

*A Priori* Arguments for Determinism/Universal Necessity – and the Leibnizian Theodicy

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For Peter van Inwagen  
on his eightieth birthday

This paper has two parts. In the first part, sections I to V, a priori arguments for determinism *qua* universal (truth-)necessity are presented (three of them God-related, two of them not) and assessed. In the second part, sections VI to VIII, the *Leibnizian Master Argument*, as I call it, is presented and discussed. The latter argument comprises, as a proper part, the last of the previously considered arguments for determinism – with *two* all-important modifications to it: a premise, previously unnecessitated, is necessitated (and no longer a premise), *and* necessity is taken to be what Leibniz called “moral necessity”. The Leibnizian Master Argument, too, argues for determinism *qua* universal necessity, but it is certainly not a determinism of the usual, value-free kind: Leibnizian determinism in the *Theodicy* (of 1709, from which work the Leibnizian Master Argument can be abstracted) is a consequence of the Leibnizian theodicy, which certainly cannot be said to be value-free.

To begin with, a short note is in order on the type of quantification employed in the formal presentation of the arguments: it is a two-sorted quantification: over individuals, *and* over propositions, where sentences are treated as names of propositions, each sentence naming the proposition it expresses (and no other proposition). The logic employed is, basically, two-sorted modal predicate logic with identity and definite descriptions, but also featuring, besides identity, other logical predicates (to be specified as we go along) together with their respective logical principles (all well-known from philosophical logic, for example, epistemic logic and tense logic). Variables  $x, y, z, x', \dots$  can be replaced by names of individuals, and vice versa; variables  $p, q, r, p', \dots$  can be replaced by names of propositions (that is, by sentences!), and vice versa. All inferences are perfectly elementary and, with one exception, perfectly valid.

And here are the arguments:

I. The argument from divine omniscience

*Notation:* “g” stands for “God”; “K(x, p)” stands for “x knows that p”.

*Premises:* (1)  $\forall p(p \supset K(g, p))$ ; (2)  $\forall p(K(g, p) \supset \Box K(g, p))$ ; (3)  $\forall p \forall x \Box (K(x, p) \supset p)$ .

*Deduction:*

From (1) and (2): (4)  $\forall p(p \supset \Box K(g, p))$

From (3): (5)  $\forall p \forall x (\Box K(x, p) \supset \Box p)$

From (4) and (5): (6)  $\forall p(p \supset \Box p)$ .

*Comment:* The motivation behind proposing premises (1) and (2) is to give divine perfection its due. But premise (2) is in the presence of premises (1) and (3) problematic even for theists: precisely because, contrary to the conclusion of the argument (that is, contrary to (6)), some true propositions just do not seem to be necessarily true; *such* propositions are (as follows from (3)) *not necessarily* known to be true by *anyone*, not even by God, although He does *in fact* know them to be true (as follows from (1)).

## II. The argument from divine will

*Notation:* “g” stands for “God”; “W(x, p)” stands for “x wills that p”.

*Premises:* (1)  $\forall p(p \supset W(g, p))$ ; (2)  $\forall p(W(g, p) \supset \Box W(g, p))$ ; (3)  $\forall p \Box (W(g, p) \supset p)$ .

*Deduction:* These three premises logically imply – in almost the same way as in the previous argument – universal necessity: (6)  $\forall p(p \supset \Box p)$ .

*Comment:* The motivation behind proposing premises (1) and (2) is, again, to give divine perfection its due; but premises (1) and (2) are problematic even for theists. Not every true proposition seems to be willed by God (for example, not the proposition that the adulteress sinned), and not every proposition that God wills [to be true] seems to be necessarily willed by Him (for example, not the proposition that He forgives the sin of the adulteress).

## III. The argument from divine foreknowledge

*Notation:* “ $P_{\Delta t}q$ ” stands for “It was [time-duration]  $\Delta t$  ago true that  $q$ ”; “ $F_{\Delta t}q$ ” stands for “It will be in [time-duration]  $\Delta t$  true that  $q$ ”.<sup>1</sup>

*Premises:* (1)  $\forall q(q \supset \Box P_{\Delta t}K(g, F_{\Delta t}q))$ ; (2)  $\forall p\forall x\Box(K(x, p) \supset p)$ ; (3)  $\forall q\Box(P_{\Delta t}F_{\Delta t}q \supset q)$ .

*Deduction:*

From (2): (4)  $\forall q\Box(K(g, F_{\Delta t}q) \supset F_{\Delta t}q)$

From (4): (5)  $\forall q\Box(P_{\Delta t}K(g, F_{\Delta t}q) \supset P_{\Delta t}F_{\Delta t}q)$ <sup>2</sup>

From (5): (6)  $\forall q(\Box P_{\Delta t}K(g, F_{\Delta t}q) \supset \Box P_{\Delta t}F_{\Delta t}q)$

From (1) and (6): (7)  $\forall q(q \supset \Box P_{\Delta t}F_{\Delta t}q)$

From (3): (8)  $\forall q(\Box P_{\Delta t}F_{\Delta t}q \supset \Box q)$

From (7) and (8): (9)  $\forall q(q \supset \Box q)$ .

*Comment:* The motivation behind premise (1) is, once again, to give divine perfection its due; but premise (1) is problematic even for theists. The problem with it is *the necessity* in it, and *the place* of the necessity in it; for  $\forall q(q \supset P_{\Delta t}K(g, F_{\Delta t}q))$ , where the necessity is deleted, and  $\Box\forall q(q \supset P_{\Delta t}K(g, F_{\Delta t}q))$ , where the necessity has been moved to the front, do seem acceptable – at least to (most) theists. Premise (1) is problematic because some presently true propositions just do not seem to be *necessarily true now*. Of such propositions it was *not necessarily* known  $\Delta t$  ago (for example, three days ago) that in  $\Delta t$  (in three days) they will be true, not even by God (even if He did know  $\Delta t$  ago that in  $\Delta t$  they will be true); for if it had been necessarily known  $\Delta t$  ago that in  $\Delta t$  they will be true, they would have been *necessarily true now*, which they just aren’t (although they are, indeed, *true now*).

#### IV. Diodorus Cronus’ Master Argument in an unfamiliar guise

*Notation:* The notation of Argument IV is the same as in Argument III, except for the fact that Argument IV features no quantification over propositions; rather, it is a *schema-argument*:

<sup>1</sup> It is more than 65 years ago that *metric tense-operators* were introduced in print into philosophical logic – in Arthur Norman Prior’s book *Time and Modality*, p. 11.

<sup>2</sup> The inference-schema for the step from (4) to (5) is this:  $\Box(A \supset B) \rightarrow \Box(P_{\Delta t}A \supset P_{\Delta t}B)$ . This inference-schema is logically valid for any concept of [alethic, ontic] necessity that entails the *Necessary Always* of whatever is necessary:  $\Box(A \supset B) \rightarrow \Box\text{Always}(A \supset B) \rightarrow \Box(P_{\Delta t}A \supset P_{\Delta t}B)$ , or even entails only the *Necessary Was-Always*: of whatever is necessary:  $\Box(A \supset B) \rightarrow \Box\text{Was-Always}(A \supset B) \rightarrow \Box(P_{\Delta t}A \supset P_{\Delta t}B)$ . (Incidentally, for “*Was-Always*” Prior put “*H*”.) Such concepts of necessity are certainly very far from being outlandish.

the letter “A” in it can be replaced by any sentence (that expresses a proposition) and by any sentence-schema which is more specific than “A”.

*Premises:* (1)  $P_{\Delta t}A \supset \Box P_{\Delta t}A$ ; (2)  $A \supset P_{\Delta t}F_{\Delta t}A$ ; (3)  $\Box(P_{\Delta t}F_{\Delta t}A \supset A)$ .<sup>3</sup>

*Deduction:*

From (1): (4)  $P_{\Delta t}F_{\Delta t}A \supset \Box P_{\Delta t}F_{\Delta t}A$

From (2) and (4): (5)  $A \supset \Box P_{\Delta t}F_{\Delta t}A$

From (3): (6)  $\Box P_{\Delta t}F_{\Delta t}A \supset \Box A$

From (5) and (6) (7)  $A \supset \Box A$ .

