

Three indications for the existence of God in causal metaphysics

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Abstract With the emergence of modern physics a conflict became apparent between the Principle of Sufficient Cause and the Principle of Physical Causal Closure. Though these principles are not logically incompatible, they could no longer be considered to be both true; one of them had to be false. The present paper makes use of this seldom noticed conflict to argue on the basis of considerations of comparative rationality for the truth of causal statements that have at least some degree of philosophico-theological relevance and can be taken to *indicate* (*not* prove) the existence of God. The paper's comparatively modest aim is to establish belief in the existence of God as a rational metaphysical option, *not* as a rational obligation. In its final section, enriched causal considerations lead to an *indication* (*not* proof) of God as that which guarantees the unified continuance of the physical world.

Keywords Rational indication · Principle of sufficient cause · Principle of causal closure · Physical determinism · Physics

It is *indications* rather than *conclusive arguments* or *proofs* for the existence of God that will be presented here. They are philosophical arguments nonetheless. The reason why I choose to call them “indications” is that they do not conclude with “God exists” but with some other statement which, if true (and *that it is true* will have been argued for by the usual means: deductive, inductive, or abductive), can be taken to *indicate*—to give some rational support for assuming—the existence of God. An *indication*, obviously, does not demand assent; it does not even purport to be a conclusive argu-

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ment but endeavors to point out a rational option for those who are willing to adopt it, and, if successful, it establishes the *rationality* of that option.

It should be noted that for establishing the rationality of a philosophical option, one is not required to demonstrate the non-rationality of not adopting it, or the non-rationality of adopting its negative. In other words, in this context of reasoned discourse, I take rationality to be a permitting, not an obligating normative concept: a true judgment of the form “X is rational” (for example, “To believe in God is rational”), taken by itself, rationally permits one to do X (for example, to believe in God), it does not rationally obligate one to do X. And it is just a matter of the logic of permission that when one is rationally permitted to do X, it is not logically excluded—on the contrary: it is often the case—that one is also rationally permitted *not* to do X.

It seems to me a profitable perspective on an important part of the history of philosophical theology if one regarded Thomas Aquinas’ Five Ways¹ as *indications* (in the technical sense I just have described) for the existence of God rather than as (*purported*) conclusive arguments or proofs. They certainly invite to be regarded as *indications*—whatever their author thought to be their dialectical status. The tell-tale sign is the famous refrain that recurs slightly varied at the end of each one of the Five Ways: “et hoc dicimus Deum.”² By saying this, Aquinas is appealing to a superimposed theological interpretation of the, in itself, *non-theological* conclusion reached (that there is an unmoved mover, that there is a first cause, etc.)—which interpretation he just assumes to be shared by *everyone* (within his philosophical horizon). The interpretation is not part of the argument; rather, it determines what the conclusion of the argument should be taken to *indicate* in the direction of philosophical theology.

But these are remarks strictly on the side. The aim of this paper is not historical, and the arguments for the existence of God presented here are, I believe, novel.

A first indication for the existence of God in causal metaphysics

The causal indication for the existence of God which I am now going to present is for a fairly long stretch without mention of God. But the theological relevance of the following philosophical discourse will soon become apparent. (Bear with me.)

Every era has its favorite principles of causation. For a long time philosophers (Aristotle and Aquinas among them) believed that every causal chain, if retraced from effects to causes, will end after a finite number of steps. Philosophers believed this till the end of the Middle Ages. For a much longer time (roughly, until the first quarter of the twentieth century) philosophers (among them, famously, Leibniz and Kant) believed in the *Principle of Sufficient Cause*, that is, in the axiom that *every event is caused by something*.³

¹ *S. Th.* I, 2, 3.

² This is the coda of the Fourth and Fifth Way. The First Way ends with “et hoc omnes intelligunt Deum,” the Second Way with “quam omnes Deum nominant,” the Third Way with “quod omnes dicunt Deum.”

