\sim\varphi$ is made true in *W* by any set of facts *s* in *W* that includes all the facts in *W* involving any individual that the meaning function assigns to a term in φ, providing φ is not made true by *s* in *W*.

Assume that $\sim Gtu$ is true in *W* and that the meaning function assigns two-place relation *R* to the predicate *G* and individuals *a* and *b* to the terms *t* and *u* respectively. Then, according to (f), $\sim Gtu$ is made true in *W* by the set of all the facts involving *a*, the set of all the facts involving *b*, and all supersets of either of these two sets. Again, the sets of facts that make the sentence true in *W* do not make it true in all worlds in which they are facts.

Because every sentence in *L* that involves negation is equivalent to one in which all negations have minimal scope, (a)–(f) in effect cover all sentences in *L*. I will therefore not provide separate clauses for negations of disjunctions, conjunctions, and universal sentences. But the clause for negative existentials is worth recording explicitly:

(g) A negative existential sentence $\sim\exists v\varphi(v)$ is made true in *W* by any set of facts that makes every substitution instance of $\sim\varphi(v)$ true in *W*.

Taken with (a) and (f), (g) implies that, if $\sim\exists xFx$ is true in *W*, then the smallest set of facts that makes it true will consist of all the facts in *W*. It would, however, be possible to adjust (f) so that the smallest truth-maker contains only the facts involving one-place properties in *W* (Pendlebury 1986, p. 182). Either way, facts that make the sentence true in *W* fail to make it true in all the worlds in which they are facts.

Damian Cox (1997, pp. 47–48) gives a clear and fair exposition of this model before going on to criticize it (on pp. 49–53). I set aside Cox's minor criticisms and other objections that depend upon features of the model that were not germane to my main purpose, including the claim that I cannot accommodate "the logical possibility of alien properties and non-actual individuals" (Cox 1997, p. 50).[9] I will focus on the heart of his most important criticism, which is appropriately directed at a crucial implication of my position that I recorded as follows.

(R) A set of facts might make a sentence true in one world but not in another even though all members of that set are facts in both worlds. (Pendlebury 1986, p. 183)

In this essay, I have illustrated (R) with universal, negated atomic, and negative existential truths.

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[6] Two observations: First, I could not have treated a possible world as pretty much any set of situations without taking different situations to be mutually independent. This independence was secured in the model by the assumption that all situations are atomic. Second, although I represented my truth-makers set-theoretically, I did not mean to suggest that facts and collections of facts are set-theoretical entities. I have never been a realist about set-theoretical talk even though I regard many set-theoretical claims as objectively true or false (see Sect. 4).

[7] Thus true atomic sentences in *L* mirror the structure of atomic facts that make them true. This is naïve. In section B of the paper (pp. 183–187), I modified the model to avoid this consequence, but I won't go into the details here. It is, however, important to recognize that there is no straightforward correspondence between everyday predicates and real-world properties.

[8] In my formal definition, I treated the quantifiers objectually because I did not assume that *L* contained a singular term for every individual. Here I pretend that they do and express (d), (e), and (g) in terms of substitution for ease of exposition.

[9] In fact, the model does permit alien properties, but not non-actual individuals. This flaw is easy to correct.

In my earlier paper, I defended (R) very briefly, as follows: "I think it is a small price to pay for the privilege of doing without negative and general facts. For since worlds are themselves defined here as sets of atomic facts, the relativisation of the relation of making true to worlds demonstrably involves no special new ontological commitments." (Pendlebury 1986, p. 183) I simply took it for granted that negative and general facts are suspect, and Cox agrees (1997, p. 53). If pressed for reasons, I would emphasize two. First, it is not clear how the constituents of negative and general facts—whatever they may be—could be connected and thus unified. Second, unlike particular facts, negative and general facts lack what I take as an important mark of reality, viz., causal power. But this is not the place to unpack these problems or discuss responses that have been advanced in the literature.

