

Why the Argument from Causal Closure Against the Existence of Immaterial Things is Bad *

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Some philosophers, whom I call immaterialists, believe that there are besides material things also immaterial things, such as souls, ghosts, or a God. Others, whom I call materialists, believe that there are no such things but that there are only material things. Immaterialists can defend their view by providing evidence (e.g. by giving a teleological argument for the existence of God) or by reporting perceptual experiences of the things in question. Materialists can defend their view by criticising the arguments of the immaterialist one by one, by arguing that the immaterialist’s perceptual experiences are unreliable, and by giving arguments against the existence of the immaterial things in question, such as the ar-

gument from evil against the existence of God. However, some materialists want to take a short cut by using what I call *Sweeping Naturalistic Arguments* (SNAs). They try to defend materialism by putting forward metaphysical principles that support immaterialism because they exclude that a physical event may have a non-physical cause. In this article I shall criticise the SNA that claims that science has shown that the physical domain is causally closed. To pave the way I shall describe what it would be for a material event to have an immaterial cause.

What would it be for a material event to have an immaterial cause?

There are two ways in which a material event might have an immaterial cause: it might have an immaterial *event* cause or an immaterial *agent* cause.

If a material event, M, has an immaterial event cause, then the complete cause of the event at a certain time is either wholly or partially immaterial. (By saying that A caused B, or that A was a cause of B, I mean that A was the complete cause of B at a certain time or a part of it. An event usually has only one complete cause at a time but of course different complete causes at different times.) The material event, M, has an event, C, as complete cause. C takes place earlier than M, and there is a causal process of which M and C are stages. C might be a wholly immaterial event, that is, it consists in an immaterial thing, e.g. a human soul, being in a certain way (i.e. having certain properties) at a certain time. Or C might be partially immaterial and partially material, that is, there is a material event and an immaterial event, at the same time, whose conjunct is the complete cause of M at that time. In that case immaterial and material things co-operate in causing.

If a material event, M, has an immaterial *agent* cause, then M has no preceding cause, it has no event cause at all. It does not occur by chance

or by accident either. Rather, its occurrence is due to an agent. Its occurrence is an agent's choice. (I have spelled this out in more detail in Wachter 2003.) Some authors mean other things by an agent cause, but of the conceptions available only those along these lines claim that there is a way in which an event may come about besides event causation, and therefore only these require extra consideration here.

Causal Closure

Now let us address the argument from Causal Closure. Jaegwon Kim's way of stating the principle of Causal Closure (CC) is this: 'If you pick any physical event and trace out its causal ancestry or posterity, that will never take you outside the physical domain. That is, no causal chain will ever cross the boundary between the physical and the nonphysical.' (Kim 1998, p. 40) In other words, using 'physical' and 'material' synonymously, no material event, e.g. a brain event, has an immaterial cause. There is a weaker version of the principle which claims that *if* a material event has a cause, then that cause is wholly material. Further, one can formulate CC as a modal principle claiming that it is *impossible* that a material event has an immaterial cause. Let us call this the Modal Principle of Causal Closure. Unless indicated otherwise I shall mean by CC the non-modal principle that no material event has an immaterial cause. (For different versions of CC see (Lowe 2000, p. 27-31) and (Montero 2003). However, my criticism should apply to any version of the principle that supports materialism. For defences of physicalism with appeal to CC see (Papineau 1993, ch. 1) and (Melynck 2003).)

In either version is CC incompatible with immaterialism. (It is compatible with the existence of immaterial things that do not causally interact with material things, and in some versions it is also compatible with a material event having an immaterial cause besides its material cause (as defended by Lowe 2003), but here I want to consider only immaterialism

that assumes that there are material events that have an immaterial cause and no full material cause.) So any support for CC is support for materialism. One way to defend CC would be to criticise the immaterialist's arguments one by one. If there are no immaterial objects, then there is nothing immaterial that could cause material events and hence CC is true. But some materialists use CC for a Sweeping Naturalistic Argument. They want to defeat immaterialism quickly by defending CC without criticising the immaterialist's arguments one by one. They say, for example, that CC is a principle of rationality or that it is supported by the success of science and that therefore we should reject immaterialism. If there are good such reasons for assuming CC then the Sweeping Naturalistic Argument from Causal Closure is successful. But I shall now argue that there are no such reasons.

CC is usually defended with reference to science. This can be done in two ways. First, one may argue that CC is a principle of rationality or of science. Secondly, one may argue that CC is supported by the success of science.