³ Two remarks: (1) By the word “event,” I shall always mean *actual* (or *real*) *event*, not just *possible event*. An event, moreover, is a *filled segment of time*; as such, it may be longer or shorter, and more or less filled with contents: coarse-grained momentary states of affairs. For a theory of events along these lines, see [Meixner \(2004\)](#). (2) The name of the principle this note refers to sufficiently indicates the concept of *cause*

But if philosophers have lost faith in two principles of causation, this does certainly not mean that they have lost faith in all. What, then, is the favorite principle of causation of our own time?—It is called “the Principle of the Causal Closure of the Physical World,” more briefly: “the Principle of Physical Causal Closure,” and there are at least two versions of it. The strong version of the Principle of Physical Causal Closure says that *everything that causes a physical event is itself physical*. The weak version, on the other hand, says that *every physical event that is caused by something at all is also caused by something physical*. The Strong Principle of Physical Causal Closure logically entails the Weak Principle of Physical Causal Closure (but not vice versa).

Both the Strong Principle and the Weak Principle of Physical Causal Closure are nowadays considered true by many philosophers (merely take a look at the current philosophy of mind). In fact, the two principles, though logically different, are often not distinguished in theoretical practice, since it is widely believed that *causal overdetermination of physical events* is out of the question. Obviously, if a physical event can *at most* be caused⁴ by *one* thing, then the Weak and the Strong Principle of Physical Causal Closure turn out to be equivalent. For the sake of simplicity, I will restrict my attention in what follows to the Weak Principle, and treat it as if it were *the Principle of Physical Causal Closure simpliciter*; no drawbacks will arise from this.

But what was it that brought about the downfall (in the minds of the philosophers) of the time-honored Principle of Sufficient Cause? It turns out that the Principle of Physical Causal Closure, though it is logically compatible with the Principle of Sufficient Cause, is not entirely innocent in this. The two principles *can compete*. They did so in fact, and the Principle of Physical Causal Closure *won*. First there came the Principle of Sufficient Cause (with the rise of philosophy). Then, much later, there came the Principle of Physical Causal Closure (with the rise of modern physics; it already perfectly fits the philosophical mindset of many eighteenth- and nineteenth-century physicists, for example, that of Pierre Simon de Laplace). For a while the two principles coexisted peacefully side-by-side—until physicists despaired of finding causal explanations for the decays of individual radium atoms (say). It began to seem undeniable that *some physical events are not caused by anything physical*—and today most physicists accept this. But the following three statements form an inconsistent triad:

- (I) Every event is caused by something.
- (II) Every physical event that is caused by something at all is also caused by something physical.
- (III) Some physical event is not caused by anything physical.

The triad is inconsistent because the *negation of* (III) is an obvious logical consequence of the conjunction of (I) and (II). This would be an indifferent logical situation if it weren't for the fact that (I) is the *Principle of Sufficient Cause*, (II) the *Principle of Physical Causal Closure*, and (III) the apparently undeniable result that physics

Footnote 3 continued

that is used throughout this paper: *sufficient cause*. More on the concept of causation employed can be found in Sect. “A second indication for the existence of God in causal metaphysics.”

⁴ That is: *sufficiently* caused.

seems to be confronted with. At least one of the three statements has to be given up, but which one(s)?

De facto it was (I)—the Principle of Sufficient Cause—that was given up (by most philosophers): one began to believe that some event—for example, the decay of a certain radium atom—is just not caused by anything at all, that it is an event of *pure* (ontological) *chance*.⁵ But although this was the *factual* reaction to the above inconsistent triad (I need not here speculate on its motives), one may well question whether it was the most *rational* reaction.

Alternatively, one might for example deny (III), and retain (I) and (II) (of which the negation of (III), which is affirmed by denying (III), is a logical consequence). But *de facto* only very few philosophically minded people—albeit among them distinguished physicists, like Einstein and Bohm—wished to hold on to nineteenth-century physical determinism. And for once the *factum* of the history of ideas seems to accurately reflect the situation as it presents itself in the light of rationality: the denial of (III) is very difficult to defend *rationally*. In what follows, I will treat (III) as rationally undeniable.

This leaves us with, *prima facie*, three rationally acceptable (possible) reactions to the above inconsistent triad:

- (i) Retain (III) and (II), and discard (I).
- (ii) Retain (III) and (I), and discard (II).
- (iii) Retain (III), and discard both (I) and (II).

Reaction (i) is the one normally adopted. But what good (rational) reason is there to prefer (i) to (ii) and to (iii)? If one considers (I)—the Principle of Sufficient Cause—and (II)—the Principle of Physical Causal Closure—and compares them to each other, is there a good reason to prefer (II) to (I)? If there were, this would mean that reaction (i) is, from the point of view of rationality, preferable to reaction (ii).⁶ But it seems that there is no such reason.