*Comment:* Here, premise (1) is problematic. A true statement that is *merely*, or *wholly*, about the past is indeed necessarily true (in an appropriate sense of “necessary”); but premise (1) contains no proviso that “ $P_{\Delta t}A$ ” is *merely* about the past, and certainly not every sentence of the form “ $P_{\Delta t}A$ ” is *merely* about the past: “ $P_{\Delta t}F_{\Delta t}$ Some sea battle begins” is *mainly* about the present, and “ $P_{\Delta t}F_{\Delta t'}$ Some sea battle begins” with  $\Delta t' > \Delta t$  is *mainly* about the future. (However, “ $P_{\Delta t}$ Some sea battle begins”, and “ $P_{\Delta t}F_{\Delta t}$ Some sea battle begins” with  $\Delta t' < \Delta t$ , are indeed *merely* about the past, and if true, necessarily true.)

Incidentally, the conclusion  $A \supset \Box A$ , being less general, is logically weaker than the conclusion  $\forall p(p \supset \Box p): A \supset \Box A$  is a logical consequence of  $\forall p(p \supset \Box p)$ , but not vice versa, because not every proposition is expressible (or nameable) by a sentence. If, however, one allows *open sentences* – specifically, sentences containing at least one free propositional variable – to be substitutable for “A”, then  $A \supset \Box A$  does indeed amount to  $\forall p(p \supset \Box p)$ : Assume  $A \supset \Box A$ ; hence: *It is true that*  $p \supset \Box$ *It is true that*  $p$ ; hence:  $p \supset \Box p$  [by modal propositional logic, making use of the following logical truth:  $p \supset$  *It is true that*  $p$ , and making use of the following logical truth:  $\Box$ (*It is true that*  $p \supset p$ )]; hence:  $\forall p(p \supset \Box p)$  [by *all-generalization*; nothing specific has been assumed regarding “p”].

Do I take those four arguments, I – IV, seriously? No, I do not. Their logic is impeccable, but it is obvious in each argument that at least one of its premises can be legitimately doubted (even if one accepts the presupposition of the three theistic arguments among the four: *that God exists*).

<sup>3</sup> In Prior’s *Past, Present and Future*, p. 100, the formula  $F_{\Delta t}P_{\Delta t}A \supset A$  (or in Prior’s Polish notation:  $CFnPnpp$ ) is postulated as an axiom. It is fair to say that, given the nature of the temporal order,  $P_{\Delta t}F_{\Delta t}A \supset A$  (and of course  $A \supset P_{\Delta t}F_{\Delta t}A$ ), too) is just as much a schema of necessary truths as  $F_{\Delta t}P_{\Delta t}A \supset A$  is a schema of necessary truths (so that necessitation – by putting “ $\Box$ ” in front of either formula and asserting the result – is perfectly justified).

However, there is an argument for universal necessity, and hence for determinism, that I do take more seriously:

## V. The World-Argument

*Notation:* “@” stands for “the actual world”; “ $w_0$ ” rigidly designates the possible world which is the actual world; “ $T(p, x)$ ” stands for “ $p$  is true in  $x$ ”.

*Premises:* (1)  $\forall p(p \supset T(p, @))$ ; (2)  $@ = w_0$ ; (3)  $\forall p(T(p, w_0) \supset \Box T(p, w_0))$ ; (4)  $\forall p\Box(T(p, @) \supset p)$ .

*Deduction:*

From (1) and (2): (5)  $\forall p(p \supset T(p, w_0))$

From (5) and (3): (6)  $\forall p(p \supset \Box T(p, w_0))$

From (4): (7)  $\forall p(\Box T(p, @) \supset \Box p)$

From (7) and (2): (8)  $\forall p(\Box T(p, w_0) \supset \Box p)$

From (6) and (8): (9)  $\forall p(p \supset \Box p)$ .

*Comment:* Here, the premises are indubitable, but the logic is problematic. The problematic move is the move from (7) to (8), on the basis of (2). The substitution of “ $w_0$ ” for “@” – since it is into a context of necessity – needs *more* than just the indubitable truth of premise (2): needs *more* than the truth of “@ =  $w_0$ ”. What is *needed* is the truth of “ $\Box(@ = w_0)$ ”.<sup>4</sup> And the truth of “ $\Box(@ = w_0)$ ” is, of course, intuitively doubtful. We are prone to believe that the actual world, although it is the world  $w_0$ , is not necessarily the world  $w_0$ . Putting it semantically: We are prone to believe that the singular term “the actual world” (“@”), although it does refer to the world that the singular term “ $w_0$ ” refers to, does not necessarily refer to the world that the singular term “ $w_0$ ” refers to.

There is, however, a line of thought which leads to the opposite conclusion. It starts with the assertion that every true or false sentence of everyday language is, considered in itself, semantically incomplete, in the following sense: merely given its own semantic content, it

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<sup>4</sup> It has long been known in modal logic that the substitution of referentially nonrigid definite descriptions into modal – more precisely: *alethic*, or *ontic*, modal – contexts, when applying “*all-instantiation*” or “*substitution of identicals*”, often generates falsehoods from truths – of which phenomenon W. V. Quine, notably, tried to make a sufficient reason for discarding quantified modal logic altogether. Note that the phenomenon in question does not occur on occasions where the identity underlying the substitution of identicals into an *alethic* modal context is not only true but also *alethically necessarily* true.

does not determine a truth-value for itself, even given *the totality of being*. What is needed for it to determine a truth-value for itself, is *additional* semantic information, information which is not provided by the sentence in and of itself, but – in accordance with certain rules – *implicitly* by an adequate context in which it is embedded. This additional semantic information can be made *explicit*; because every true or false but, taken in itself, semantically incomplete sentence of everyday language – provided it is embedded in an adequate context – can be *translated* (relative to that context) into a semantically complete true or false sentence. For determining the truth-value of this latter sentence, its semantic content and the totality of being are quite sufficient.

What is meant by these expositions can best be seen by considering an example. Consider the sentence “Here I stand”, which is semantically incomplete in a rather drastic way. However, by uttering it assertively, I would embed it in a particular context, and we can take it: it would be an adequate context. In fact, I will now utter it assertively: *Here I stand* – and therewith the sentence is embedded in an adequate context. Given this embedment and relative to this embedment, the sentence is true (believe me); and according to the line of thought initiated at the beginning of the preceding paragraph, it is true *for no other reason* than the reason that the following semantically complete sentence is true and indeed *necessarily* true: “At time  $t_0$  U.M. stands at place  $p_0$  in world  $w_0$ .”

Consider, then, the semantically incomplete sentence “The actual world is  $w_0$ ” (that is, “@ =  $w_0$ ”). Now, this sentence, too, is herewith uttered by me assertively: *The actual world is  $w_0$* . It is thereby embedded in the same world-context – the context of  $w_0$  – in which I previously embedded “Here I stand” by uttering this latter sentence assertively. Given this embedment, the sentence “The actual world is  $w_0$ ” is true; and according to the line of thought we are still following (see the preceding two paragraphs), it is true *for no other reason* than the reason that the following semantically complete sentence is true: “ $w_0$  is  $w_0$ ”, in full: the reason that “The actual world is  $w_0$ ” – if made semantically complete in *this world*, the world  $w_0$ , the world of our actual history – *translates* into “ $w_0$  is  $w_0$ ”, which is a necessary truth no matter which concept of necessity is applied. Thus, the sentence “The actual world is  $w_0$ ” – as uttered in this world, our world – is not only true but *necessarily* true, or in other words, “ $\Box$ (@ =  $w_0$ )” is true – which is precisely what is needed for making the World-Argument for universal necessity go through after all!

The line of thought I have been following is, among other things, that of *the indexical theory of actuality*, in particular, the indexical theory of *the actuality of possible worlds*. However, adherents of that theory (the most widely known is David Lewis<sup>5</sup>) usually stop short of the conclusion that “@ = w<sub>0</sub>” is necessarily true, thereby escaping universal necessity and unmitigated determinism. They (notably, David Lewis) do so by taking “@ = w<sub>0</sub>” in its non-remedied semantic incompleteness and by identifying necessity with truth in all possible worlds: There are plenty of possible worlds (namely, infinitely many) in which “@ = w<sub>0</sub>” is not true, besides the *one* world (w<sub>0</sub>) in which it is true; hence “@ = w<sub>0</sub>” is not true in all possible worlds; hence it is not necessarily true – and “□(@ = w<sub>0</sub>)” is *not* true. The World-Argument stalls.