Kim points out, that 'if you reject this principle [CC], you are ipso facto rejecting the in-principle completability of physics—that is, the possibility of a complete and comprehensive physical theory of all physical phenomena.' Therefore, 'no serious physicalist could accept such a prospect'. (Kim 1998, 40) However, regardless of whether you would like to be a 'serious physicalist', the question is just why one should assume CC. It is true that if CC is false, then (assuming that immaterial events are not governed by laws of nature) there are events in the universe for which there is no complete scientific explanation, i.e. no explanation in terms of the laws of physics. If God moved away the stone from Jesus' grave, then that movement of that stone has no complete scientific explanation. Do we have a reason to rule out this possibility? We need to look at the two arguments I just mentioned in more detail. The first argument claims that science or rationality presupposes CC, the second argument claims that CC is a result of science or is supported through the success of science. In

order to be able to tackle these arguments we need to discuss first briefly whether a material event's having an immaterial cause would constitute a 'violation' of the laws of nature.

Material events with immaterial causes and the laws of nature

One way in which science might support CC would be through discovering laws of nature that entail CC. So what do laws of nature say about CC and about potential counter-instances to CC? There are three answers available:

(1) Counter-instances to CC, i.e. cases where a material event has an immaterial cause, would be 'violations' of the laws in question and would show that some formula L, which was thought to be a law was not a law. Counter-instances to CC would falsify the laws. All evidence for the laws of nature is therefore evidence for CC. This would have been David Hume's answer, as we can see from his treatment of miracles (Hume 1748, 10,12).

(2) Counter-instances to CC would be 'violations' of the laws of nature, but if they are non-repeatable counter-instances they would not falsify any laws.

(3) Counter-instances to CC would not be 'violations' of the laws of nature because laws do not entail regularities of succession, but they say which forces there are in what kind of situation, and also in cases that are counter-instances to CC there are the forces that the laws of nature describe.

I have formed answer (2) in accordance with Richard Swinburne's treatment of miracles as violations of the laws of nature (Swinburne 1970). The reasoning behind it is this. Assume you have a lot of evidence for some formula L being a law of nature. L explains many experimental data, is simple, and fits with the other laws. But then you have evidence that some event C occurred that would be a counter-instance to L. If you

try to formulate a law that predicts C it becomes much more complicated or it yields many wrong predictions. In that case, Swinburne argues, L should still be taken to be a law and C should be regarded as a non-repeatable counter-instance to L. Giving up L would be against the evidence that supports L.

Answer (3) is the one I endorse (and shall defend in more detail elsewhere). It is widely assumed that laws entail regularities of the type 'events of type A are always (or so and so often) followed by events of type B', which we may call Humean regularities. Against this, I think J.S. Mill got it right already in 1872 when he wrote 'All laws of causation, in consequence of their liability to be counteracted, require to be stated in words affirmative of tendencies only, and not of actual results' (Mill 1872, 445). Consider, for example, the law of gravity $F=G m_1m_2/d^2$. This law does not say that bodies if situated in a certain way will move in a certain way. Rather it says that in a situation of a certain kind there is a force of a certain kind. It does entail a regularity; but not a Humean regularity but a regularity of the type 'In a situation of type S there is *always* a force of type T'. Concerning the actual movement of bodies the law of gravity says only that a body will accelerate in a certain way *if nothing else is acting on it*. Thus it says something about the movement of bodies only in some of the cases where it applies. In many cases the law applies and claims that there is a certain force but it does not make a claim about how the bodies will actually move. The class of cases in which the law makes a claim about what kind of event will be followed by what kind of event is a subclass of the cases where the law applies. Many object to the Humean regularity theory of laws now that laws are *more* than regularities, still accepting the Humean assumption that laws entail (Humean) regularities (e.g. Armstrong 1983, 85). I, however, hold that laws do not entail Humean regularities at all. They entail regularities about what happens in all cases where nothing else than the objects referred to is acting but not regularities about what happens in all cases where the law applies.