The rational motivation for belief in (I) is, quite obviously, our rational interest in obtaining causal explanations. But what is the rational motivation for belief in (II)? Is (II), perhaps, simply a well-confirmed empirical hypothesis? This seems unlikely. The statement is much too general for that. One might as well say that (I) is a well-confirmed empirical hypothesis. But, indeed, why not say that? It is very true that (I) has never been treated that way in the history of philosophy; it has always been treated as an *a priori* principle. But perhaps history should not be our guide here; if (II) is supposed to be a well-confirmed empirical hypothesis, then it's only fair to regard (I) as a well-confirmed empirical hypothesis, too.

It may seem that one cannot do this: because (I), *in contrast to* (II), has been empirically disconfirmed. But this is an illusion. The true situation is this: We are confronted with many physical events E_1, \dots, E_N (N being a huge natural number)

⁵ That an event is an *event of pure chance* means: there is an element of pure chance in its coming about; there is no sufficient cause for it (though there may well be causal factors that gave the event a certain objective probability of coming about).

⁶ However, reaction (iii) might still be preferable both to reaction (ii) *and* reaction (i). This possibility is addressed later in the paper.

to each of which we are unable to assign any physical (sufficient) cause: there simply is no empirical evidence for the existence of such a cause. *This*, as a matter of fact, is all the *potentially* negative evidence we have with regard to (I) and (II). But certainly neither (I) nor (II) are *rationally* falsified by this evidence, not even if one accepts the conclusion to which the evidence points (which conclusion, in fact, most people have accepted, and rationally so), namely, that none of the events E_1, \dots, E_N is caused by anything physical. The conjunction of (I) and (II)—(I) & (II)—*is* falsified by this. But additional empirical evidence is necessary for justifying a decision regarding the falsification of (I) or (II). For it may be that each event in the series E_1, \dots, E_N is caused by nothing at all—then (II) has (so far) escaped falsification, but (I) is falsified. And it may be that each event in the series E_1, \dots, E_N is caused by something non-physical—then (I) has (so far) escaped falsification, but (II) is falsified. *And* it may be that some events in the series E_1, \dots, E_N are caused by nothing at all, whereas some other events in that same series are caused by something non-physical—then neither (I) nor (II) have escaped falsification. There is, to date, no empirical evidence that would allow us to rationally decide which of the three possibilities just pointed out is realized, and there is reason to doubt that there ever will be any such evidence (on this matter, see later in this paper). Thus, regarded from the point of view of the *rationality of empirical inquiry*, (I) and (II) are, so far at least, on a par (no matter how their standing has turned out to be in *historical fact*). And hence neither (I) nor (II) can be said to be favored by physical science. The contrary impression—namely, that physical science favors (II) over (I)—is due to an inadvertent addition of *physicalistic metaphysics* to physical science. Note that physics in itself is entirely silent on the question whether there are or are not non-physical non-abstract entities; it is therefore neutral with regard to (II), just as it is neutral with regard to (I).

And if one regarded (I) and (II) as a priori principles after all? It would be implausible to regard them as analytic—broadly logical—principles; they just do not seem amenable to this view. But not all a priori principles need be analytic principles. Kant thought that there are non-analytic—*synthetic*—a priori principles in a rather demanding sense: irrefutable principles that are constitutive of human experience. I do not think that (I) and (II) are a priori principles in this sense. But (I) and (II), though certainly not analytic and certainly not irrefutably constitutive of human experience, might each be regarded as being *relatively a priori* in the sense that they are accepted ahead of empirical research as rational guiding principles for it, to the factual results of which research they have, moreover, a *relative*—but only a relative—imperviousness (that is, they are *not easily* given up if empirical research fails to deliver what they require). As a priori principles in this sense (I am tempted to appropriate a Kantian term for them: *regulative principles*), (I) and (II) would each have to have some substantial rational motivation.

As a matter of fact, I have already indicated above what rationally motivates belief in (I) *as an a priori principle* (in the above-indicated, *modest* sense): our rational interest in obtaining causal explanations. And I repeat, with appropriate modification, the question I already posed above: What is the rational motivation for belief in (II) *as an a priori principle*?

