# BOOK REVIEWS

*Truth and Paradox: Solving the Riddles.* TIM MAUDLIN. New York: Oxford University Press, 2004. xii + 209 p. Cloth $74.00.

Attempts to give a consistent account of the liar paradox are not exactly new. Logicians have been attempting them for well over two millennia, but not with a great deal of success—at least if consensus is any reasonable guide. This fact does not exactly encourage optimism about new attempts; but of course there may well be some hitherto untried way of doing the job. In this book, Tim Maudlin turns his hand (from the philosophy of physics) to the challenge.

The book is clearly written and argued, and certainly contains interesting insights. It is also a very honest book: difficulties for the view espoused are not pushed under the carpet, but faced squarely. Some bits may strike a logician as a little odd. For example, Maudlin says, "It is, I am told, something like folk wisdom among logicians that the [arguments in the liar paradox] are to be defeated by disallowing the *T*-inferences [$\alpha$ + '$\alpha$' is true] in conditional proofs, i.e., within a subderivation" (106, and again, 132). I think that this will come as a surprise to most of the folk. He also says, "It is not clear how...Relevance Logic or Paraconsistent Logic could block any of [the inferences involved in Curry's paradox]" (15). It is a pity he did not seek advice on this as well: contraction-free relevant and paraconsistent logics are not exactly esoterica. On the other hand, the book contains nice illustrations of various ideas drawn from physics that would probably not have occurred to a logician.

In chapter 1, Maudlin spells out the liar paradox and Löb's paradox (or Curry's paradox, as it is perhaps more usually called). Chapters 2 and 3 spell out the views about truth on which Maudlin's solution to the paradoxes depends. Chapter 4 presents a language that is claimed to be "semantically closed." For reasons we will come to in due course, the account of truth needs to be augmented by a theory of permissible assertion; this is given in chapter 5. Chapter 6 gives a proof-theory suitable for the notion of truth involved, and applies it to some of the arguments related to the liar paradox thrown up by Gödel's Theorem (which is the topic, Maudlin tells us in the preface to the book, which generated his interest in the area). Chapter 7 gives a proof-theory for permissible assertability, which allows him to discuss an obvious extended paradox in chapter 8. Finally, chapter 9 replies to another very natural objection to the whole approach.

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Maudlin's solution comes in several distinct phases. The first is the claim that the liar sentence is neither true nor false. To justify this, Maudlin endorses the process by which sentences receive truth values in the construction of Saul Kripke's minimal fixed point (with Kleene 3-valued logic), so validating the "*T*-inferences." He then adds the claim that this is the only process by which truth values may be attained. So anything that is truth-valueless at the minimal fixed point is truth-valueless, *period.*

Whether this solves the liar paradox, we will come back to in a minute. The strategy would appear to be in trouble with some closely related paradoxes (not discussed by Maudlin), which one would expect to have the same sort of solution as the liar. Consider the "knower paradox"—κ: 'κ' is not known (by me). If this satisfies Excluded Middle, we have the usual contradiction. Now, belief is a nonalethic matter, and so statements about it are already determined as either true or false in the ground model of the construction—Maudlin calls such sentences "boundary sentences." Suppose that I do not, as a matter of fact, believe κ (which, in fact, I do not). Assuming that knowledge is some kind of true belief, it follows that I do not know it; so it *is* true; *a fortiori*, it satisfies Excluded Middle. (And if knowledge is *sui generis*, then it is unclear how one might go about applying Maudlin's strategy to solve it. Nor, for that matter, is it clear how the strategy might be applied to semantic paradoxes such as Berry's, which do not use the Law of Excluded Middle.)