However, it can be held against the described way of escaping the World-Argument that necessity qua truth in all possible worlds is certainly not the only concept of necessity, and that it is not the *relevant* concept of necessity. It can be maintained that the *relevant* concept is, and ought to be, in operation and establishes the truth of “□(@ = w<sub>0</sub>)” *even though* “@ = w<sub>0</sub>” is not true in every possible world. Indeed, the considerations that led, within the indexical theory of actuality, to the conclusion that “@ = w<sub>0</sub>” is necessarily true (see above) had nothing to do with the truth-value of that sentence in possible worlds other than w<sub>0</sub>. The conclusion is unavoidable that the World-Argument cannot well be escaped from as long as one adheres to the indexical theory of actuality. Lewis, in particular, cannot well be considered to have escaped from it; decidedly, the “way out” which is open to him has the appearance of being a mere subterfuge.

But, at this point, let us turn our attention to an important fact: Even if philosophers do not adhere to the indexical theory of actuality, the World-Argument may *capture* them nonetheless – may capture them even though they certainly *do not want* to be captured by it. In fact, there is an interesting, fairly deep philosophy-historical gloss on this truth.

## VI. The Leibnizian Master Argument

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<sup>5</sup> See Lewis’s classical paper “Anselm and Actuality”.

Leibniz, who was not an adherent of the indexical theory of actuality, nonetheless identified what he called “metaphysical necessity” with truth in all possible worlds.<sup>6</sup> However, from this concept of metaphysical necessity, Leibniz distinguished what he called “moral necessity”. In fact, he held that “@ = w<sub>0</sub>” is not a metaphysically necessary truth (rightly so, given his notion of metaphysical necessity), but that it is indeed a *morally necessary* truth.<sup>7</sup> Here it is important to keep in mind that by speaking of moral necessity, Leibniz did not intend *deontic* necessity, or in other words, *obligatoriness*. No, for Leibniz, moral necessity is an alethic, or ontic, necessity: For him, from the assertion that it is morally necessary that A, it always follows logically that it is true that A (which would certainly not be so if moral necessity were *deontic* necessity for Leibniz).

Thus, if one interprets the operator of necessity in the World-Argument (for universal necessity) as standing for *Leibnizian moral necessity*, then its second premise is not only true, but *morally necessarily* true, or in other words: “ $\Box(@ = w_0)$ ”, taken in the Leibnizian “moral” sense, is true – and in consequence the truth of “ $\forall p(p \supset \Box p)$ ” follows impeccably and inexorably (along the lines of the World-Argument). And Leibniz *did* endorse this conclusion; for him, *every truth is a moral necessity*. Not only Voltaire found this rather hard to believe: that every truth is a moral necessity, but it is precisely the Leibnizian determinism which we find in his *Theodicy*. In contrast, Leibniz denied in the *Theodicy* that every truth is a metaphysical necessity; he insisted that there are metaphysically contingent truths, “@ = w<sub>0</sub>” being the chief one of them.<sup>8</sup> He even held that there is freedom of choice for God.<sup>9</sup>

One can well ask how much freedom of choice the morally necessary free choice of God leaves to rational *creatures*, for example, human beings (after all “la liberté de l’homme” is

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<sup>6</sup> Leibniz is widely associated with taking (metaphysical) necessity to be truth in all possible worlds. I follow this ascription, but Leibniz himself certainly preferred a different definition of (metaphysical) necessity: proposition p is (metaphysically) necessary if, and only if, “the contrary” of p (its opposite, its negation) entails a contradiction. However, the two definitions are demonstrably equivalent under perfectly plausible assumptions (see (α) in the appendix to this paper).

<sup>7</sup> For Leibniz, God, in creating, chose a (single) possible world (namely, w<sub>0</sub>) to be the actual world (@) among the possible worlds. Leibniz writes: “Dieu a choisi entre de différents partis tous possibles; ainsi, métaphysiquement parlant, il pouvait choisir ou faire ce qui ne fût point le meilleur; mais il ne le pouvait point moralement parlant.” (*Essais de théodicée sur la bonté de Dieu, la liberté de l’homme et l’origine du mal*, part 2: § 234, p. 612.)

<sup>8</sup> Cf. footnote 7.

<sup>9</sup> “Car Dieu choisit parmi les possibles, et c’est pour cela qu’il choisit librement, et qu’il n’est point nécessité; il n’y aurait point de choix ni de liberté, s’il n’y avait qu’un seul parti possible. [...] Les décrets de Dieu sont toujours libres, quoique Dieu y soit toujours porté par des raisons qui consistent dans la vue du bien: car être nécessité moralement par la sagesse, être obligé par la considération du bien, c’est être libre, c’est n’être point nécessité métaphysiquement. Et la nécessité métaphysique seule, comme nous avons remarqué tant de fois, est opposée à la liberté.” (*Théodicée*, part 2: § 235, p. 614; § 237, p. 616.)



mentioned in the full title of the *Theodicy*). However, I leave this question aside and focus on quite another question. It is notorious that Leibniz considered “@ =  $w_0$ ” a morally necessary truth; but how did he arrive at this idea? And given how he arrived at it, what are the further considerations arising from this? According to Leibniz, given the existence of God – that is, the existence of the absolutely perfect being: all-powerful, all-knowing, all-good, and, last but not least, *all-rational* – it is, (a), *morally necessary* that the actual world is the best possible world. It is, (b), metaphysically necessary, hence *morally necessary*, that the best possible world is no other world than  $w_0$ . It is, therefore [by (a), (b), and the transitivity of necessary identity], *morally necessary* that the actual world is  $w_0$ .

The Leibnizian argument for (b) – for the metaphysical, hence moral, necessity that the best possible world is  $w_0$  – is as follows:

For Leibniz, (I) a possible world is actual if, *and only if*, it is created – made actual – by God; and (II) God creates a possible world if, *and only if*, it is a best possible world and there is no other best possible world beside it. Now,  $w_0$  (*this world*) is an actual possible world; hence [by (I) and (II)]  $w_0$  is created by God, and  $w_0$  is a best possible world and there is no other best possible world beside it. Moreover, (III) *if*  $w_0$  is a best possible world and there is no other best possible world beside it, *then* this excellence – the excellence described in the antecedent of this conditional – is true of  $w_0$  with metaphysical necessity. (Leibniz certainly assumed that the standard of the good- and bestness of possible worlds is *per se* valid and entirely objective, that is: neither relative to contingent circumstances nor relative to anyone’s interests and/or opinions.) Therefore, with metaphysical necessity,  $w_0$  is the best possible world, or [due to the symmetry of necessary identity]: with metaphysical necessity, the best possible world is  $w_0$ . Moreover, metaphysical necessity entails moral necessity. It is, therefore, morally necessary that the best possible world is  $w_0$ .

The Leibnizian argument for (a) – for the moral necessity that the actual world is the best possible world – is as follows:

According to Leibniz, (IV) it is morally necessary that God creates (makes *actual*) a possible world. Moreover, (V) it is metaphysically, hence morally, necessary that at most one possible world is actual (for the actuality of more than one possible world would lead to contradiction). It follows, as an intermediate conclusion, that it is morally necessary that a possible world,  $w$ , is created (made *actual*) by God and is identical with *the actual [possible] world*. Now, principle (II) in the preceding deduction [of (b)] remains true (*if it is true*) under neces-

sitation by moral necessity: (II\*) *It is morally necessary that* God creates a possible world if, *and only if*, it is a best possible world and there is no other best possible world beside it. From (II\*) and the intermediate conclusion, it follows that it is morally necessary that a possible world,  $w$ , is created by God and is identical with the actual world *and* identical with the best possible world. Consequently (by the logic of identity), it is morally necessary that the actual world is the best possible world.

With the deduction of (a) in addition to the deduction of (b), the Leibnizian deduction of *the moral necessity that the actual world is  $w_0$  – this world* – is complete, since this conclusion follows logically from (a) and (b), as already seen. And with *the moral necessity that the actual world is  $w_0$* , universal moral necessity – or: Leibnizian moral determinism – is an unavoidable consequence along the lines of the World-Argument, reading the operator of necessity ( $\Box$ ) as moral necessity (in the Leibnizian sense).