Suppose one adopted reaction (ii) to the above inconsistent triad, retaining (III) and (I), and discarding (II). The logical consequence of this move would be that one

would have to accept the following (which is logically entailed by the conjunction of (I) and (III)):

(C) Some physical event is caused by something that is not physical.⁷

Now, this is something many philosophers immediately balk at, *a priori*, so to speak. But why? The answer seems to be that they have opted, at a very fundamental theoretical level, for an ontology (and the fitting theory of causation) in which non-physical causes have no place, in which, indeed, *all* non-physical non-abstract *entities* have no place; in short, they have opted for a certain fundamental ontological position which is known as *physicalism*. And *favoring physicalism* seems to be the motivation for belief in (II) as an *a priori* principle. But is it *rational* motivation? In fact, this question need not be answered at this point (or in this paper); the question that needs to be answered is the following:

Is the motivation for (II) *as an a priori principle* more rational than the motivation for (I) *as an a priori principle*, making (II) rationally preferable to (I) and hence reaction (i) rationally preferable to reaction (ii)?

And this latter question, I submit, has to be answered negatively. This does not necessarily mean that (I), as an *a priori* principle, is *more* rational than (II), as an *a priori* principle. A negative answer to the above question would also be called for if (I) and (II) were rationally *on a par* as *a priori* principles (just as they are—we found—rationally on a par as empirical hypotheses). It seems to me, however, that, regarding rationality, (I) does have a slight advantage over (II). The reason for this is that (I) is *ontologically neutral*, while (II) is not: (II) is friendly to the widespread ontological tendency in favor of the physical (whereas (I) is neither friendly nor unfriendly to it). This is brought out if one confronts (II) with a statement that is structurally identical to it:

(II*) Every non-physical event that is caused by something at all is also caused by something non-physical.

Why is it that (II*) is not regarded, to any considerable extent, as an *a priori* principle that is just as rational and important as (II)? The answer seems to be: (II*), in contrast to (II), has nothing to offer that serves *the tendency in favor of the physical*. And there just is the—not entirely remote—possibility that this tendency is more a product of metaphysical faith, which needs no reasons, than of rationality.⁸ In contrast to (II), (I) is not tainted by any such possibility of at least partly non-rational motivation when being accepted as a philosophical tenet. Its appeal is *purely rational*, and intrinsically independent of any favored *Weltanschauung* whatsoever.

But what, in the end, does all of this leave us with? We have as a certainty:

⁷ Note that this causal statement is also entailed by the negation of (II) and hence would be true if (II) *and also* (I) turned out to be false. The statement is designated by a letter, not a numeral, since no theological use of it will be made. (It seems to me that no significant theological use of it *can* be made.)

⁸ Adherents of physicalism usually regard their metaphysical stance as founded on, or even required by, science. This is debatable. It certainly *seems* that there is a leap of faith involved in going from physics to physicalism—and leaps of faith are always *blind*: non-rational.

(III) Some physical event is not caused by anything physical.

And in fact physics even allows us to have as a certainty something that asserts *more* than is asserted by (III):

(IV) There are many physical events removed from the sphere of human influence that are not caused by anything physical.

If in reaction to (III) we stuck with (I) (and therefore discarded (II)), (IV) would allow us to conclude

(V) There are many physical events removed from the human sphere of influence that are each caused by something non-physical.

If in reaction to (III) we stuck with (II) (and therefore discarded (I)), (IV) would allow us to conclude

(V*) There are many physical events removed from the human sphere of influence that are each caused by nothing at all.

If we had to choose between the principles (I) and (II), then the above considerations show that (I), not (II), would be the principle to choose.⁹ And choosing (I) would finally leave us with (V).

But so far, following reason, we also seem to have the option to *discard both principles* (reaction (iii), according to the above listing)—an option which so far does not seem to be of inferior rational quality in comparison with having to choose between (I) and (II). However, if we discarded both (I) and (II), then the rationale for doing so could only be that both principles are refuted by the evidence that is available to us. After all, neither one of the two principles *invites* agnosticism or denial; on the contrary, both of them are rather credible in themselves, and in fact both were simultaneously believed in, even cherished, for a long time, and not unreasonably so. If *both* are to be given up, evidence refuting both of them is required.

