

# Review of: "A Priori Arguments for Determinism/Universal Necessity – and the Leibnizian Theodicy"

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This is an interesting and stimulating paper on arguments for the conclusion that everything that is true is necessarily true. I don't have much to say about the parts of the paper on Leibniz, other than I think that "moral necessity" should probably be understood against the background of the medieval concept of "moral certainty" (see Pasnau's *After Certainty*) I do have some comments, however, on the World-Argument that Meixner presents at the start of the paper, in Section V. It is the only argument of which Meixner says that he takes it "more seriously." I want to point out what I see as the flaw in this argument, which is different from what Meixner diagnoses as the potential flaw. (I think that the other arguments have related flaws, but I am setting this aside here.)

The World-Argument is stated in a language that looks at first like the typical object-language of modal logic, but it includes resources that are typically available only at the meta-theoretical level, namely resources to say what is true in which world. (We also get such resources in two-dimensional modal logic, see Humberstone's work.) In particular, this language includes a predicate  $T(\cdot, \cdot)$  which holds of a pair of a sentence and a world iff the sentence is true in the world. So, the sentence  $T(p, w)$  is true, e.g., iff the sentence  $p$  is true in world  $w$ . Now, such truths are independent of the world in which they are evaluated. Either they are true in all worlds or in none. For if  $p$  is true in  $w$ , then this is either so or not, independently of the world at which we evaluate the sentence.

Now consider the fourth premise of Meixner's argument, which says (here rendered in slightly regimented English) that, for every sentence,  $p$ , it is necessary that if  $T(p, @)$ , then  $p$ . Here  $@$  denotes the actual world, so the premise says that, for any  $p$ , it is necessary that if " $p$ " is true in the actual world, then  $p$ . Is this premise plausible? In order to see whether it is, let's consider an instance. Suppose grass is green in the actual world, but grass is not green (but blue) in the possible world  $w_2$ . Hence, "grass is green" is not true in  $w_2$ . Now consider this instance of Meixner's fourth premise: It is necessary that if "grass is green" is true in the actual world, then grass is green. Let's unpack the necessity operator in an S5-ish way as universal quantifier over worlds (thus letting the accessibility relation be, in effect, universal): In all possible worlds, if "grass is green" is true in the actual world, then grass is green. The following is an instance of this generalization: It is true in  $w_2$  that if "grass is green" is true in the actual world, then grass is green. Which is equivalent to: Either "grass is green" is not true in the actual world, in  $w_2$ , or "grass is green" is true in  $w_2$ . Now, the first "in  $w_2$ " is irrelevant because if "grass is green" in the actual world, then it is true in all possible worlds that "grass is green" is true in the actual world. Moreover, it

is indeed true that grass is green in the actual world. So, we can conclude by disjunctive syllogism that “grass is green” is true in  $w_2$ . But that contradicts our stipulation that “grass is green” is not true in  $w_2$ .

This shows, as far as I can see, that Meixner’s fourth premise of the World-Argument is inconsistent if there are sentences that are true in the actual world but not true in another possible world. Hence, this premise by itself does all the work. The premise that Meixner goes on to discuss, which is the second premise of the argument, isn’t needed to get the desired conclusion; the fourth premise alone suffices.

Meixner might respond by saying that @ is not a rigid designator and is, hence, always designating the world at which we evaluate a sentence and not always the actual world. Under this interpretation, the fourth premise must be read as follows: For every sentence,  $p$ , at every world  $w$ , it holds that if  $T(p,w)$ , then  $p$ . And so our instance would turn into the following: For every sentence,  $p$ , at every possible world,  $w$ , it holds that if “grass is green” is true at  $w$ , then grass is green. And there is no problem with that. If we read @ in this way, however, the move from the fourth premise to line 7 of the World-Argument is fallacious. For, thus interpreted, this line says: In a world, @, for every sentence,  $p$ , if it is true in all possible worlds that  $T(p,@)$ , then it is true at every possible world that  $p$ . If we let  $p$  be “grass is green” again, then this says that if it is true in all possible worlds that “grass is green” in @, then “grass is green” is true in all possible worlds. If “grass is green” happens to be true at the world of evaluation, @, then the antecedent is true. But if we allow for worlds in which grass is blue, like  $w_2$ , the consequent is false. So we have a counterexample to line 7 of the World-Argument. Hence, the move from the fourth premise (now interpreted to make it true) to line 7 is invalid, under this interpretation.

So, it seems to me that either Meixner’s fourth premise does all the work by itself and basically amounts to an assertion of the desired conclusion, or the move from this fourth premise to line 7 of the World-Argument is invalid. Hence, I would need some further clarification in order to be properly motivated to engage in the arguments later in the paper, where Meixner discusses the second premise of the World-Argument in a lot of detail and combines this with an interesting discussion of Leibniz and Leibniz’s Theodicy.