Cox's central criticism of my model is that it falls foul of what he takes to be "the principal thesis of truth-making" (1997, p. 46), viz., that truth-making is a relation of necessitation. This implies that any facts that make a sentence true in a given world also make it true in all worlds in which they are facts, which conflicts directly with (R). But should we accept Truth-maker Necessitarianism (Armstrong 2004, p. 5)? There was no compelling reason for me to do so within the scope of the very modest goals of my earlier paper. But Necessitarianism has been central to the Truth-maker Program and may have merit from a broader perspective. To anticipate, I think it does. This raises the question of whether it is possible to save Necessitarianism, or something like it, while avoiding ontological extravagances like negative and general facts. Cox is skeptical (1997, p. 60), but I think it can be done. I will make the case in the following section, using the question as a focal point for a discussion of some of the most important principles that have been appealed to in the Truth-maker Program.

3 Some Principles of Truth-making

The Truth-maker Program has been guided by the idea that truth depends upon being (Merricks 2007, p. xiii)—or, more cautiously and expansively, that the truth of a proposition, or a proposition of an appropriate type, depends upon features of reality. This thought has been invoked to "regiment metaphysical inquiry" (Armstrong 2004, p. 4) and help support a variety of arguments from admitted truths to serious ontological theses. The heart of Mulligan et al. 1984 is an extended argument that tropes (described, in Husserl's term, as "moments") are needed as truth-makers for true contingent predications. Fox 1987 shows how the idea of a truth-maker can be used to make good sense of several claims of Aristotelian ontology. And, in a

series of books that draw increasingly on the idea of a truth-maker, Armstrong (1989a, 1997, 2004) has argued for an ontology of actual states of affairs and their constituents, which he takes to include particulars, universals, and higher-order relations between first-order states of affairs.

The Truth-maker Program has obvious links with the logical atomism of Russell and Wittgenstein as well as longer roots that go back to Plato and Aristotle. In Australia, where the program has flourished, the idea of a truth-maker was due largely to C. B. Martin, whose trenchant criticism of phenomenalism in the 1950s on the ground that it cannot provide truth-makers for "its brute counterfactual truths about nonexistent experience" (Lewis 1992, p. 218), although unpublished, was widely influential (Armstrong 1989b, pp. 8–11).

Fox presents the idea that truth depends upon being as an axiom dubbed "Truth-maker," which states that, for every truth, there exist things—viz., truth-makers—that necessitate it (1987, pp. 189–190). This implies both Truth-maker Necessitarianism and Truth-maker Maximalism, the view that every truth has a truth-maker (Armstrong 2004, p. 5). Fox recognizes potential problems for Truth-maker and briefly discusses the possibility of either weakening it or restricting its application without reaching any definite conclusions (1987, pp. 204–205). We should explore both alternatives as possible strategies to avoid negative and general facts.

The strategy of restriction may seem more promising because restrictions for other purposes make sense. For instance, some (e.g., Mellor 2003, p. 213) hold that truth-makers are not needed for unconditionally necessary truths, such as truths of logic and mathematics, because they do not depend upon the existence of anything else or on how things stand in reality.[10] On these grounds, I now restrict Truth-maker to contingent truths. Additional restrictions may seem to offer an easy way to avoid negative and general facts while saving Necessitarianism.

But this is an illusion. Restricting Truth-maker to atomic truths might have the desired results in a simple extensional model in which atomic truths are identified with true atomic sentences in a formal language. But it is not clear how to specify this restriction informatively with respect to real-world truths, because it is not obvious which, if any, of them are atomic in their own right, i.e., independently of the ways in which they could be expressed. I suspect that this problem is intractable. If it could be overcome, the restriction would allow for the explanation of the truth-values of truth-functional compounds of atomic

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[10] The limitation to truths that are *unconditionally* necessary is meant to exclude necessary truths that piggyback on contingencies, e.g., the truth that Obama is Obama. To avoid distracting qualifications, I will count these as contingent.

propositions on the basis of the truth-values of atomic propositions,[11] which would in turn be explained on the basis of whether they have truth-makers. But the restriction would also exempt other compound truths, including truths expressed by counterfactual conditionals, from the need for truth-makers and leave them unexplained. This would undermine Martin's challenge to phenomenalism and eviscerate the idea of a truth-maker as a tool of philosophical criticism.