Consider, then, the most likely source of finding such evidence: the set of physical events that are not caused by anything physical. It follows from (IV) that this set has many members. In order to rationally discard (I) *and* (II), we need to find among these many members some that are caused by nothing at all—refuting (I)—and some that are caused by something—refuting (II). Well, what do we find? As a matter of fact, we do not *find* any of the things we are looking for in the set; what we *do* is *interpret* the events in the set: as not caused by anything at all, or, on the contrary, as caused by something (and hence by something non-physical). And our interpreting exceeds empirical evidence to such an extent¹⁰ that one is justified to speak here of a *metaphysical interpretation* of a causal situation, an interpretation, moreover, which is likely to be informed from the start either by (I) or by (II) (well, for most philosophers it happens to be (II)). In view of this, it is unlikely that *evidence* that would refute *both* (I)

⁹ To repeat: from the point of view of empirical rationality, (I) and (II) are on a par; from the point of view of a priori rationality, (I) has a slight advantage over (II).

¹⁰ Note that it is already somewhat audacious to call the fact that the events in the considered set are not caused by anything physical an *empirical fact*.

and (II) can ever be *found*, or for that matter *evidence* that would refute (I), *or* would refute (II). Discarding *both* (I) *and* (II) is, therefore, out of the question. But, then, in this situation where without hope of further empirical evidence a priori rationality must be our guide, it is (I)—the Principle of Sufficient Cause—not (II)—the Principle of Physical Causal Closure—which must be rationally favored.

It has already been pointed out above what is entailed by adopting (I) in addition to (III), or by adopting it in addition to (IV) (which is just as undeniable as (III)). I repeat the logically stronger of the two consequences pointed out (the weaker one is (C)):

- (V) There are many physical events removed from the human sphere of influence that are each caused by something that is non-physical.¹¹

If the intellectual situation today were similar to the intellectual situation in the lifetime of Aquinas, some philosopher, I suppose, would merely add to (V) “and this *something* is what everyone calls God” (being entirely oblivious to the illicit quantifier-shift this move implies: from “each one caused by something that is non-physical” to “something non-physical that causes each one”) and would call the argument preceding it “a demonstration of the existence of God” (*the Sixth Way*, so to speak). But no *proof* for the existence of God was intended, and, of course, no proof for the existence of God has been accomplished. What is it that has really been done here? On the basis of an assertion that was regarded as undeniable—namely, (IV) (and previously (III))—it was pointed out that the Principle of Sufficient Cause—that is, (I)—and the Principle of Physical Causal Closure—that is, (II)—are in logical conflict. At least one of the two must be given up. It was argued that it is more reasonable to give up the Principle of Physical Causal Closure and retain the Principle of Sufficient Cause than to follow either one of the two alternatives to this course of dialectical action. (*Note* that it has not been argued that it is *simpliciter unreasonable* to give up the Principle of Sufficient Cause and retain the Principle of Physical Causal Closure!) Now, (V) is a logical consequence of the conjunction of (I) and (IV). Therefore, if one accepts (I) and (IV)—which, it has been argued, is the (*comparatively*) most reasonable thing to do—then one must also accept (V). And, true to the line of argument that has seemed most reasonable (*comparatively*), (V) has finally been accepted.

But (V) neither mentions God nor God’s existence; its propositional content is not about God at all. (Again, I invite the comparison with Aquinas’ Five Ways, where we have this situation in each of the five cases.) But (V) can be taken *to point* to the existence of God (making the whole argument leading up to it an *indication* for the existence of God—in the technical sense of “indication” I introduced at the beginning of this paper). (V), it is true, is a *vague* indicator of God’s existence (but no more so than the concluded non-theological statement of Aquinas’ Second Way: his *overtly causal* “proof” for the existence of God,¹² in which the existence of an uncaused, i.e.,

¹¹ It is worth mentioning that (V) *could* be true (whereas (C) *would* be true) if in addition to (II) also (I) turned out to be false. But there seems to be no support for (V) on the basis of (IV) that is available to us independently of presupposing (I).