Is there a fault in the logic of the *Leibnizian Master Argument* (as one might call it)? I don't think there is one. The World-Argument is now a part of the Leibnizian Master Argument, the final part, and premise (2) of the World-Argument, being *now* not just " $@ = w_0$ " but " $\Box(@ = w_0)$ " (and no longer really a premise but a deduced statement), is now entirely adequate for the step from (7) to (8) in the World-Argument. There is nothing to be criticized in the rest of the logic of the Leibnizian Master Argument: *none* of the logical inferences belonging to modal predicate logic with identity and definite descriptions, and *none* of the auxiliary logical inferences. [For the record, those auxiliary logical inferences were the following two: (i) metaphysical necessity logically implies moral necessity, (ii) being created logically implies being actual.] Thus, if one wishes to attack the Leibnizian Master Argument – very likely because one finds its conclusion *unacceptable* – one must attack the premises it relies on.

And these premises are, indeed, attackable in a high degree – *not*, however, all of them; *not* those which do not speak of God at all: the premises of the World-Argument (*minus* the now necessitated and deduced "premise" (2)) and premises (III) and (V) (and also *not* the manifestly true auxiliary premise that *this world,  $w_0$* , is an actual possible world). I will not consider attacks on these two (or three) premises. In contrast, premises (I), (II), (II\*), and (IV) are each attackable in a high degree (from different directions) – *not*, however, if, like Leibniz, one has a Christian world view *and* defines God as the absolutely perfect being.

There are many modes of attacking the four last-mentioned premises. I consider two modes of attacking them, namely, the most prominent modes: (A) *if one has an atheistic world view*; (B) *if one has a Christian world view* (but is attacking those premises *none the less*).

*Mode (A): Having an atheistic world view*, one can simply hold against premise (I) that a possible world is actual (namely, *this world*,  $w_0$ ) and is not created by God. In fact, God, being nonexistent, creates nothing; hence, *a fortiori*, no possible world is created by Him – and premise (IV) is “done for”, too.<sup>10</sup> In the absence of (I) and (IV), one may as well stick – provisionally – to (II\*) and, therefore, to (II). But might one not be forced to accept God as creator (and hence as existent) if one held on to (II)? For, might it not turn out that some possible world is a best possible world with no other possible world being a best one beside it? An atheist can answer that this is highly unlikely; and if, despite its unlikelihood, it turned out to be true, then there is still room (and time) to deny (II), and therefore (II\*), by maintaining that God does not exist and, therefore, does not create anything, hence does not even create anything which is a best possible world with no other best possible world beside it.

*Mode (B): Having a Christian world view*, one cannot deny (I) and one cannot deny that God created (made actual) a possible world (at least, one cannot deny these propositions if one sticks to the Apostolic Creed). What one can deny, however, is that *it is morally necessary* that God creates a possible world; that is, one can deny (IV). One may hold that God simply decided to create a world (to make actual a possible world), without any motive, reason, or cause, purely out of the depth of His own absolute sovereignty. It is in line with this position to deny (II\*): There are *no* fetters to God’s absolute sovereignty; therefore, just as it is not morally necessary that God creates a world at all, so it is not morally necessary that the world He creates (if He decides to create one) is a best possible world, let alone the only best possible world. For the same reason – *No fetters to God’s absolute sovereignty* – it is not morally necessary that a best possible world which is such that there is no other best possible world beside it – is created by God; it may remain uncreated if God, in His absolute sovereignty, decides not to create it. In fact, if one has a Christian world view that accords absolute sovereignty to God, it is “no problem” to deny (II) (and not only (II\*)): the denial is effected by holding that  $w_0$  – being a possible world that is actual – is created by God (ac-

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<sup>10</sup> Remember that the *Leibnizian* moral necessity of a proposition entails its truth.

ording to (I), which tenet has *not* been given up) but that  $w_0$ , *this world*, is not a best possible world – which is a common enough opinion even among Christians.

Yet for Leibniz, *who is a Christian for whom God is the absolutely perfect being*, neither mode (A) nor mode (B) can be a theological option. Leibniz *does* believe that God's absolute perfection puts fetters on God's sovereignty, making His sovereignty somewhat less than absolute. The perfect goodness and might of God make it *per se* morally necessary that God creates a world ("bonum est diffusivum sui," the medieval philosopher-theologians said); hence, for Leibniz, (IV) is vindicated. In turn, the perfect goodness, might, omniscience, and rationality of God make it morally necessary that a possible world is created by God if, and only if, it is a best possible world and there is no other best possible world beside it. [If a world is not a best possible world, then God – in His omnipotence and omniscience – has no rationally sufficient *good* reason to create it and, since He is also perfectly good and perfectly rational, would not create it; if it is a best possible world but there is another best possible world beside it, then God again – in His omnipotence and omniscience – has no rationally sufficient good reason to create it and, since He is also perfectly rational and perfectly good, would not create it.] Thus, for Leibniz, (II\*) – and therefore (II) – is vindicated.<sup>11</sup> And, like every Christian, Leibniz believes that a possible world is actual if, and only if, it is created (made actual) by God; in other words, Leibniz believes in (I).

Premises (IV) and (II\*) together logically imply that it is morally necessary that precisely one possible world is a best possible world. Consequently, if it is not true that precisely one possible world is a best possible world, it follows that (IV) and (II\*) are not both true. If, however, it is true that precisely one possible world is a best possible world, then this truth is not only morally necessary (as can be deduced on the basis of (IV) and (II\*)), but also *metaphysically necessary* (and see again the parenthetical gloss inserted on the occasion of the introduction of premise (III)). Clearly, the Leibnizian premises contain a massive implicit assumption of metaphysical necessity. It is an assumption, by the way, also atheists can make – without compromising their atheism; but as far as *Christian absolutely-perfect-being theism* in a specifically *Leibnizian* perspective is concerned, the assumption in question expresses one side of a *metaphysically necessary* ("preestablished") *harmony* between the metaphysically necessary uniqueness of an absolutely perfect being and the likewise metaphysi-

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<sup>11</sup> Cf. "[O]n peut dire de même en matière de parfaite sagesse, qui n'est pas moins réglée que les mathématiques, que s'il n'y avait pas de meilleur (*optimum*) parmi tous les mondes possibles, Dieu n'en aurait produit aucun." (*Théodicée*, part 1: § 8, p. 218; emphasis in the original.)

cally necessary uniqueness of a best possible world. For Leibniz, God and the best possible world match each other *with metaphysical necessity*. (And, for Leibniz, also the [with metaphysical necessity] *living* God and the best possible world *made* [with moral necessity] *actual* match each other, but only with *moral* – not with metaphysical – *necessity*.)

If one is, like Leibniz, a Christian and, moreover, an absolutely-perfect-being theist, the following consequences are demonstrably (as seen) unavoidable, in which “ $\Box$ ” is to be read as “it is morally necessary that”, and “ $\text{!xBPW}(x)$ ” stands for “the best possible world”: (a)  $\Box(@ = \text{!xBPW}(x))$ , (b)  $\Box(\text{!xBPW}(x) = w_0)$ , (c)  $\Box(@ = w_0)$  [which follows logically from (a) and (b)], (d)  $\forall p(p \supset \Box p)$  [which is the conclusion of the World-Argument *with* (c) – instead of merely “ $@ = w_0$ ” – as premise]. To most people, these consequences have seemed *perfectly implausible*. In particular, in view of the truth of “ $@ = w_0$ ”, it has seemed patent (famously, to Voltaire and to Schopenhauer) that neither “ $@ = \text{!xBPW}(x)$ ” nor “ $\text{!xBPW}(x) = w_0$ ” is true (for *this world*,  $w_0$ , the actual world, besides being filled with countless lesser evils, contains genocides and many other mass-sufferings and mass-deaths of totally innocent people, caused by wars, pandemics, earthquakes, floods, droughts, etc.) and hence that neither (a) nor (b) is true. It has seemed, moreover, that the very truth of “ $@ = w_0$ ” blocks, for *moral* reasons, the *morally necessary truth* of “ $@ = w_0$ ”, in other words: the *truth* of (c), *in this way directly refuting* (d) (by counterexample).