To avoid the problem, we could require truth-makers for both atomic truths and what I will call "strong compound truths," viz., compound truths, such as counterfactual conditionals, that are not truth-functions of their immediate constituents (Mellor 2003, p. 213). But once we expand the class of truths that require truth-makers in this way, it is idle to exempt straightforward negative and general truths, because any resources rich enough to provide truth-makers for strong compound truths will also be rich enough to provide truth-makers for negative and general truths.

I could secure this claim by invoking the Entailment Principle, which says that the truth-makers of any truth are also truth-makers of all propositions that it entails. Given that every negative or general truth is, as we may assume, entailed by some strong compound truth, it follows straightforwardly by the Entailment Principle that any resources that provide truth-makers for strong compound truths will also do the job for negative and general truths. But I do not wish to rely on the Entailment Principle, because it is not clear how to restrict it to contingent truths in order to avoid the implication that all necessary truths have numerous spurious truth-makers (Armstrong 2004, pp. 10–12).

But even if we bracket off the Entailment Principle, there is still good reason to think that any resources that can provide truth-makers for strong compound truths can also do so for negative and general truths. It is easy to come up with examples of true counterfactual conditionals that depend upon general and negative truths that they do not entail. Suppose that someone kicks a stone over the edge of a sheer cliff and it lands on the only ledge protruding from the cliff face, where it bounces, rolls, and stops. Then it is true that

(S)   If the stone hadn't landed on the ledge, it would have fallen to the bottom of the cliff,

because there are no impediments to the stone's descent other than the ledge and the ground at the bottom, and because all falling bodies carry on falling until they are impeded. When the truth of a counterfactual depends thus upon negative or general truths, it is entirely plausible that the counterfactual's truth-makers include truth-makers of those negative or general truths. This does not tell us what these truth-makers are, but it still undermines the idea that negative and general truths can be accommodated by principled restrictions that exclude them from the application of Truth-maker.

Someone might think that it is possible to finesse the problem of distinguishing between truths that require truth-makers and truths that don't by reformulating Truth-maker as the principle that for any truth, either there are things that necessitate its truth or no things that necessitate its falsity.[12] Call this "Truth-maker 2." To apply it, assume that things necessitate the falsity of a proposition if and only if they necessitate the truth of its negation. A benefit of Truth-maker 2 is that it readily accommodates the idea that some truths, such as negative existentials, are "true for lack of falsemakers" (Lewis 2001a, p. 611). But Truth-maker 2 won't work across the board. It cannot accommodate the possibility of a conjunctive truth, P & $\sim Q$, which, taken as a whole, has no truth-makers or falsemakers, but is true because P has truth-makers while $\sim Q$ lacks falsemakers. Truth-maker 2 also cannot accommodate counterfactuals like (S). For, setting aside negative and general facts and the like, this counterfactual is true not because of the existence of some things *or* because of the non-existence of others, but because of the existence of some things (including the cliff, the stone, and the ledge) *and* the non-existence of others (including impediments between the ledge and the ground, and things that stop falling without impediments). Truth-maker 2 cannot even accommodate a basic universal proposition, $\forall x Fx$, within an austere fact framework that recognizes only particular facts. Clearly, no collection of particular facts could necessitate the truth of $\forall x Fx$. But it is also evident that its negation, $\sim \forall x Fx$, if true, is true because of the non-existence of a truth-maker of one or more substitution instances of Fx, not because $\sim \forall x Fx$ is necessitated by any collection of particular facts. Thus, however the world may be, there are no existing facts that necessitate $\forall x Fx$ and also no existing facts that necessitate $\sim \forall x Fx$. According to Truth-maker 2 it follows that both are true. This is absurd.