¹² The First Way, too, is causal, but not *overtly* causal, since it avoids making explicit use of the concept of *cause*.

first, cause is finally deduced). For (V) leaves it entirely open whether it is one or several non-physical entities that cause the physical events it speaks about (and how many of these physical events are caused by each of those non-physical causes, if there be several of them). It also leaves entirely open the nature of the cause(s): nothing whatever can be concluded from (V) about its or their attributes—*except*, of course, that non-physicalness and non-humanness can be found among those attributes. Even the category of cause—whether it be *substance* or *event*—remains open. Nevertheless, it is hardly deniable that (V), if it is true (and that it is true has been argued for), is a rather striking truth, the metaphysical—in particular, philosophico-theological—*horizon* of which cannot be disregarded (just as the philosophico-theological horizon of the existence of a non-human, substance-like uncaused cause could not be disregarded).

A second indication for the existence of God in causal metaphysics

It is all too easy to scoff at the argument in the previous section in the following way: “The proof for the existence of God on the basis of radioactive decay!” This taunt insinuates that in the *argument* which is its target (it’s never been said to be a *proof*!) something rather significant has been concluded from something utterly insignificant—a disproportion, it is suggested, that disqualifies the argument from being taken seriously at all. But physical events that are not caused by anything physical are far from being marginal, insignificant phenomena. Indeed, I will argue that *all physical events are not caused by anything physical*.

But before arguing for this assertion, it is instructive to see what consequences it has. First, it is for logical reasons recommendable to strengthen the assertion in the following unproblematic way (unproblematic because nothing dubitable is going to be added to the assertion):

(VI) There are many physical events removed from the sphere of human influence, and for every physical event it is true that it is not caused by anything physical.

Clearly, (III) and (IV) are logical consequences of (VI), whereas they are *not* logical consequences just of the second part of (VI): of what follows after the “and” (which is the original, unstrengthened assertion). Therefore, (VI) is just as logically incompatible with the conjunction of (I) and (II) as is (III) and (IV). If (VI) is combined with (I) (discarding (II)), then a logical consequences is this:

(VII) There are many physical events removed from the sphere of human influence, and every physical event is caused by something that is not physical.

If (VI) is combined with (II) (discarding (I)), then a logical consequence is this:

(VII*) There are many physical events removed from the sphere of human influence, and every physical event is caused by nothing at all.

The causal nihilism with regard to physical events that is asserted by (VII*) is so incredible in itself that already for *this* reason embracing the conjunction of (VI) and (II) does not seem to be a rational option. Moreover, the considerations in the previous section remain entirely valid under the assumption of (VI), and therefore, following

reason, (I)—the Principle of Sufficient Cause—is the principle to be asserted together with (VI). In consequence, (VII) is established.

Now, (VII), if true, is a better indicator of the existence of God than (V) (which is a logical consequence of (VII)): (VII) points less vaguely than (V) in the direction of God's existence (and less vaguely, it seems to me, than the conclusion of Aquinas' Second Way). The degree of theological ambiguity of (VII) is less than the degree of theological ambiguity of (V). But, of course, there still is a great amount of theological ambiguity even in (VII) it.

Although (VII), if true, is in virtue of its content a better *indicator* of God's existence than (V), it seems that the argument which establishes (VII) is, on the whole, a weaker *indication* for the existence of God than the argument that established (V) in the previous section. The reason for this is that premise (IV) seems much easier to defend than premise (VI). In fact, (IV) (just like (III)) needs no defense at all: it can be treated as a certainty. But (VI) appears to be a rather different matter. *How* could (VI) be defended?

In defending it, one can concentrate on what is moot, namely, the assertion in (VI) that *for every physical event it is true that it is not caused by anything physical*. The argument for this assertion is the following:

A physical event X is said to be caused by something physical if, and only if, there is a physical event prior to X that predetermines X to happen. But for every physical event there is *at any time* prior to its inception, besides a possible further course of physical reality in which it happens, also a possible further course of physical reality in which it *does not* happen. Therefore, even the entire course of physical reality prior to a physical event X does not predetermine it to happen; a fortiori there is no physical event prior to X that predetermines X to happen. Hence X is not caused by anything physical.