Returning to the liar paradox itself, there is an obvious objection to the solution. According to the account in question, the liar sentence is not true, but that very claim is not true. So the theory would seem to be self-refuting. Nearly all the things one would want to say about truth by way of a theory of truth are not true either, such as that every conjunction is true if both conjuncts are true—when the quantifier is instantiated with a truth-valueless sentence, this is neither true nor false—or even that nothing true is false. In chapter 4, Maudlin constructs, in a natural way, a truth theory for a language with a truth predicate, and himself points out that, by his own lights, the theory is not true. (Actually, there are some technical problems with Maudlin's theory. The truth theory is for a first order language, but is given in a second order language with quantifiers over functions, so it is not semantically closed.)

In an attempt to solve this problem we come to the second phase of Maudlin's strategy. We invoke a notion of what it is permissible to assert. The norms involving this notion are, *inter alia*, as follows (97–98):

- all truths may be asserted;
- no falsehoods may be asserted;

- an ungrounded atomic sentence may not be asserted;
- the negation of an ungrounded atomic sentence may be asserted.

Thus, the liar sentence—λ: 'λ' is not true—may be asserted, but the claim that it is true may not.

An obvious question at this point is what to make of the notion of assertion and its norms. Maudlin seems to think (95) that standard norms for assertion are simply silent on what to do with truth-valueless sentences, and that we are therefore at liberty to fill in the silences as suits us best. But this is far from the case. The natural norm for assertability is that α may be asserted if it is true, and may not be asserted if it is not true. Truth is the aim of assertion. Once this connection is broken, the notion of assertion comes free from its mooring, and it is not clear why we should assert anything. Okay: we can assert that the liar is not true, but so what? Since it is not true, there seems to be no reason why I should believe it.

And just because this connection is broken, the norms concerning truth-valueless sentences proposed by Maudlin appear to be arbitrary. Why not assert atomic ungrounded sentences, but not their negations? Because, of course, that gives intuitively the wrong answer. But we are now bereft of an explanation as to why it is wrong.

Worse is to come. The introduction of this new machinery into the equation allows us, as usual, to formulate other self-referential paradoxes. The obvious one now is the sentence π: it is not permissible to assert 'π'. This is either true or false, since it is a boundary sentence. But if it is true it cannot be asserted, and if it is false, it can be asserted. One way or another, the rules for assertion have become incoherent. The connection between assertability and truth has broken, even in the case of sentences that are truth valued. Maudlin's response (chapter 8) is to shrug his shoulders. We know that following rules can sometimes get us into trouble. This is just a case of that. Phase three of the strategy.

But even here things are not that simple. If something is true, it is permissible to assert it; if something is untrue, it is not permissible to assert it. While we maintain these claims, π still generates a contradiction: it is and is not permissible to assert π. Of course, we may give up these claims. (Mauldin, in fact, "baldly denies" them (189).) But how is this any better than giving up the natural principles of inference concerning truth? A possible reply is to the effect that the *T*-inferences are constitutive of the notion of truth. If it is *truth* that we are talking about, one cannot give them up. But, for all the world, the claims about assertability seem to be constitutive of the notion of assertability. If it is *assertability* that we are talking about, one cannot give them up.

There is one final bullet to be bitten. The liar sentence is a contradiction: it is not possible for it to be true. It is none the less assertable. So, as Maudlin himself points out in a different context (127), his account commits us to the assertion of contradictory sentences. In the end, then, we have to accept a contradiction. The contradiction may not be true, but this is somewhat cold comfort. Assertability was introduced as a surrogate for truth, precisely because, on Maudlin's account, some of the things he wants to endorse are not true. It is a way of hanging on to the Good Things. It now turns out that contradictions can be Good Things too.

Maudlin's journey in search of the Holy Grail of avoiding contradiction has been a long one. On the way, there have been many casualties, *ad hoc* maneuvers, and hostages given up. And in the end, contradiction has not been avoided, only its truth—but the truth about semantics turned out to be rather uninteresting anyway: most things one might expect a theory of truth to deliver are untrue. It was a gallant try, and well worth the effort of exploring the approach. But I think that the main thing that Maudlin has taught us—though I am sure that he does not agree with this (and thanks to him for a generous set of comments on a first draft of the review)—is that yet another strategy for being consistent about the liar paradox fizzles out.

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