Let us now consider the question of whether negative and general truths can be accommodated by limiting the application of Truth-maker Necessitarianism or sacrificing

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[11] For the sake of the argument, let us count the classical quantifiers as operators that express infinite truth functions and pretend (but only for the moment) that truths resulting from their application can be explained on the basis of the truth-values of the relevant atomic propositions.
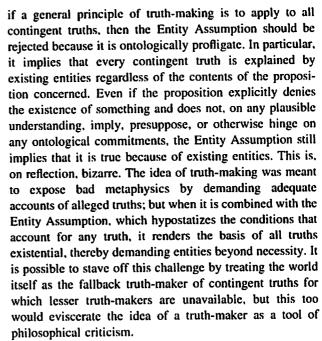
[12] Despite superficial similarities with Bigelow's supervenience principle (1988, p. 133), which I endorse below, this principle has not to my knowledge been advocated in the literature.

it completely. Mellor, whose account of general truths resembles the account included in my toy model, thinks that their truth-makers are exempt from the requirement of necessitation, but that this exemption is "harmless (because principled)" (2003, p. 214).[13] I cannot discover why. In any case, because of endless relations of dependence without entailment between different kinds of truths, there is little hope of a principled distinction between truths that require necessitating truth-makers and truths that don't. So the strategy of limiting the application of Truth-maker Necessitarianism is unviable.

But I don't want to sacrifice Necessitarianism completely, because, as I have hinted, truth-makers should explain the corresponding truths.[14] The truth-makers assigned to negative and general truths in my toy model fail this test. Particular facts alone cannot explain a negative or general truth, because they always leave it open that the proposition is false. And this is not a remote possibility, but one that is so close to home that it would be no surprise if we discovered that it were actual. An explanans must, at some level, necessitate its explanandum; it's not enough that both just happen to hold. But it is, I think, enough if the explanandum holds in all cases in which the explanans holds that are sufficiently similar to the actual case. This would secure the important result that the explanans establishes that the explanandum was to be expected, which I take to be necessary for an adequate explanation. We could, of course, obtain this result by requiring that the explanandum hold in all possible cases in which the explanans holds, without exceptions. But this is far too demanding for explanation in general, as well as for truth-making explanations that depend upon unstated and possibly indeterminate assumptions about the relevant circumstances. A satisfactory truth-making explanation of (S), e.g., might assume that gravity applies and that air is not an impediment to a falling stone. I will, therefore, retain Truth-maker Necessitarianism, but treat it as a weaker principle than usual.

But this still leaves us without a satisfactory account of negative and general truths. Something's gotta give. I propose that we sacrifice what I will call the Entity Assumption, viz., that truth-making is always a relation between one or more entities and a truth. This is clearly implied by Truth-maker and widely taken for granted. But

if a general principle of truth-making is to apply to all contingent truths, then the Entity Assumption should be rejected because it is ontologically profligate. In particular, it implies that every contingent truth is explained by existing entities regardless of the contents of the proposition concerned. Even if the proposition explicitly denies the existence of something and does not, on any plausible understanding, imply, presuppose, or otherwise hinge on any ontological commitments, the Entity Assumption still implies that it is true because of existing entities. This is, on reflection, bizarre. The idea of truth-making was meant to expose bad metaphysics by demanding adequate accounts of alleged truths; but when it is combined with the Entity Assumption, which hypostatizes the conditions that account for any truth, it renders the basis of all truths existential, thereby demanding entities beyond necessity. It is possible to stave off this challenge by treating the world itself as the fallback truth-maker of contingent truths for which lesser truth-makers are unavailable, but this too would eviscerate the idea of a truth-maker as a tool of philosophical criticism.

The Entity Assumption must go, but it's not obvious how to expunge it from Truth-maker. I propose that we do so by replacing Truth-maker with Bigelow's weaker supervenience principle, which I dub "Truth-maker 3": "If something is true, then it would not be possible for it to be false unless certain things were to exist which don't, or else certain things had not existed which do." (1988, p. 133) Lewis expresses this very neatly in terms of possible worlds: "For any proposition P and any worlds W and V, if P is true in W but not in V, then either something exists in V but not in W or else something exists in W but not V." (2001, p. 610)[15] To accommodate my weakened form of Necessitarianism, change "any worlds W and V" to "any world W and any sufficiently similar world V." The key attraction of Truth-maker 3 is that it allows that the conditions in virtue of which a proposition is true could involve both the existence of some things and the non-existence of others.

