Truthmakers and possible worlds

David Efird & Tom Stoneham

We should distinguish two aspects of modal theorizing. There is the metaphysical theory of what kind of thing (unactualized) possibilities are,
for example, David Lewis’s (1986: 2) theory of possible worlds as maximally spatio-temporally inter-related sums of individuals. And there is the theory of what possibilities there are, of what is or is not possible, e.g. Lewis’s (1986: 87–88) principle of recombination.

In ‘Truthmaking and difference-making’ (2001) Lewis argues, from a position of metaphysical neutrality on the nature of unactualized possibilities, that the truthmaker principle (TM) is equivalent to a principle which he calls the ‘difference-making’ principle (DM). Given a plausible assumption, this principle then entails a claim about what possibilities there are (what metaphysically-neutral-possible-worlds there are), namely, that there cannot be indiscernible worlds. We show that, without substantive metaphysical assumptions of the kind Lewis is trying to remain neutral on, (TM) does not entail (DM). Lewis goes on to argue that (DM) is too strong and thus (TM) is false.\footnote{Lewis argues that the correct difference-making principle holds that any two worlds differ either in what exists at that world, or in the instantiation of fundamental properties and relations (2001: 612), and this entails a much weakened truthmaking principle.} But if we are right, his claim about what possibilities there are does not have any consequences for the truthmaker principle.

Lewis takes the standard truthmaker principle to be:

\[(\text{TM}) \text{ For any proposition } P \text{ and any world } W, \text{ if } P \text{ is true in } W, \text{ there exists something } T \text{ in world } W \text{ such that for any world } V, \text{ if } T \text{ exists in } V, \text{ then } P \text{ is true in } V.\]

(TM) obviously entails:

for any worlds W and V, if some proposition P is true in W but not in V, then something T exists in W but not in V.

Lewis then argues that ‘for any two worlds W and V, there is some proposition true in W but not in V’, namely ‘the proposition that world W is actualized’ (2001: 606). Combined with (TM) this is said to entail:

\[(\text{DM}) \text{ For any two worlds } W \text{ and } V, \text{ something } T \text{ exists in } W \text{ but not in } V.\]

On the reasonable assumption that if something exists in W but not in V, W and V are discernible, (DM) entails the identity of indiscernibles for possible worlds.

Is the inference from (TM) to (DM) valid? It needs the claim that for each world there is a proposition true at only that world. (TM) gives each such proposition a truthmaker which exists only at one world, but does not tell us what that truthmaker is. If propositions are sets of worlds, then there is clearly such a proposition, but to maintain Lewis’s strict neutrality
we need to give the content of a proposition which is true at only one world. Lewis suggests ‘W is actualized’, which we take to mean ‘W actually exists’ with the actuality operator taking narrow scope, or perhaps ‘This world is W’.

Take the truthmaker for the proposition that W is actualized, call it T*. Either T* = W or it does not. If it does not, (TM) guarantees that T* ‘exists in’ W. Suppose T* = W. By the principle of recombination, there is another world W+ which consists of W and some other stuff. But then any proposition for which W is the truthmaker would be true at both W and W+. To avoid this problem, we might suggest that T* = (W and the lack of anything else), which we can call W=. Now, if T* = W=, the only version of (DM) Lewis has established is:

\[(DM=) \text{For any two worlds } W \text{ and } V, W= \text{ exists in } W \text{ and not in } V.\]

But this says nothing whatsoever about whether there are indiscernible worlds. If worlds are mereological sums then any world which consists of W just is W, so (DM=) is trivial. If worlds are not mereological sums, (DM=) appears to rule out there being two worlds in which exactly the same things exist. But if worlds are not mereological sums, they must be some sort of ‘container’ in which things exist, and W= would include the container which is W and not the container which is V, making (DM=) trivial again. Moreover, on neither metaphysics of worlds does (DM=) rule out that V should contain an exact duplicate of W and nothing else. We conclude that if T* = W=, then the only form of (DM) entailed by (TM) is trivial.

Suppose instead that T* ≠ W=. Then (TM) does appear to entail (DM), but if the inference is valid, it must be monotonic, so we can add the premiss that worlds are mereological sums of their parts, a premiss which Lewis would be happy to accept. It then follows from T* ≠ W= that there is some S such that S exists in (i.e. is a part of) W and S ≠ T*. But then, by the principle of recombination, there is a possible world W* in which T* exists but not S. Given (TM), the existence of T* at W* is sufficient for the truth, at W*, of the proposition that W is actualized. But ex hypothesi this is a proposition which is true only at W. So (TM) alone does not entail (DM), though given the appeal to monotonicity, (TM) plus some other premisses may entail (DM). In particular, one may wish to deny that the principle of recombination applies to truthmakers (Lewis 1999: 220). But it was not the principle of recombination which was doing the real work in our argument above. The real problem is that T* can only exist in one world (and can have no other-worldly counterparts). This is not in general true of truthmakers, on pain of making the truthmaker principle trivial (2001: 604). So if T* ≠ W= but T* can only exist in W, it is a very special kind of truthmaker and there is nothing in (TM) alone to think there can be such things. We are back doing metaphysics again.
Lewis might try to avoid the first horn of this dilemma by appealing directly to the claim that worlds are mereological sums of their parts. For if $W^w$ is the truthmaker for the proposition that $W$ is actualized, then $W \neq V$, but that entails that they differ in at least one part, so the non-trivial reading of (DM) still follows.

Even if we overlook the minimal departure from metaphysical neutrality in the claim that worlds are sums of their parts, this move requires substantive metaphysics. First, note that (TM) is not intended to be vacuously true, as it would be if any $T$ which existed in $W$ could not exist in a distinct world $V$. Thus the $T$s must be such that they can exist in more than one world. This means that either worlds can share elements, which Lewis has called ‘overlap’ and argued against (1986: 198), or ‘$T$ exists in $V$’ means ‘a counterpart of $T$ exists in $V$’ (for counterparts, see Lewis 1986: 210).

If worlds are mereological sums and there is overlap, (DM) is true whether or not (TM) is. (And so long as the identity of indiscernibles is not true of all the parts of all worlds, (DM) allows for indiscernible worlds.) If there is no overlap, (TM) becomes:

$$(TM')$$ For any worlds $W$ and $V$, if some proposition $P$ is true in $W$ but not in $V$, then something $T$ exists in $W$ which has no duplicate counterpart\(^2\) in $V$.

And the conclusion:

$$(DM')$$ For any two worlds $W$ and $V$, something $T$ exists in $W$ which has no duplicate counterpart in $V$.

Call a pair of worlds ‘counterpart worlds’ iff the counterpart relation provides a unique one-one mapping of every part of one world to some part of the other. (DM’) rules out indiscernible counterpart worlds. Since the counterpart relation supervenes upon total world descriptions, (DM’) also rules out indiscernible worlds. But to get this substantive result, we have had to assume that worlds are mereological sums, that there is no overlap, and that a counterpart relation can be defined. These assumptions are hardly ‘metaphysically neutral’.

If there is no metaphysically neutral inference from (TM) to (DM), then the truthmaker principle is not equivalent to a claim about what possible worlds there are. So we cannot decide the metaphysical debate about truthmakers by this appeal to what is and is not possible.\(^3\)

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\(^2\) Since counterparts do not need to be indiscernible and duplicates may not be counterparts, what (TM) needs is that the existence of $T$ or a counterpart of $T$ which is also a duplicate of $T$ entails $P$.

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References