Some elements of this argument need comment:

First, its general concept of causation. It is a concept of *sufficient causation*. In sufficient causation the cause makes the effect happen, and does not merely contribute to its happening. Sufficient causation is suggested—I should say, *demand*—by the causal predicate “Y *causes* X,” which has been used in all the causal principles formulated in this paper.¹³

Second, its concept of (sufficient) physical causation. Causation by something physical—*physical causation*—is causation by a *physical event*. But might there not also be physical causation by a *physical* (or *material*) *substance*? Perhaps there is. However, it seems to me that the only clear way in which a physical substance can cause an event X is this: there is an X-causing physical event which *involves* the physical substance in a certain appropriate manner (which manner is not easy to explicate; it may be called an “essential manner”). Thus: if X is not caused by any physical

¹³ In contrast, the causal predicates “Y is a cause of X,” “Y is causal for X,” “Y is one of the causes of X” strongly suggest *conditio-sine-qua-non causation*, as explicated in the counterfactual analysis of David Lewis (1973/1986), for example, or, alternatively, *probabilistic causation*, along the lines of Suppes (1970), for example.

event, then X is not caused by any physical substance, either (and therefore: if X is not caused by any physical event, then X is not caused by anything physical).

Third, its concept of (sufficient, physical) event-causation. Sufficient event-causation consists in an event, the cause, *predetermining* or *ante-necessitating* an event subsequent to it: the effect. This seems to me the only clear way in which an event can *make* another event happen (can be a sufficient cause of it). Predetermining or *ante-necessitating* an event means that any possibility of its not happening in the future of the cause is being excluded by the cause; the cause shuts down, in other words, all the possible further courses of reality in which the effect does not happen. Note that it seems rather unclear how (in what adequate sense) an event Y could make an event X happen, how it could be a sufficient cause of X in its entirety, if X were, partly or wholly, *prior* or *simultaneous* to Y.

Having briefly commented on the conceptual decisions that underlie the above argument—decisions, it seems to me, that are at least as rational as other decisions that have also been made in these matters¹⁴—the *crucial assertion* in that argument now needs to be inspected. It is this assertion:

For every physical event there is *at any time* prior to its inception, besides a possible further course of physical reality in which it happens, also a possible further course of physical reality in which it *does not* happen.

Is this true to metaphysical fact? It was once (right into the twentieth century) believed that the laws of physics *guarantee* for any given physical event X that at some time prior to its inception the only remaining possible further courses of physical reality are further courses in which X happens. Speaking from a radical philosophical point of view, it is not at all clear how the laws of physics *can* accomplish such a feat. In order to accomplish it, they can hardly be just the statements in bold print that one is wont to find in textbooks on physics, and they can hardly be just what philosophers (for example, David Lewis or David Armstrong) have thought them to be. For accomplishing it, they must be *very powerful*—*causally powerful*—beings indeed. This seems absurd. But be that as it may, with the advent of quantum mechanics the situation has changed utterly. The laws of physics have undergone a transformation (so to speak). The transformation is this: the laws of physics, given the entire course of physical reality prior to a given point in time, do no longer positively exclude *any* possible further course of physical reality beginning with this point in time. It is true that the laws of physics specify a *tendency* for the future course of physical reality, in other words: assign (objective) probability weights to the various possible further courses of physical reality (or rather: to sets of such courses). But although these probability weights may come rather close to zero, they never *are* zero. Modern physics, therefore, strongly suggests that the above *crucial assertion* is true to metaphysical fact. This is as good a support as any that can be had in these matters. It therefore turns out that the case for (VI) is not as weak as it may have seemed initially—and what it is that the acceptance of (VI) leads us to has already been pointed out above.

¹⁴ I have defended the suggested theory of causation in Meixner (2001), taking detailed account of competing views, and more compendiously in Meixner (2004).

I have no doubt in my mind that many readers would prefer an analysis of causation according to which the pervasive physical indeterminism that has, by and large, been acknowledged by modern physics *does not* lead to the acceptance of (VI). I have not shown that readers who are thus disposed have no rational right to be so disposed. But I do not need to show this, given what is my aim in this paper. My aim is to present *indications* for the existence of God, *not* proofs or conclusive arguments, the cogency of which every rational person must acknowledge as soon as she takes cognizance of them. In view of this, I maintain that the conceptual framework and the entire machinery of the two arguments, in this and the previous section, for the existence of God are *rational* (in the permitting, not the obligating sense of the word), and that these arguments do their job: that they are indeed *indications*—nothing more than that—for the existence of God. In particular, there is nothing irrational, or even merely arbitrary, in regarding physical causation as sufficient necessitating event-causation. And there is nothing irrational, or even merely arbitrary, in accepting pervasive physical indeterminism on the basis of quantum mechanics while upholding the Principle of Sufficient Cause. There is, finally, nothing irrational, or even merely arbitrary, in *not* taking the non-existence of non-physical causation or of God as doctrinal items every rational person must subscribe to.