Armstrong offers two connected objections to the Bigelow-Lewis principle. The first is that it allows "certain truths... to be true... *because* they lack falsemakers" (2004, p. 68—emphasis changed). As I understand him, Armstrong rejects this because he holds that it is trivial that all truths lack falsemakers and therefore thinks that no truth

[13] As previously indicated, Mellor holds that negative truths lack truth-makers. I don't see the benefits of this position to anyone who thinks that general truths have truth-makers.

[14] Although he accepts Truth-maker Necessitarianism, Lewis denies that "a Truth-maker Principle... must yield informative explanations" (2001, p. 611). Emphasizing "informative," I agree. But a truth-maker must account for the relevant truth. Insofar as it does so, it explains it, even if the explanation is so obvious as to be uninformative.

[15] Two observations: First, Lewis has to weaken Truth-maker 3 further because of his wholesale rejection of facts, which deprives him of some of the entities needed to make the principle work (2001, pp. 612–614). Given my commitment to particular facts, there's no need for me to follow suit. Second, my endorsement of Lewis's principle should not be taken as an endorsement of his modal realism. None of my talk about possible worlds in this essay is meant to be understood realistically.

is explained by its lack of falsemakers. The second, which is directed at Lewis's formulation of Truth-maker 3, is that this principle will have no appeal to those, like Armstrong (and me), who think "that 'our world' is the totality of being" (2004, p. 71):

> Suppose that one is a one-worlder seeking the truth-maker for the... truth that there are no unicorns. In this... context, it is far less attractive to be told that it is merely the absence of falsemakers that 'makes' this sort of truth true. To try to analyze 'the absence of falsemakers' in terms of the unrealized possibility that the world might have been such that 'unicorns exist' is true seems ludicrous if it is *truth-makers* one is seeking. If one is a one-worlder,... it would seem that an absence of falsemakers is an *absence*. *Prima facie*, one has included absences—negative states of affairs—among one's truth-makers. (Armstrong 2004, p. 70)

There are several things wrong with these complaints.

First, neither version of Truth-maker 3 tells us how to talk about truth-makers and false-makers. In particular, neither implies that any proposition is true either because it has truth-makers or because it lacks falsemakers.[16] Bigelow and Lewis do say that certain propositions are true because they have truth-makers, but only when it is plausible that the existence of the entities concerned necessitates truth. And Lewis does say that certain propositions are true because they lack falsemakers, but only when it is plausible that the existence of the entities concerned would necessitate falsity. This usage should be understood as an informal attempt to adapt common ways of speaking about truth-making to Truth-maker 3 whenever possible. But Lewis and Bigelow never suggest that every truth holds either because it has truth-makers or because it lacks falsemakers, which would amount to an unwarranted endorsement of Truth-maker 2. Second, Armstrong is wrong to reject a lack-of-falsemakers explanation of any truth on the ground that it is trivial that all truths lack falsemakers. For, as we have seen in connection with Truth-maker 2, a proposition without falsemakers can be false. Thus, if it could be shown in the case of a proposition *P* that a lack of falsemakers guarantees truth, then *P* can be true *because* it lacks falsemakers.

Third, Lewis makes it clear that his reasoning in the paper concerned does not depend upon his modal realism (2001, p. 605). Thus, Armstrong, who appreciates the convenience of possible-world talk (1997, p. 11; 2004, p. 96), is free to interpret Lewis's formulation of Truth-maker 3 in one-worlder terms. Fourth, neither version of Truth-maker 3 suggests that the proposition that there are no unicorns is true because unicorns exist in other possible worlds (which is not obvious), but only that the proposition is true because unicorns do not exist in the actual world. Fifth and last, when Armstrong, recognizing that it is the absence of unicorns that does the important work, counts this absence as a kind of entity, he is simply taking the Entity Assumption for granted. But from our perspective, it is nothing but the failure of the Entity Assumption that motivates Truth-maker 3.