Leibniz was aware of this objection to his argument: the objection directed against (a) and (b) in the preceding paragraph (in what follows, it will be called “*the central objection*”), and he had two modes of answering it: (A´) the *a priori* mode, (B´) the *a posteriori* mode. Expressed in the terms of this paper, (A´) and (B´) are the following stances:

*Mode (A´)*: Can God be anything less than absolutely perfect: all-powerful, all-knowing, all-good, all-rational? No, denying absolute perfection to God is like denying primeness to 2 (and unlike denying primeness to 2, it is, for Leibniz, almost equivalent to blasphemy<sup>12</sup>). But then, for a true and truly rational Christian, besides the acceptance of premises (I), (III), and (V), also the acceptance of premises (II), (II\*), and (IV) is mandatory, and accepting the consequences – notably, (a) and (b), and furthermore (c) and (d) – is unavoidable.

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<sup>12</sup> Cf. “[I]ls croient que Dieu aurait pu mieux faire; et c’est un sentiment qui doit être rejeté: car quoiqu’il n’ôte pas tout à fait la sagesse et la bonté à Dieu, comme font les auteurs de la nécessité aveugle, il y met des bornes; ce qui est donner atteinte à sa suprême perfection.” (*Théodicée*, part 2: § 168, p. 494.) “Il ne faut pas être facilement du nombre des mécontents dans la république où l’on est, et il ne le faut point être du tout dans la cité de Dieu, où l’on ne le peut être qu’avec injustice.” (*Théodicée*, part 1: § 15, p. 228.)

*Mode (B')*: Do we really know this world,  $w_0$ , which is the actual world, @? We certainly do not; our human eyes do not reach very far, and certainly not far enough to pass judgment on the whole cosmos (which, for Leibniz, is infinite, infinitely rich in being, and has an unknown invisible part besides the – in its turn, only partly known – visible part).<sup>13</sup> In view of this, one should keep in mind: An item which has a part that, taken in itself, is bad can still be as perfect as it is at all possible for it *as a whole*, can even be *the (one and only) best of its kind*, and can be such that it would not be perfect as a whole if it did not have that same bad part.<sup>14</sup> Therefore, this world – the actual world – *may very well* be the best possible world; and in fact we *must* conclude that this world,  $w_0$ , and the actual world, @, are each *with moral necessity* the best possible world:  $\text{ixBPW}(x)$ , if we are true and truly rational Christians (see mode (A')). And, of course, we must then also accept the further consequences (that is, (c) and (d); see above).

For modern minds, epistemic modesty in the philosophical consideration of cosmological matters is a highly unfamiliar attitude: to most contemporaries it seems that they know this world well enough to judge it. Therefore, mode (B') of answering *the central objection* (to the Leibnizian Master Argument) is very “unpopular” (so to speak). Unpopular or not, it seems to me that Leibniz has a point here – that is, *if* mode (B') is supplemented by mode (A'); as, after all, it must be, because (B') in itself, though plausible, is a fairly weak answer to *the central objection*.

However, mode (A') of answering *the central objection* is entirely ineffective if that objection is raised by atheists. For atheists, there is no god, let alone a god who is absolutely perfect, so as to be all-powerful, all-knowing, all-good, all-rational. Even for many people who, I dare say, are true and truly rational Christians, the one god, God, is certainly not without question absolutely perfect, so as to be all-powerful, all-knowing, all-good, all-rational. Hence, also for these Christians, (II), (II\*), and (IV) remain in doubt and cannot help to overcome *the central objection* when it comes to mind (as it certainly will). Many people, of course, attempted to prove the existence and uniqueness of an absolutely perfect being (which in any adequate *substantial* conception of absolute perfection would have to be all-powerful, all-knowing, all-good, all-rational). This is not the place to go into these proof-

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<sup>13</sup> Cf. “L’objet de Dieu a quelque chose d’infini, ses soins embrassent l’univers; ce que nous en connaissons n’est presque rien, et nous voudrions mesurer sa sagesse et sa bonté par notre connaissance: quelle témérité, ou plutôt quelle absurdité!” (*Théodicée*, part 2, § 134, p. 432/434.)

<sup>14</sup> Cf. “Ainsi, si le moindre mal qui arrive dans le monde y manquait, ce ne serait plus ce monde, qui, tout rabattu, a été trouvé le meilleur par le créateur qui la choisi.” (*Théodicée*, part 1: § 9, p. 220.)

attempts (from Anselm to Gödel); suffice it so say that, although they are often formally impeccable, those attempts are not successful in the following sense: they do not make it a general rational obligation to believe that there is precisely one absolutely perfect being – which being, indeed, one could hardly avoid calling “the god” or, in one word, “God”.

## VII. The metaphysical determinism objection to the Leibnizian Master Argument

“Every truth is a moral necessity”, in symbols:  $\forall p(p \supset \Box p)$ , with “ $\Box$ ” being interpreted as *moral* necessity, is the conclusion of the Leibnizian Master Argument. It expresses *a kind of* determinism: universal *moral* necessity, *Leibnizian moral* determinism, the Leibnizian determinism in the *Theodicy* – which Leibniz believed to be perfectly compatible with human and divine free choice, free decision, and free action. On the other hand, Leibniz acknowledged that human and divine freedom is indeed *incompatible* with *metaphysical* determinism, with universal *metaphysical* necessity; but metaphysical determinism, Leibniz believed, is obviously wrong: countless truths, he believed, are not metaphysically necessary but metaphysically contingent.

For anyone who acknowledges a plurality of possible worlds (like Leibniz, like David Lewis, and many others), it is correct to hold that countless truths are not necessary in the sense of being true in every possible world; “@ =  $w_0$ ” is one of those truths. This fact is for Leibniz a sufficient basis to conclude that “@ =  $w_0$ ” is *not metaphysically necessary*. Yet his argument for the *moral necessity* of “@ =  $w_0$ ” (or for “ $\Box(@ = w_0)$ ”, with “ $\Box$ ” being interpreted as moral necessity) appears to be rather easily convertible into an argument for a stronger than merely moral necessity of “@ =  $w_0$ ” – a necessity to which one cannot well deny the epithet “metaphysical” (thereby, of course, having “metaphysically necessary” mean something else than “true in every possible world”). If denying absolute perfection to God is like denying primeness to 2 [see mode (A') of the Leibnizian response to criticism of the Leibnizian Master Argument], then it appears to be not only morally necessary but *essential for God, in the very nature of God* – in this sense: *metaphysically necessary* for Him – to be absolutely perfect; then God *absolutely* cannot – and not only *morally* cannot – not be absolutely perfect. In fact, this is how the absolute perfection of God has generally been taken in God-as-the-absolutely-perfect-being theology: as *absolutely necessary*. Given that it is absolutely neces-

sary for God to be absolutely perfect, the crucial premises (IV) and (II\*) are true even if “morally necessary” in them is replaced by “absolutely necessary” – or: by “metaphysically necessary” in the sense of “absolutely necessary”. Moreover, premises (III) and (V) [and of course also “metaphysical necessity logically entails moral necessity”] remain true if “metaphysically necessary” is taken in the sense of “absolutely necessary” in them. Thus, Christians who are absolutely-perfect-being theists – and Leibniz is one of them – not only have to accept (I) and (II); they also have to accept (II\*), (III), (IV), and (V) *in the just-described modified form*: with “absolutely necessary” replacing “morally necessary”. As a consequence, given the deductive lines of the Leibnizian Master Argument, they have to accept “ $\Box(@ = w_0)$ ”, with “ $\Box$ ” being interpreted as *absolute* (and metaphysical, not merely moral) necessity, and in the end they have to accept “ $\forall p(p \supset \Box p)$ ”, with “ $\Box$ ” being interpreted as *absolute* (and metaphysical, not merely moral) necessity.

What does this mean for the Leibnizian Master Argument? It means that this argument can be used to prove more than Leibniz intended: it can be used to prove absolute metaphysical determinism, and not just Leibnizian moral determinism. The uniform replacement of talk of *moral necessity* in the argument by talk of *absolute necessity* is all that is needed for this “upgrade”. Under the indicated reinterpretation, the premises of the Leibnizian Master Argument remain plausible for Christians who – like Leibniz – are absolutely-perfect-being theists. For those Christians, however, who have not already come to a decision whether to be an absolutely-perfect-being theist or not, the upgraded Leibnizian Master Argument is even more than the original form of the argument likely to be a strong motive for *rather not* to become an absolutely-perfect-being theist.

