MINIMALISTS ABOUT TRUTH CAN (AND SHOULD) BE EPISTEMICISTS, AND IT HELPS IF THEY ARE REVISION THEORISTS TOO

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Abstract: Minimalists about truth say that the important properties of the truth predicate are revealed in the class of T-biconditionals. Most minimalists demur from taking *all* of the T-biconditionals of the form "⟨p⟩ is true if and only if p", to be true, because to do so leads to paradox. But exactly *which* biconditionals turn out to be true? I take a leaf out of the epistemic account of vagueness to show how the minimalist can avoid giving a comprehensive answer to that question. I also show that this response is *entailed* by taking minimalism seriously, and that objections to this position may be usefully aided and abetted by Gupta and Belnap's *revision* theory of truth.

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Minimalism about truth is the appealing position that the function of the predicate "true", when applied to propositions, is revealed in the class of the T-biconditionals of the following form:[1]

$$\langle p \rangle \text{ is true if and only if } p. \qquad (1)$$

It is well known that some of these biconditionals lead to paradox. For example

$$\text{(2) is not true.} \qquad (2)$$

yields an instance of (1), namely

$$\text{(2) is true if and only if (2) is not true.} \qquad (3)$$

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[1] Following Horwich, I use "⟨p⟩" as a name of the proposition and "p" to indicate the use of a sentence expressing the proposition. Nothing, as far as I can tell, hangs on the use of the propositional formulation of minimalism, granting that we take paradoxical sentences to express propositions. The arguments of this paper could be transferred to forms of minimalism which take the important T-biconditionals to feature sentences and not propositions.

since the proposition (2) simply *is* $\langle$(2) is not true$\rangle$.[2] Now, endorsing (3) is too much for many to bear. So, minimalists endorse *many* T-biconditionals, but not all. Horwich for example says that he accepts the *non-paradoxical* instances of the T-scheme [10]. Instances of the T-scheme arising from liar propositions are canonical examples of paradoxical instances, and Horwich and many others do not endorse *those* instances.

But exactly which are the non-paradoxical instances of (1)? Which instances can we endorse? Some are unproblematic: the *grounded* propositions pose no problem in T-biconditionals. (For the definition of *groundedness* see Kripke's "Outline of a Theory of Truth" [11, page 694].) But not all ungrounded propositions are paradoxical. Take the seemingly more benign cousin of the liar, the truth-teller:

$$\text{(4) is true.} \tag{4}$$

This is ungrounded, but the T-biconditional for (4) is not inconsistent—it is the innocuous *tautology* "(4) is true if and only if (4) is true". Furthermore, some liar-like propositions travel in packs. Take this pair of sentences.

$$\text{(5) is not true.} \tag{5}$$

$$\text{(6) is not true.} \tag{6}$$

Some reflection will show that although T-biconditionals are not grounded when applied to (5) and (6), they can consistently apply. Unfortunately, they can consistently apply in two different ways. Either (5) is true and (6) is not, or (6) is true and (5) is not. Nothing from among the T-biconditionals tells us which option to take.

As a more difficult instance, consider *this* pair of sentences.

$$\text{(8) is true.} \tag{7}$$

$$\text{(7) is not true.} \tag{8}$$

If we endorse both of the corresponding T-biconditionals we get

$$\text{(7) is true if and only if (8) is true.} \tag{9}$$

$$\text{(8) is true if and only if (7) is not true.} \tag{10}$$

These aren't *both* true; however, if (9) is false, then there is no harm in asserting (10). On the other hand, if (10) is false, we do not contradict ourselves by asserting (9). If (9) is a paradoxical T-biconditional, then (10) is de-fanged, and it can be harmlessly endorsed. On the other hand, if we reject (10) as paradoxical then (9) loses its bite, and can be accepted.

[2] Of course, a minimalist could say that (2) does not express a proposition, but I have set that position aside for this paper.