Truth-maker 3 easily withstands Armstrong's assault, but leaves open the question of what truth-makers are. Any straightforward answer of the form "Truth-makers are *C*s" is bound to be either unacceptable or misleading because, like the question itself, it suggests that truth-makers are entities of some kind, a view that I have taken pains to reject. I therefore tackle the question indirectly by reflecting on the logical form of statements of truth-making. Given that I reject the Entity Assumption, I must insist that these statements are not relational. Given that they are meant to be explanatory, it is reasonable to require that they be expressible in the form "*P* is true because...," where "because" is a two-place operator on sentences. Given that they must answer to Truth-maker 3, the blank following "because" should be filled with an existential sentence, the negation of an existential sentence, or a conjunction of existential sentences and negations of existential sentences. To clothe these second-order thoughts in first-order garb, I shall say that truth-makers are conditions of existence and non-existence that explain a truth. No doubt this could mislead when detached from the second-order point that it is meant to encode, but it is less likely to do so if one recognizes that the conditions of existence and non-existence at issue are actual conditions (like the conditions in which the poor of Calcutta live) rather than conditions of the kind that might or might not obtain (like the conditions under which Nancy Pelosi becomes President). In any event, my revised conception of truth-makers, when combined with robust standards of what kinds of things there could be, has all the critical bite that Martin ever needed.

I hasten to add that, in actual philosophical practice, many acceptable accounts of truths of various kinds will not be framed in the austere terms prescribed by my account of the canonical form of statements of truth-making and the most robust standards of what can exist, but in terms of other truths that are assumed to be either open

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[16] In order to adjust my simple model to accommodate Truth-maker 3, it would be necessary to replace the definition of *truth-making* with a definition of *truth* in which the base clause says that an atomic sentence φ is true in *W* iff the situation assigned to φ is a fact in *W*. The other clauses would be the same as in standard truth definitions. To avoid the implausible assumption of a 1–1 correspondence between atomic sentences and situations, an atomic sentence φ could be assigned an ordered pair $< S_1, S_2 >$ of disjoint sets of situations and defined as true in *W* iff all situations in S_1 are facts in *W* and no situations in S_2 are facts in *W*. Again, the other clauses would be the same as in standard truth definitions.

to such accounts or relatively unproblematic given the context of inquiry. In line with this, I hold that my original account of the truth of (S) serves, for many purposes, as an adequate specification of what makes (S) true even though it is not expressed in terms of existence and non-existence.

One apparent casualty of this approach is the claim that facts are truth-makers. Even if facts alone suffice to account for a truth, it now transpires that the truth is made true by the existence of these facts rather than by the facts themselves. The same applies to other entities that account for truths. Faced with this challenge, I could simply kick away my ladder. But I prefer to keep it in place by allowing that, while the term "truth-maker" now applies primarily to conditions that satisfy certain constraints, it also has a legitimate secondary application to facts and other entities when their existence is a truth-maker in the primary sense.

To sum up my position at this point: I have replaced Truth-maker Maximalism with the principle that all contingent truths have truth-makers, bracketed off the Entailment Principle, weakened Truth-maker Necessitarianism, and rejected the Entity Assumption in favor of the view that truth-makers are conditions of existence and/or non-existence in virtue of which a truth is true. These general commitments provide space for fact-based accounts of negative and general truths that do not appeal to either negative or general facts.

4 A Broader Perspective

My reasoning in Sect. 3 could be seen as a minor contribution to debates within the Truth-maker Program. Although some might regard my rejection of the Entity Assumption as beyond the pale, I have, so far, retained both the idea of a truth-maker as an important tool of metaphysics and the commitment to realism that has been absolutely central to the Truth-maker Program. I now want to go over to the dark side (or is it the light side?) by giving up on unrestricted realism. Of course I cannot hope to justify this move in a short final section, but I do have space to skim over some considerations that support it.

For motivation, let me invoke the case of unconditionally necessary truths. Following others, I have exempted these truths from truth-maker requirements as understood on all conceptions of truth-making considered so far, including the one on which I settle near the end of Sect. 3. My reason is that unconditionally necessary truths do not depend on the existence or nonexistence of anything else. But are there any such truths? It seems obvious that basic presupposition-free logical truths, e.g., that it is not the case that both something and nothing exists, and elementary arithmetical truths fit the bill. If you think that arithmetical truths depend upon the existence of numbers, substitute

corresponding conditionals that don't, e.g., replace "5 + 7 = 12" by "If numbers exist, then 5 + 7 = 12." Someone might object that unconditionally necessary truths depend on their own existence and can therefore serve as their own truth-makers—or, perhaps, that they are made true by the existence of anything that exists or the nonexistence of anything that does not exist. But in the absence of a systematic account of how the alleged truth-makers are rooted in the contents of the propositions concerned, facile moves like these should be rejected because they sacrifice the critical power of the idea of truth-making.