#### VIII. Answering the metaphysical determinism objection?

What would Leibniz have said in response? We can take it for granted that he would not have given up being a Christian who is an absolutely-perfect-being theist. Rather, he would have denied that his argument – the Leibnizian Master Argument – is “upgradable” in the manner described, therewith becoming destructive of divine freedom and of any freedom whatsoever. For example, regarding premise (IV) – “It is morally necessary that God creates (makes actual) a possible world” – he would have held that it is entailed by God’s absolute



perfection, whereas the *upgraded, strengthened* premise (IV) – “It is *absolutely necessary* that God creates (makes actual) a possible world” – is not entailed by God’s absolute perfection and is, indeed, false (and he could have pointed to the vast majority of Christian thinkers who have denied that there is an absolute necessity for God to create). But the countermove to this move of his is obvious: “Is it not essential for God – that is, absolutely necessary for Him – to be all-good and all-powerful, perfect goodness and perfect powerfulness essentially belonging to the absolute perfection which *defines* God, and is not that which is essentially all-good and essentially all-powerful *per se* essentially *world-creative*?” And again – if tradition is invoked in support of one’s position – the “*bonum est diffusivum sui*” is likely to be cited, but now as a formula that proposes not merely the moral, but also the absolute necessity of God’s creating a world.

For Leibniz (in the interpretational reconstruction of his position), moral necessity consisted definitionally in this: proposition *p* is morally necessary if, and only if, *p* is either metaphysically necessary, or *p* is not metaphysically necessary but true and there is a sufficient *good* [that is: *sub specie aeternitatis et totalitatis morally good*] reason for the truth of *p*. And metaphysical necessity, for Leibniz (in interpretational reconstruction), consisted definitionally in this: proposition *p* is metaphysically necessary if, and only if, it is true in every possible world. Now, the conclusion of the Leibnizian Master Argument is that every true proposition is morally necessary, which, given the Leibnizian definition of moral necessity, logically entails this: Every true proposition that is not metaphysically necessary has a sufficient *good* [*sub specie aeternitatis et totalitatis morally good*] reason for its truth. I call this optimistic assertion – a slight (but significant) modification of the well-known Principle of Sufficient Reason – “the Principle of Sufficient *Good* Reason”. For Leibniz it was literally unthinkable that a proposition that is not metaphysically necessary could be true and yet have no sufficient reason for its truth; he was an adamant believer in the Principle of Sufficient Reason.<sup>15</sup> The Leibnizian Master Argument displays him as a no less adamant believer in the Principle of Sufficient *Good* Reason (or to put it more precisely: in the Principle of Sufficient *Godly Good* Reason). In fact, on the basis of the Leibnizian Master Argument it is clear that

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<sup>15</sup> Cf. “[I]l y a deux grands principes de nos raisonnements: l’un est le *principe de la contradiction*, qui porte que de deux propositions contradictoires, l’une est vraie, l’autre fautive; l’autre *principe* est celui de la *raison déterminante*: c’est que jamais rien [de métaphysiquement contingent] n’arrive, sans qu’il y ait une cause ou du moins une raison déterminante, c’est-à-dire quelque chose qui puisse servir à rendre raison *a priori*, pourquoi cela est existant plutôt que non existant, et pourquoi cela est ainsi plutôt que de toute autre façon.” (*Théodicée*, part 1, § 44, p. 272; emphases in the original.) Note that for Leibniz only an *a priori* sufficient reason is a sufficient reason at all.

for Leibniz the Principle of Sufficient *Good* Reason is nothing else than the fully explicit formulation of the Principle of Sufficient Reason.<sup>16</sup>

It is just about indubitable that there are true propositions that are not true in every possible world. However, contrary to what Leibniz believed, it does not follow already that there is *genuine* contingency and room for *genuine* freedom, creaturely or divine; because *all* those propositions – *all* propositions true but not true in every possible world – might not only be *morally necessary* (and, for Leibniz, they all *are* morally necessary, as is obvious from the conclusion of the Leibnizian Master Argument – a corollary of which conclusion, given the Leibnizian definition of moral necessity, is the Principle of Sufficient *Good* Reason); *all* those propositions might also be *absolutely necessary*: all might be *true in virtue of essence*, and hence be metaphysically necessary in a different sense than is provided by the concept of truth in every possible world.<sup>17</sup> The metaphysical determinism objection to the Leibnizian Master Argument presents a metaphysical scenario – a scenario not arbitrarily concocted but coming from the strongest tradition of Christian theology itself – of *how* such a, so to speak, *real* and not just moral determinism may come about. Given his fundamental mindset of striving for the maximal rational reduction of contingency, *that scenario* is utterly natural for Leibniz; it provides a perfect rationalistic justification for the Principle of Sufficient – for Leibniz: of Sufficient *Good* – Reason. That every true proposition, and therefore also every proposition which is true but not true in every possible world, is *true in virtue of essence*, namely, true in virtue of *God-essential* absolute perfection (including moral perfection), is from the Leibnizian rationalistic point of view – with its aversion to all rationally irreducible contingency – a better justification for the Principle of Sufficient Reason than is provided by the original conclusion of the original Leibnizian Master Argument with its original

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<sup>16</sup> The Principle of Sufficient Reason is a trivial logical consequence of the Principle of Sufficient *Good* Reason. Suppose now that both principles are true (as they were for Leibniz) but still logically distinct. This can only be if for some true but not metaphysically necessary proposition there is a sufficient *good* reason and also a sufficient reason which is *not good* – which would be a curious case of overdetermination by reasons and can well be excluded. Therefore, supposing that both principles are true, any sufficient reason provided for a true but not metaphysically necessary proposition *p* in accordance with the Principle of Sufficient Reason will be a *good* sufficient reason for *p* – just like any sufficient reason provided for *p* in accordance with the Principle of Sufficient *Good* Reason.

<sup>17</sup> For Leibniz, however, metaphysical necessity, absolute necessity, and the truth of *p* in all possible worlds – in other words, the implication of contradiction by “the contrary” [says Leibniz] of *p* (concerning this equivalence, see  $(\alpha)$  in the *Appendix*) – amount to just the same: “[L]a vérité [absolument] nécessaire est celle dont le contraire est impossible ou implique contradiction. [...] [L]a conséquence est nécessaire [...]; c’est ce qu’on appelle une nécessité hypothétique. Mais ce n’est pas de cette nécessité dont il s’agit.” (*Théodicée*, part 1, § 37, p. 262; emphases in the original.) “J’entends ici une nécessité absolue et métaphysique” (*Théodicée*, part 2, § 132, p. 424; emphases in the original).

premises, which conclusion merely states that every true proposition – and therefore also every proposition which is true but not true in every possible world – is *morally necessary*.

Leibniz is, therefore, in grave danger of being nearer to Spinozism than he himself would have thought acceptable. The foundations of Leibniz (rationalism, Christianity, and absolutely-perfect-being theism<sup>18</sup>) are different from those of Spinoza (which, broadly speaking, are rationalism and pantheism), but a tenet of Spinozism does certainly seem to be also a consequence of Leibnizianism, though only *in effect* and contrary to the conscious intentions of Leibniz. It is this: *Every truth is absolutely necessary*.

#### *Appendix: Further considerations on the modal concepts employed*

##### *(α) Two equivalent ways of defining Leibnizian metaphysical necessity*

Leibnizian metaphysical necessity – metaphysical necessity<sub>1</sub> – is here taken to be truth in every possible world. Leibniz himself prefers to characterize metaphysical necessity in the following way: (proposition) non-p entails a contradiction. This characterization can be seen to be equivalent to “p is true in every possible world” if (i) “q entails q” means as much as “q’ is true in every possible world in which q is true”, and if (ii) every possible world is such that, of any proposition p, either p itself or its negation is true in it, and if (iii) every contradiction is in every possible world not true. Here is the proof of equivalence, on the basis of the – perfectly plausible – assumptions (i), (ii), and (iii):

*Assume:* non-p entails a contradiction; hence by (i) and (iii): non-p is in every possible world not true; hence by (ii): p is true in every possible world.

*Assume conversely:* p is true in every possible world; hence by (ii): non-p is in every possible world not true, and therefore trivially: q&non-q is true in every possible world in which non-p is true; hence by (i): non-p entails q&non-q, and therefore: non-p entails a contradiction.