This is not an isolated example. The 'contingent' liar loops discussed by Kripke [11], Yablo's paradox [5, 9, 13, 15, 17], and the many tangles discussed by Barwise and Etchemendy [4] show us that this kind of phenomenon is pervasive. For many of these structures there will be different ways to break the cycle and maintain consistency.

It follows that paradoxicality, for T-biconditionals, is not an all-or-nothing business. We cannot easily discern the *culprits* responsible for inconsistency. Sometimes the work is a team effort, and any way of breaking up the team will do to restore law and order. So we do not need to reject every ungrounded instance of the T-scheme to restore consistency, and there is no straightforward rule—and apparently, no rule at all [12]—to tell us which ones to pick in cases like (9) and (10).[3]

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Minimalism about truth is the doctrine that *all* there is to say about truth is given in the appropriate instances of the T-biconditional. In the version of minimalism under consideration here, only the *non-paradoxical* instances are true. If this is the case, we have seen many instances in which the class of true T-biconditionals just do not determine an answer as to whether or not a proposition is *true*. There appears to be a tension here. This tension can be worked into an *objection* against minimalism about truth.[4]

Objection: If the class of non-paradoxical T-biconditionals do not determine an answer in the case of the truth-teller sentences, the looped liar sentences and other paradoxes, then something else must determine an answer. Endorsing any particular answer at all will tell us something else interesting about truth, something not revealed in T-biconditionals. Any answer in these cases involves a move away from minimalism to some richer notion of truth appealing to other considerations [6, 7, 14].

Response: The appropriate response for a minimalist is *epistemicism* [16]. Here is why: only the *nonparadoxical* T-biconditionals govern the extension of "true". Which *are* the genuine non-paradoxical instances? We have no idea. As far as we can tell, non-paradoxicality determines that "true" has *some* extension, constrained by certain T-biconditionals. That means truth has some extension or other. Exactly which extension we can never know, for the only rules governing "true" don't tell us enough to decide the matter. Some instances are genuinely paradoxical—such as (3)—so we know that the biconditional cannot

[3] McGee takes the minimalist to be committed to endorsing a *maximal* consistent set of instances of the T-schema. I see no compelling reason for the minimalist to be committed to this. To be sure, maximality is *desirable* for a larger set decides more truths. However, whether or not the set of instances is maximal, the theory leaves some T-sentences undecided. The truth teller as an example. Perhaps a little more unsettledness than is strictly necessary is not an insuperable problem.

[4] Many of the objections discussed here are raised by Armour-Garb and Beall [2].

apply to *them*. If that is all there is we can say about the extension of truth, then there is nothing else we can say about whether or not (3) is true.

There is at least an analogy with vague terms. Our use of the language determines that certain predications of "tall" are true, and that others are not. There are borderline cases where we can ascertain no principle to demand inclusion in the extension of tallness, or exclusion from that extension. At the very least, this is a failure of our knowledge—we can determine no reason to take Charlie as tall, and we can take no reason to take him as not tall. The meaning of "tall" determines that it has an extension taking in the canonical tall cases and avoiding the canonical non-tall cases. But, so the epistemicist says, it must have *some* extension. Borderline cases arise from our failure to ascertain what that extension might be. The same, minimalism says, can and must go for truth.

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Objection: Certain T-biconditionals fail. For example, we agree that (3) must fail. But biconditionals can fail in one of two ways.[5] In the cases of failures of T-biconditionals, *which* way do they fail? Do we say that p but that $\langle p \rangle$ is not true, or do we say that $\langle p \rangle$ is true but it is not the case that p?

Response: If *all* there is to say about truth is revealed in the non-paradoxical T-biconditionals, then epistemicism is both appropriate and required here too. In the case of (3) that either (2) is true or that (2) is not true. If all there is to truth is given by the non-paradoxical instances of (1), then there is no *reason* to endorse one option over the other. But that is no further problem. One or the other is true, but we can never know which.

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Objection: So, we reject the biconditional in the case of the liar sentence. Suppose we accept the left part of the biconditional and not the right. We are then committed to the *truth* of (2). But if (2) is true, it is not any T-biconditional which gives rise to this fact. But doesn't this mean that we are predicating some property of (2) other than genuine minimalist truth?