Grant, then, that unconditionally necessary truths do not have truth-makers as understood at the end of Sect. 3. Does this mean that, speaking informal philosophical English, there is no longer any point in asking what makes them true? Of course not. In fact, the question still expresses an important philosophical challenge, viz., that of giving a non-realistic account of their truth. Two things are required to meet such a challenge. The first and often much more difficult is to make the case for the claim that the truths at issue are propositions governed by non-realistic but nonetheless objective standards of truth. The second is to show that they satisfy these standards. Someone might, e.g., attempt to meet the challenge in the case of elementary arithmetical truths by arguing that the proper standard of truth for elementary arithmetical propositions is provability rather than the satisfaction of conditions of existence and non-existence, and then showing that the truths concerned are provable.

My proposal, then, is that we broaden the concept of truth-making to embrace any sufficiently deep and principled account of a truth or class of truths, regardless of whether that account is realistic. This presupposes the possibility of objectivity and objective truth without realism, which I support in other work.[17] Very briefly, I treat objectivism about propositions of a given type as the view that they are subject to non-arbitrary standards of truth on the basis of which it is, in favorable circumstances, possible to know that some of these propositions are true.[18] In contrast, I treat realism about propositions of a given type as the view that they are factual propositions that aim to describe a largely independent reality, and that they are true if and only if they do so. I take this to be equivalent to the claim that they

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[17] Pendlebury (2007) argues that, independently of whether they are to be understood realistically, judgments of minimal practical reasons can be objectively true; 2010 makes the case for a new form of normative expressivism that, notwithstanding its anti-realism, allows for the possibility of normative judgments being objectively true or false; and 2009 explains and offers a general defense of my distinction between objectivism and realism. Here I draw mainly on 2009.

[18] In Pendlebury (2009) I describe the kinds of things with respect to which one can be a realist or objectivist as "affirmations." Here I prefer "propositions" (even though it is less flexible) because it fits better with the vocabulary of the Truth-maker Program.

are true if and only if they have realistic truth-makers. Thus understood, objectivism and realism often come together. But they can also come apart. For present purposes, the most important possibility is that of objectivism without realism. This is well illustrated by mathematical intuitionism and other anti-realist positions on mathematical truth.

The choice between realism and anti-realism about propositions of a given type should not be understood as a mere matter of taste that is beyond dispute. The same applies to the choice between objectivism and anti-objectivism. Both choices call for justification based on a careful examination of thought and talk in the relevant domain and the kinds of resources that are available in that domain for defending claims, answering questions, and settling disagreements. The challenge of making and justifying such choices varies with the details of the case, and there can be no general presumption in favor of either realism or anti-realism, or of either objectivism or anti-objectivism. I take it, e.g., that while both realism and objectivism are sustainable with respect to everyday and scientific propositions about the macroscopic world around us, neither is at all obvious with respect to propositions about what is funny (Wright 1992, pp. 7–11, 100–107) and both are unsustainable with respect to propositions about what is "cool." Again, it would seem that, while it is not so easy to settle the question of realism concerning logic and mathematics, there is good reason to favor objectivism over anti-objectivism about these domains.

One benefit of the broader and looser conception of truth-making that I am recommending is that it restores Truth-maker Maximalism. In doing this, it closes off a possible escape from the demand for truth-makers and thus shores up the idea of truth-making as a powerful tool of philosophical criticism. It goes without saying that, in itself, this conception of truth-making demands less than the realistic conceptions advanced within the Truth-maker Program. But it's none the worse for that. The realism of the Truth-maker Program is an uncritical article of faith that is simply taken for granted. Although my broader conception of truth-making makes room for the possibility of objective truths without realistic truth-makers, it does not assume that this possibility is realized. What it does, rather, is call for more careful reasoning that does not beg some of the most challenging questions of philosophy. Insofar as it does this, it is a better instrument of philosophical criticism.[19]

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