##### *(β) Absolute necessity and Leibnizian metaphysical necessity*

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<sup>18</sup> Judaism and Islam serve just as well as Christianity for arriving at Leibnizian positions – *provided* the philosophical theology accompanying these other monotheistic faiths is *absolutely-perfect-being theism* (which has its origin in Neoplatonism; Neoplatonism strongly influenced Judaism, Christianity, and Islam).

Absolute necessity – metaphysical necessity<sub>2</sub> – can be characterized in the following way: (proposition) *p* is true in virtue of essence. The concept of absolute necessity was certainly not foreign to Leibniz, but he did not distinguish it from necessity qua truth in every possible world: see footnote 17. As is obvious from the main body of the paper, I, in contrast to Leibniz, *do* distinguish absolute necessity – namely, qua *truth in virtue of essence* – from necessity qua *truth in every possible world*. *Truth in virtue of essence* has more right to be called “absolute necessity” than *truth in all possible worlds*, for the following reason: the former kind of truth is not only unconditional, “non-hypothetical” like the latter (cf. footnote 17), but *unlike* the latter it is also non-relative – in particular, not relative to the set of all possible worlds. What is important here is, of course, not a matter of terminology (of calling this or that “absolute necessity”); what is important here is that truth in virtue of essence, metaphysical necessity<sub>2</sub>, is significantly different from truth in every possible world, metaphysical necessity<sub>1</sub>, and that this difference demands that the former, not the latter, be called “absolute necessity”. (If the two concepts were not significantly different it would not really matter which one is called “absolute necessity”.)

That Leibniz did not distinguish metaphysical necessity<sub>1</sub> and metaphysical necessity<sub>2</sub> can be rather strikingly seen from his criticism of Spinoza’s position on the extension of metaphysical necessity:

“Aussi Spinoza cherchait-il une nécessité métaphysique dans les événements, il ne croyait pas que Dieu fût déterminé par sa bonté et par sa perfection (que cet auteur traitait de chimères par rapport à l’univers), mais par la nécessité de sa nature: comme le demi-cercle est obligé de ne comprendre que des angles droits, sans en avoir la connaissance, ni la volonté. Car Euclide a montré que tous les angles compris par deux lignes droites, tirées des extrémités du diamètre vers un point du cercle, sont nécessairement droits, et que le contraire implique contradiction.” (*Théodicée*, part 2, § 174, p. 512.)

Here Leibniz describes the same geometrical proposition – taken to be an arbitrary example of metaphysically necessity – *as true in virtue of essence* (“par la nécessité de sa nature [*here*: la nature du demi-cercle]”) and *as true because the contrary implies contradiction* (“le contraire implique contradiction”), in other words (see (α)): as true in every possible world. Clearly, the geometrical proposition considered is for Leibniz, in being metaphysically necessary, both metaphysically necessary<sub>2</sub> and metaphysically necessary<sub>1</sub> (of course, without employing this terminology). And it is true that *that* proposition is metaphysically necessary in both these ways; but one cannot conclude a general equivalence, let alone an identity, of

the two concepts of metaphysical necessity from *this* particular equivalence. Leibniz just assumes their identity from the start.

The two concepts of necessity – metaphysical necessity<sub>1</sub> and metaphysical necessity<sub>2</sub> – must be distinguished. They differ significantly, since the proposition expressed by “@ = w<sub>0</sub>” may be metaphysically necessary<sub>2</sub> and yet not be metaphysically necessary<sub>1</sub> – as seen in this paper, in which a metaphysical scenario was presented according to which the proposition expressed by “@ = w<sub>0</sub>” is true in virtue of essence and yet not true in every possible world.

May it, conversely, also be the case that a proposition is metaphysically necessary<sub>1</sub> and yet not metaphysically necessary<sub>2</sub>? Indeed, it may. To show this, I make use of an option that language leaves open to us: I take the singular term “@” (“the actual world”) not as referentially flexible but as referentially rigid; that is, I let “@” refer under all (linguistic) circumstances to the entity it *actually* refers to. In other words, consider “rig@” instead of “@”.<sup>19</sup> Now, the proposition expressed by “rig@ = w<sub>0</sub>” is just as true as the proposition expressed by “@ = w<sub>0</sub>”; but, in contrast to the latter proposition, the former is also true *in every possible world*. It is, therefore, necessary<sub>1</sub> that rig@ = w<sub>0</sub>. However, leaving aside the above-mentioned metaphysical scenario, which is endorsed by theological tradition but *not believable* for most of us today,<sup>20</sup> it does seem that the proposition expressed by “rig@ = w<sub>0</sub>” is not true in virtue of essence and that, therefore, it is not necessary<sub>2</sub> that rig@ = w<sub>0</sub>.

Would it have affected the Leibnizian philosophical position if Leibniz had distinguished not only moral necessity from metaphysical necessity<sub>1/2</sub>, but also metaphysical necessity<sub>2</sub> from metaphysical necessity<sub>1</sub>?<sup>21</sup> – Making a distinction between metaphysical necessity<sub>2</sub> and metaphysical necessity<sub>1</sub> has no logical or formal consequences for the Leibnizian Master Argument; making that distinction is, however, somewhat damaging to a philosophico-theological position that was dear to Leibniz in connection to that argument and which he also wanted to bring home to his readers (*besides* the conclusion of that argument): the tenet of divine freedom of choice in creation (which freedom cannot be had without its being *meta-*

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<sup>19</sup> Regarding rigidity of reference, “rig@” behaves in modal contexts just like the personal pronoun “I”.

<sup>20</sup> The turning point in this regard is often said to be the extremely destructive Great Lisbon Earthquake, on the day of the Feast of All Saints (November 1), 1755 – roughly 39 years after the death of Leibniz (on November 14, 1716).

<sup>21</sup> Leibniz accused Pierre Bayle of confusing [confondre] “ce qui est nécessaire par une nécessité morale, c’est-à-dire par le principe de la sagesse et la bonté” with [avec] “ce qui l’est par une nécessité métaphysique et brute, qui a lieu lorsque le contraire implique contradiction” (*Théodicée*, part 2, § 174, p. 512). But Leibniz himself confused, as seen, two forms of metaphysical necessity: necessity qua truth in every possible world and necessity qua truth in virtue of essence – of which two forms especially the second does not appear “brute” at all if asserted of such actions of God as are inevitable consequences of His *essential* wisdom and goodness.

*physically contingent* that  $w_0$  is the actual world – even if it is morally necessary that  $w_0$  is the actual world). More on this matter can be found in sections VII and VIII of this paper and below, in ( $\delta$ ).

Consider – now in connection to direct quotations – the difficult situation Leibniz is in. As an adherent of absolutely-perfect-being theism, he ought to hold that God is good and perfect in virtue of God’s essence; but Leibniz doesn’t do what – given his theological position – he rationally ought to do: Judging from the above quotation (here in ( $\beta$ )), he is ready to assert that it is true of the semicircle *in virtue of its essence* – hence, for Leibniz, metaphysically necessary<sub>1/2</sub> – that any two lines drawn from the same point on the semicircle to the endpoints of its diameter enclose a right angle, but not ready to assert that God is good and perfect *in virtue of God’s essence*: that God is metaphysically necessarily<sub>1/2</sub> good and perfect; for if Leibniz were ready to assert that God is good and perfect *in virtue of God’s essence*, it would follow that God, in being determined in creation by His goodness and perfection (see above: “Dieu fût déterminé par sa bonté et par sa perfection”), is *not* merely determined by moral necessity but by *metaphysical necessity*<sub>1/2</sub>. And *this* Leibniz declares to be *absurd*:

“[A]utant que la nécessité métaphysique est absurde par rapport aux actions de Dieu *ad extra*, autant la nécessité morale est digne de lui.” (*Théodicée*, part 2, § 175, p. 512; emphasis in the original.)

However, it can only be declared to be absurd if one blindly follows Leibniz in his (local) blindness and, like him, does not distinguish truth in virtue of essence (metaphysical necessity<sub>2</sub>) from truth in every possible world (metaphysical necessity<sub>1</sub>); for only then one can – falsely but pseudo-rationally – conclude from the fact that “@ =  $w_0$ ” is not true in every possible world (which is a *fact* indeed) that “@ =  $w_0$ ” is not a metaphysically necessary truth *in any sense*, and that, therefore, the creation (the making actual) of  $w_0$  by God (and *any* action of God *ad extra*) is not metaphysically necessary *in any sense*: that it is *simpliciter* metaphysically contingent.