Reply: The extension of truth is constrained by all of the non-paradoxical instances of the T-scheme. This means that, for propositions, the carving into the true and the untrue must respect these non-paradoxical T-biconditionals. Since "true" must have *some* extension, (2) will be in that extension of truth or it will not. In doing so we are not using some other predicate or ascribing some

[5] If it is not the case that p if and only if q, then either p and it is not the case that q, or q and it is not the case that p. This holds at least if "if and only if" is a material biconditional. At the very least, in this context of the debate, if the biconditional is really a stronger notion, such as some form of entailment, we can still resort to the weaker notion of material biconditionality to make this point.

other property of (2). We are still ascribing *truth* to (2), even if this is one of the rejected instances of the T-scheme.

Consider the analogy with the epistemicist approach to tallness. If Charlie is a non-canonical case of tallness—that is, he actually is tall but he is not one of the canonical instances of tallness—then we do not ascribe a different property of Charlie when we (truly) call him tall. No, he *is* tall, just as someone 220cm in height is tall. Any *oddness* in this case arises from the fact that he is a non-canonical case of tallness. We can truly assert that he is tall, but, if the epistemicist is correct, we do not *know* that he is tall. The same can apply in the case of truth. Paradoxical sentences might well be true (and this is the same property "truth" ascribed as for non-paradoxical sentences) despite not falling under the appropriate instances of the T-scheme.

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Objection: There is no *recipe* for separating paradoxical T-biconditionals from the non-paradoxical ones [7], because any recipe would suffice for sorting out all truths from falsehoods! The instance applied to

$$\text{If (11) is true then } p. \tag{11}$$

is paradoxical if and only if p is not true. So any algorithm for sorting out paradoxicality would give us an algorithm for sorting out truth.

Response: That's right! Perhaps, as we have conceded, there is no need to take the canonical T-biconditionals to be all of the non-paradoxical instances, so perhaps the more restrictive class of *canonical* instances may well be decidable by some recipe. Regardless, there is no reason to suppose that we *have* any algorithm at all for determining which T-biconditionals are the canonical ones. If we don't have such an algorithm, do we have a theory of truth at all? It seems like a great deal is unsettled, and it is surprising that there is such agreement about the concept of truth. The analogy with vague terms continues here. There is no agreement about the extension of vague concepts, but there is a great deal of agreement about the canonical instances of those concepts. The same holds for truth: We can agree that the concept of truth is constrained by at the very least the grounded T-biconditionals, where no circularity or self-reference is allowed at all. These biconditionals will give us members of the extension of T and members of the anti-extension of T. This is enough to give us quite a bit of agreement about the behaviour of truth. Perhaps we know as little about the precise boundary between truth and untruth no more than we know the precise boundary between the tall and the non-tall.

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Objection: What about falsehood? If only some of our T-biconditionals are non-paradoxical, then so too are some of the instances of the corresponding

F-biconditionals, which govern falsity:

$$\langle p \rangle \text{ is false if and only if it is not the case that } p. \tag{12}$$

But if we endorse the non-paradoxical instances of this scheme, then we leave open the option that some paradoxical sentences are neither true nor false. We also leave open the option that some sentences are both true and false. This does not involve us in any contradictions (any cases where we accept $\langle p \rangle$ and $\langle \text{not } p \rangle$) or in rejecting any instance of the law of the excluded middle (any cases where we reject $\langle p \rangle$ and reject $\langle \text{not } p \rangle$). Nonetheless, it seems more than a little surprising that minimalism requires us to be committed to failures of bivalence in this sense.