A third indication for the existence of God in causal metaphysics

The philosophico-theological significance of the second indication for the existence of God in causal metaphysics (and indirectly also the philosophico-theological significance of the first) can be considerably increased if one does not just stick to its mere skeleton,

(VI) and (I), therefore: (VII)—and this *suggests (points toward)* the existence of God, but puts some flesh on these bare bones, that is: if one further elaborates on the second indication, and in particular on the argument for the truth of (VI). But one can also take this argument—or rather: its central part—as a starting point for producing a third indication for the existence of God in causal metaphysics, an indication, it seems to me, whose philosophico-theological significance is considerable (in the perspective of the long tradition of rational, philosophical theology).

The *crucial assertion (crucial premise)* of the argument for the truth of (VI) in the previous section can also be put in the following way:

There is no point in time t where the totality of all the physical events that have happened prior to t predetermines—ante-necessitates—to any extent what will happen at t and in the future of t .

This, it has been argued, is true. Yet, starting with no point in time (that *differs* from the last point in time, *in case* there happens to be such a thing) is it ever the case that the actual course of physical reality simply *gives out*, or *branches into* (the actualizations of) all the possibilities open to it.¹⁵ No, in spite of physical indeterminacy,

¹⁵ The latter, of course, is asserted by the so-called Everett interpretation of quantum mechanics. This interpretation strikes me as metaphysically fantastical. But I am not maintaining that it is irrational; I am

the actual course of physical reality *continues in a perfectly unique way*, and in an orderly way to boot. What is the explanation of this? Within the last four centuries we have become rather accustomed to regarding the phenomenon in question as an automatic product of the workings of the laws of nature (which nowadays are usually identified with the laws of (ideal) physics). The laws of nature, however, can no longer be regarded as well-suited for doing the required kind of work. Indeed, as was already suggested above: regarded from a radical philosophical point of view, the laws of nature have *never ever* been in a position to guarantee *the unified continuance of the physical world*; according to this radical point of view, the laws of nature are just *the epitomic expression* of this unified continuance, not its *makers*. But from a rather different point of view, the point of view of empirical science, modern physics should strongly suggest the inability of the laws of nature to guarantee the unified continuance of the physical world even to anyone who is not inclined to lend an ear to radical philosophy.

What is it, then, that guarantees the unified continuance of the physical world?¹⁶ Perhaps nothing at all. Perhaps that unified continuance is just a big accident, and no explanation of it is possible. Or perhaps there are, after all, many *real and complete* physical worlds, all fitting side by side into the probabilistic framework that is set up by the quantum-physically transformed laws of physics,¹⁷ and no explanation of the unified continuance of the physical world is needed. Or perhaps the unified continuance of the physical world is guaranteed by (the unity of) God—*first*, in an overarching, once-and-for-all but *still to be completed way*: insofar as God is the originator and upholder of the rules of the game, the laws of nature (which therefore, and well befitting them, are nothing absolute), and *second*, in a local, step-by-step *completing way*: insofar as God is an active agent also in time, a player of the game together with countless created agents whom He allows (and enables) to do their own part (though their doings, it seems, are not always helpful for building a *good* world). Although this hypothesis for explaining the unified continuance of the physical world is far from being rationally forced upon us (*creatio continua* is the old name for it), it does not seem to be less rational than other hypotheses that may also be advanced in this matter—especially in view of the two indications for the existence of God already presented in this paper. Hence the unified continuance of the physical world—notably in the age of quantum physics—can be taken to *indicate* (*not* to demonstrate) the existence of God, and in fact the existence of God as a rather powerful and knowledgeable being. It is *another* question whether God is perfectly good (or *all-powerful*, or *all-knowing*).

Footnote 15 continued

just maintaining that one has at least as much a rational right *not* to believe in it as one has a rational right to believe in it.

¹⁶ In other words: Of *what* is the unified continuance of the physical world an *indicator*, by way of being rationally explained by *it*?

¹⁷ The laws of physics *determine* this probabilistic framework. This is the reason why it is often said, somewhat misleadingly, that the laws of physics are *deterministic* even from the quantum-physical perspective.

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