( $\gamma$ ) *The World-Argument modified: no nonrigid designators*

Might “rig@” instead of “@” be used in the World-Argument (see section V) making that argument a *perfect* (that is, cogent) argument for universal necessity? Let us see.

The premises of the World-Argument were the following (see section V):

(1)  $\forall p(p \supset T(p, @))$ ; (2) @ =  $w_0$ ; (3)  $\forall p(T(p, w_0) \supset \Box T(p, w_0))$ ; (4)  $\forall p\Box(T(p, @) \supset p)$ .

With “rig@” instead of “@”, these premises become:

(1\*)  $\forall p(p \supset T(p, \text{rig}@))$ ; (2\*)  $\text{rig}@ = w_0$ ; (3\*)  $\forall p(T(p, w_0) \supset \Box T(p, w_0))$ ; (4\*)  $\forall p\Box(T(p, \text{rig}@) \supset p)$ .

And we have:

From (1\*) and (2\*): (5\*)  $\forall p(p \supset T(p, w_0))$

From (5\*) and (3\*): (6\*)  $\forall p(p \supset \Box T(p, w_0))$

From (4\*): (7\*)  $\forall p(\Box T(p, \text{rig}@) \supset \Box p)$

From (7\*) and (2\*): (8\*)  $\forall p(\Box T(p, w_0) \supset \Box p)$

From (6\*) and (8\*): (9\*)  $\forall p(p \supset \Box p)$ .

In contrast to the step from (7) to (8) in the original World-Argument, the step from (7\*) to (8\*) in the modified World-Argument – the World-Argument\* – is unobjectionable because “rig@” is, in contrast to “@”, a (referentially) rigid designator, just as rigid as “w<sub>0</sub>”; premise (2\*), therefore, logically entails “ $\Box(\text{rig}@ = w_0)$ ”<sup>22</sup> – which is all that is needed for vindicating the step from (7\*) to (8\*).

The World-Argument\* – in contrast to the original World-Argument – is formally impeccable, but, in contrast to this latter argument, the World-Argument\* has a problematic premise: premise (4\*):  $\forall p\Box(T(p, \text{rig}@) \supset p)$ . For, the following seems [alethically, ontically] *possible*: Leibniz did not die in 1716 and yet it is true in rig@ that Leibniz died in 1716. If this is possible, then *its possibility* constitutes a counterinstance to (4\*). In fact, *given* the highly plausible extra premises (1\*\*) “It is [alethically, ontically] possible that Leibniz *did not die* in 1716” [in short:  $\Diamond\text{non-}p^*$ ] and (2\*\*) “That Leibniz *died* in 1716 is true in the *rigidly considered* actual world” [in short:  $T(p^*, \text{rig}@)$ ],<sup>23</sup> that counterinstance to premise (4\*) is deducible by elementary modal logic, *using* the premises (2\*) and (3\*) of the World-Argument\*:

(1**) $\Diamond\text{non-}p^*$	assumption
(2**) $T(p^*, \text{rig}@)$	assumption
(3**) $\forall p(T(p, \text{rig}@) \supset \Box T(p, \text{rig}@))$	from (3*) and (2*) <sup>24</sup>
(4**) $T(p^*, \text{rig}@) \supset \Box T(p^*, \text{rig}@)$	from (3**)
(5**) $\Box T(p^*, \text{rig}@)$	from (2**) and (4**)

<sup>22</sup> This logical entailment, however, can only be said *to obtain with certainty* if “ $\Box$ ” stands for the Leibnizian metaphysical necessity: for metaphysical necessity<sub>1</sub>. For, whereas “ $\text{rig}@ = w_0$ ” is certainly true *and* true with metaphysical necessity<sub>1</sub>, it seems not to be the case that “ $\text{rig}@ = w_0$ ” is true with metaphysical necessity<sub>2</sub> – as pointed out in (β).

<sup>23</sup> Leibniz died in 1716, that is:  $p^*$ ; hence by (1\*):  $T(p^*, \text{rig}@)$ . Or alternatively:  $p^*$ , hence by (1):  $T(p^*, @)$ , hence by substitution of identicals:  $T(p^*, \text{rig}@)$ , because  $\text{rig}@ = @$ .

<sup>24</sup> The move from (3\*) and (2\*) to (3\*\*) is just as unproblematic as the move from (7\*) and (2\*) to (8\*).

(6\*\*)  $\diamond(\text{non-}p^* \ \& \ T(p^*, \text{rig}@))$  from (1\*\*) and (5\*\*) [by modal logic]

(7\*\*)  $\diamond(T(p^*, \text{rig}@) \ \& \ \text{non-}p^*)$  from (6\*\*) [by modal logic]

Since  $\Box(T(p^*, \text{rig}@) \supset p^*)$  is an instance of (4\*) and  $\diamond(T(p^*, \text{rig}@) \ \& \ \text{non-}p^*)$  contradicts that instance (in other words: is logically equivalent to its negation), (7\*\*) is a counterinstance to (4\*).

( $\delta$ ) *The Leibnizian Master Argument modified: metaphysical necessity<sub>2</sub> instead of metaphysical necessity<sub>1</sub>*

In section VI of this paper it is claimed (by implication) that the premises (III) and (V) of the Leibnizian Master Argument *are unproblematic*; these premises were the following:

(III) If  $w_0$  is a best possible world and there is no other best possible world beside it, then this excellence – the excellence described in the antecedent of this conditional – is true of  $w_0$  with metaphysical necessity.

(V) It is metaphysically necessary that at most one possible world is actual.

Moreover, it is also claimed (by implication, in section VI of this paper) that the inference of moral necessity from metaphysical necessity, employed in the Leibnizian Master Argument, *is unproblematic*.

These two “no problem” claims are true *both* if metaphysical necessity is interpreted as metaphysical necessity<sub>1</sub> (truth in all possible worlds) *and* if it is interpreted as metaphysical necessity<sub>2</sub> (truth in virtue of essence). In fact, given the definition of moral necessity – that is: proposition  $p$  is morally necessary if, and only if,  $p$  is either metaphysically necessary, or  $p$  is not metaphysically necessary but true and there is a sufficient *good* reason for the truth of  $p$  – the second claim is *provably* true under *both* interpretations. And there is no reason to doubt that the first claim is also true under *both* interpretations.

For obtaining the concept of *Leibnizian* moral necessity, of course, metaphysical necessity must be interpreted as *Leibnizian* metaphysical necessity, that is, as metaphysical necessity<sub>1</sub>. But because the above-mentioned two claims hold true under both envisaged interpretations of metaphysical necessity the Leibnizian Master Argument also functions – functions *formally* – if metaphysical necessity is interpreted in it by metaphysical necessity<sub>2</sub>. And it also functions if metaphysical necessity is interpreted in it by the disjunction, or even the conjunction, of metaphysical necessity<sub>1</sub> and necessity<sub>2</sub> (that is, if “ $p$  is metaphysically necessary” is interpreted *not* as “ $p$  is metaphysically necessary<sub>1</sub>” and *not* as “ $p$  is metaphysically necessary<sub>2</sub>”, but as “ $p$  is metaphysically necessary<sub>1</sub> *or* metaphysically necessary<sub>2</sub>” or as “ $p$  is meta-



physically necessary<sub>1</sub> and metaphysically necessary<sub>2</sub>”). However, what might be called the main intended *side-effect* of the original Argument, which side-effect was very important to Leibniz, namely, to convince his readers that “@ = w<sub>0</sub>” is a *morally necessary but not metaphysically necessary truth* (cf. footnote 7), is “side-effected” by the Argument – if one accepts its premises – *only if* metaphysical necessity is taken to be, or at least to entail, metaphysical necessity<sub>1</sub>: truth in all possible world. For it is certain that it is not true *in every possible world* that @ = w<sub>0</sub>; it is *not* certain that it is not true *in virtue of essence* (in particular, God’s essence) that @ = w<sub>0</sub>; in other words, it is certain that it is not metaphysically necessary<sub>1</sub> that @ = w<sub>0</sub>; it is *not* certain that it is not metaphysically necessary<sub>2</sub> that @ = w<sub>0</sub>.

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