Response: It is an *option* for the minimalist to reject bivalence in just this sense. However it is certainly not mandatory. The appeal of the scheme (12) might well arise from the more primary connection between truth and falsity. If we accept (13)

$$\langle p \rangle \text{ is false if and only } p \text{ is not true.} \tag{13}$$

then there are no gaps between truth or falsity, or any gluts where we have both. (Underwritten, of course, by our prior acceptance of each $\langle p \text{ or not } p \rangle$ and our rejection of each $\langle p \text{ and not } p \rangle$.) Is this an extra fact about truth which makes this theory less minimalist? There is no reason to suspect that this is the case. As Horwich would say [10] these aren't further facts telling us something about the intrinsic nature of truth. The biconditional (13) can be read as constraining the behaviour of *falsehood*. And falsehood is no *thicker* notion, given simply its definition in terms of truth. We have simply traded one thin notion for another by connecting truth with falsehood.

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Objection: Minimalists think that the truth predicate is introduced into the language to do *work*. How can such a strange predicate—defined by its defining conditions in *some* places, and given free rein to vary as it pleases in others—ever do the work required of it? Why would we ever introduce a predicate like *that* into the language?

Response: Here the parallel with other kinds of epistemicism begins to pay its way. It is clear that predicates such as 'red' and 'tall' have been introduced into our vocabulary to do work, and that they are very useful indeed. We use these predicates to draw distinctions, and in very many cases, their use is unproblematic. I ask you to pass me the red book. You point out to me the tall woman. And so on. The predicates succeed even if the "rules" we can to articulate that govern the use of 'red' do not manage to uniquely carve the domain into the collection of red things and its complement, the collection of non-red things. No matter, we manage to get by even though the rules we can manage to articulate and specify don't pick out a single extension, and (to be honest) we would be happy with any number of the possible extensions compatible with what we *know* of the extension of 'red'.

The case with T is similar, though in this case we have not *under*-determined the extension with our rules. We have managed to *over*-determine it. Our rules—every instance of (1)—don't allow for *many* different extensions of 'true.' They allow for none. In this case, we don't get rid of the predicate, even though our requirements are inconsistent. Instead, we get by with as much as we can safely get away with. The case has a parallel with games with inconsistent rules (at least in those cases where the inconsistency shows up only in very odd and restricted circumstances), where we manage to avoid the area of unclarity, or make up conventions where the rules do not give us a settled answer, or simply 'make do' in any of a number of ways. Our use of the truth predicate, while introduced in order to do the *impossible*—satisfy (1)—manages to pay its way even if it cannot live up to those impossibly stringent requirements.

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Objection: But that is to ignore one of the most important uses of a concept of truth. Truth is introduced into a discourse in order (in part) to facilitate generalisations. If you are an epistemicist minimalist, then you have no reason to assert such seemingly trivial generalisations such as

An inclusive disjunction is true iff one of its disjuncts is true. (14)

For there is always the case that the disjunction (or the disjunct) is a paradoxical statement, in which case (1) does not apply and we have no reason to endorse generalisations like (14). However, generalisations like this are *central* to semantics and logic, and discarding them, even in the case of the paradoxes (especially where it seems that they won't be replaced by any other believable generalisations) is too great a price to bear. So, you might wish to *keep* generalisations like (14), but explicitly retaining them is to move away from minimalism, which takes it that T-biconditionals (and only those biconditionals) suffice for providing the meaning of the truth predicate [1].

Response: This is a serious objection, and it will not suffice to simply bite the bullet and reject generalisations such as (14). Instead, a minimalist must find a way to accept them without placing her minimalist credentials in peril. Can she do this?

I think that she can. As before, the answer is to be found in the parallel with other kinds of epistemicism. Consider Charlie. He is not a canonically tall person. He is not a canonically short person. He is a borderline case for the predicate 'tall.' Consider what we might say about the following biconditional

Someone the same height as Charlie is tall if and only if Charlie is tall. (15)

If we say that all that we *know* about the extension of 'tall' is that the canonically tall cases are tall and the canonically not tall cases are not tall, then we have *no* assurance that a generalisation such as (15) is true. But to acquiesce in this conclusion is silly. Not all extensions of 'tall' are alike, even among those that get their canonical extensions and anti-extensions correct. We might call a proffered precisification for 'tall' *regular* if it satisfies the following constraint:

$$\text{If } x \text{ is no taller than } y \text{ then if } x \text{ is tall, so is } y. \tag{16}$$

and an epistemicist may happily agree that the extension of 'tall' is regular. Perhaps the same trick can be turned in the case of minimalism about truth. After all, it seems congenial to minimalism to say that the extension of T is some *appropriate* set governed by the non-paradoxical T-biconditionals, where a proffered extension for T is appropriate when and only when it satisfies the collection of generalisations such as that specified at (14). We have not specified anything *substantial* about truth in this move: we have merely expressed a preference for how possible extensions for T may be selected out of the herd of competing candidates. It seems that the condition of appropriateness is a friendly amendment for the minimalist because the appropriateness of T (over some domain of propositions, such as the grounded ones) is *entailed* by the class of T-biconditionals (for that domain), and the constraint to keep the extension of T to be as appropriate as possible over the entire domain is another way to keep as much of (1) as we can.

We must be careful at this point. I have not specified *which* generalisations are satisfied by T, and more work must be done to examine *which* generalisations are safe for the minimalist to maintain. Suffice to say, the minimalist can respond, within the spirit of minimalism, and endorse as many generalisations as possible, consistent with the constraint of consistency: no matter what we try, T does not quite live up to the full collection of T-biconditionals.

This is where things seem to end if the minimalist takes her theory of truth to consist solely of the collection of non-paradoxical T-biconditionals. But the minimalist need not be so restrictive, and one way ahead provides a novel response to the generalisation problem.

The minimalist could take her theory of truth to consist of the collection of *all* of the T-biconditionals, without thereby taking this collection to be, as a whole, *true*. That is, the minimalist can take the collection of T-biconditionals, as a whole, to govern the meaning of the truth predicate. This keeps the minimalist safe *qua* minimalism. Nothing *else* is required to elucidate the concept of truth other than T-biconditionals. However, if we go beyond simple epistemicist minimalism—according to which the theory of truth is merely the class of non-paradoxical T-biconditionals—then we can avail ourselves of a principled answer to the generalisation problem. The minimalist can turn this trick by endorsing a variety of the *revision theory of truth* [8]. We say that the concept of truth is governed by the entire class of T-biconditionals, provided that these biconditionals are read as *revision* rules. We read the T-biconditionals as follows:

$$\langle p \rangle \text{ is true (at stage } i+1) \text{ if and only if } p \text{ (at stage } i). \tag{17}$$

What are stages? Stages are what one uses to evaluate expressions such as '$\langle p \rangle$ is true' and other definitions—especially *circular* definitions such as that of the concept of truth. We don't need to go into the detail here (for that, read Gupta and Belnap's account of the revision theory [8]). Here, it is sufficient to note that if we wish to evaluate the liar, we may reason as follows. If we have (2) at some stage, then at the next (2) is true, but this is the negation of (2), so at the one after, (2) is not true (which is (2) again) and so at the next after that, (2) is true, and so on. The paradoxical statement oscillates in value from true to false and vice versa.

One nice feature of the revision theory is that the grounded propositions do not oscillate in values from stage to stage: in fact, this is one way to carve out the grounded propositions. A the evaluation of a grounded proposition becomes *stable* after sufficiently many stages. In fact, we can construct single stages such that non-paradoxical statements have a stable evaluation, in the sense that for each non-paradoxical p, if p holds at this stage, it does at all successor stages as well. Call such a stage *regular*. One way to construct regular stages is to start with an initial stage, and proceed up the hierarchy of stages sufficiently high up the ordinals. Once we have passed through more ordinals than $2^{|\mathcal{L}|}$ (where $|\mathcal{L}|$) is the cardinality of the class of propositions in question) then we know we've gone through as many distinct evaluations as we can and anything that can stabilise *has*. We will think of stable stages in this way: as ones that have gone through such a process of revision that all stabilisation that will occur has occurred.

Now the epistemicist an reason as follows. Here is how truth works. It is governed by a revision rule. The revision theory tells us the *dynamics* of truth. We evaluate truth at a stage using the revision rule. Now, what can we say about what is actually true? What is actually true is what is true at some particular regular stage. We do not know which. The liar sentence is either true or it is false, but we have no idea what its truth value might be. Half of the regular stages evaluate it as true, and half of them evaluate it as false.

The epistemicist revision theorist, then, pictures the concept of truth as governed by T-biconditionals which are read as rule of revision (17). These rules establish a series of stages. Which stage is *actually* the case is something that we do not, and cannot know. This might not seem like much of an advance on what we might call 'static' epistemicist minimalism, but it differs in one crucial respect: the answer to the generalisation problem. Now, we may give a principled answer to the generalisation problem, for we can explain why generalisations such as (14) hold, given this account of truth. For now, given an inclusive disjunction $\langle p \vee q \rangle$, we may note that it is true at stage $i+1$ if and only if we have either p or q at stage i (applying (17)) and this holds if and only if we have either p at stage i or q at stage i (taking stages to respect inclusive disjunction) and thus (applying (17) again, this time in reverse) either $\langle p\rangle$ is true at stage $i+1$ or $\langle q\rangle$ is true at stage $i+1$. So the disjunction generalisation (14) holds at successor stages. The same will hold for *any* similar generalisation. If we have at every stage ϕ obtains if and only if some boolean condition in terms of the obtaining of $\psi_1, \psi_2, \ldots, \psi_n$ obtains, then at each successor stage, $\langle\phi\rangle$ is true if and only if that same boolean condition of the truth of $\langle\psi_1\rangle, \langle\psi_2\rangle, \ldots, \langle\psi_n\rangle$ obtains.[6] The structure inherent in *stages* suffices to ground a large class of generalisations with respect to the behaviour of the truth predicate. Truth, even in paradoxical cases, need not be unstructured, even if the T-biconditionals (read as material conditionals) fail to be true.

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Objection: But what about dialetheism? Isn't it just *simpler* to be robustly minimalist, accept each and every T-biconditional, and accept the contradictions that flow from them? Isn't it more sensible to accept a dialethic response to the paradoxes instead of fiddling about at the edges and accepting only the so-called 'non-paradoxical' T-biconditionals [3]?

Response: In some sense dialetheism is 'simpler' than fiddling about with the class of T-biconditionals, but in another sense it is much more complicated. To allow for truth-value gluts is to prise apart the denial of p and the assertion of its negation. The dialetheist argues that, at least for paradoxical sentences like as (2), it is appropriate to assert that sentence and its negation. But it does not follow that it is appropriate to *deny* the liar. So just what is the connection between denial and the assertion of a negation? Surely there is some connection, for in general we manage to deny quite successfully by asserting a negation. The dialetheist thinks that we don't in the case of paradoxical sentences. So, exactly *where* does denial and the assertion of a negation split apart? Perhaps it is at just paradoxical propositions. Again, a seemingly neat and simple generalisation must be restricted in some way. It is not only the classical minimalist that restricts a natural generalisation in the face of paradox.

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Minimalists who wish to avoid paradox arising from an unrestricted derivation of paradoxes can respond to the challenge of justifying which instances of the T-scheme actually hold by taking a leaf out of the epistemicist's book. In fact, it appears that they *have* to follow in epistemicists' footsteps. If all there is to say about truth is given in T-biconditionals, and if the extension of truth

[6] And provided that you are willing also to talk of *satisfaction* at stages (or truth relative to bindings of variables with objects) then the same general technique works with quantified statements as well.

is not totally determined by those instances, then we cannot determine the extension of the predicate "true." In as much as "true" is a predicate, it has some extension or other. Exactly which, we will never know. Exactly which, we *can* never know. If the minimalist reads these T-biconditionals as *rules for revision* then not only can the epistemicist position be understood as our essential ignorance of which stage is 'this' stage, we also discover an answer to the generalisation problem.

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