It may be objected that although single laws on their own do not entail regularities, all the laws together do. We can, for example, make predictions about the movement of a certain body taking into account not only gravitational forces but also electro-magnetic forces and others. But as for every prediction based on the law of gravity the phrase ‘if nothing else is acting on the things in question’ needs to be added, so this phrase has to be added to any prediction based on laws of nature. You may have good reasons for assuming that there are no further material things that will be acting on the things in question or for assuming that no God will act on the things in question, but the evidence that supports the laws of nature does not itself warrant this assumption. You need independent evidence for this, for example evidence that there are no souls that would act on the things in question, or that there is no God, or that God would not act on the things in question because it would be bad. Because laws do not say what things there are not, also the totality of all laws of nature do not entail Humean regularities. For that reason Mill was right when he said that all laws ‘require to be stated in words affirmative of tendencies only, and not of actual results’. I take forces to be a kind of tendency. For our purposes here it is enough to note that the laws of motion require to be stated in words affirmative of forces only, and not of actual movements. (I leave it to another time to extend this to laws that are not concerned with forces and hence with movement of bodies. A good discussion of laws of conservation of energy in this vein is (Larmer 1988, ch. 5).)

Imagine God moved the stone away from Jesus’ grave. Just like that, without using any material object in order to push it. Would this have been a violation of the laws of nature? The standard view says yes, assuming that the laws of motion entail regularities of which this movement would be an exception. But what do the laws of motion say about this case? They say that there are certain forces, e.g. a gravitational force acting on the stone. There is no reason to assume that God, in order to move the stone, abolished any of these forces. They were all there, God just overrode them. Therefore there was no violation of the laws of nature.

If (1) were correct then the evidence for the laws of nature we believe in would support CC. If answer (2) or answer (3) are correct, then answer (1) is false because counter-instances to CC would not falsify any laws. I conclude that answer (3) is correct. However, what I say in what follows could easily be adapted to the view that answer (2) is correct. Let us now consider the possible arguments for CC.

Is Causal Closure a principle of science?

Now consider the idea that CC is a principle of science or of rationality. Thus John Heil writes for example: ‘Modern science is premised on the assumption that the material world is a causally closed system.’ (Heil 1998, p. 23) The idea is that science assumes that every material event has a material cause and that science could not proceed without this assumption, perhaps comparable to how it could not proceed without using induction.

To this I reply first that science is only to a limited extent concerned with producing scientific explanations of single events. Perhaps history is concerned with what happened to the stone at Jesus’ grave and why it happened, and cosmology is looking for the true explanation of a certain supernova. But often science is concerned with more general questions, such as how a body accelerates if it falls down, how photosynthesis works, or how quantum theory is to be squared with the theory of general relativity. For such more general questions it is irrelevant whether some immaterial object once upon a time caused some material event. All you need is the assumption that in the relevant experiments no immaterial objects interfered. If there are ghosts messing around in your experiments, then that will impede your scientific work, just as it will impede with your work if you do not manage to protect your experiments from other things acting in it. But that God once moved a stone or that souls

cause some material events in human brains would not prevent us from discovering the laws governing stones and elementary particles.

What about the cases where science does look for explanations of particular events? Well, why should the fact that some events have immaterial causes and hence no law-based explanation prevent science from *looking for* law-based explanations? If there are counter-instances to CC, then science will not *find* true law-based explanations for these events because they have no such explanation, but nothing prevents science from looking for them. Furthermore, science may be able to find for some counter-instances to CC, for example for brain events that have immaterial causes (as claimed by Eccles 1994, ch. 6), that they have no complete material cause and thereby find evidence for the existence of certain immaterial objects. That would be an interesting discovery too.

Are there any other ways in which CC might be a principle of science? Is the assumption of CC necessary for the search for laws of nature? No, the existence of some counter-instances to CC would not impede the search for laws as long as we can conduct experiments with the things in question in which no such counter-instances occur. And even if there were so many counter-instances to CC of a certain kind that we could not discover a certain law, they would prevent us from finding this law, but they would not prevent us from looking for this law.

So I see no reason here for assuming that CC is a principle of science.

Is Causal Closure supported by the success of science?

Sometimes it is suggested that CC is supported by the success of science. Science has found material causes for many material events. And science can investigate what the cause of a certain material event was which is a candidate for being a counter-instance to CC. But this will not yield much support for CC because there are so many particular events in the past and in the future where science will never look for, and find, evidence

that they had material causes. More promising is the idea that CC is supported by the fact that science has made many successful predictions and is likely to do so in future, and by the fact that science has discovered laws of nature and is likely to do so in future.

If a material event had an immaterial cause then its occurrence could not be predicted through knowledge of laws and of material events that took place earlier than the immaterial cause (except when there are laws that govern situations that are partly immaterial, but I ignore this possibility here). That a scientific prediction, for example of an eclipse or of a spring tide, was successful shows, therefore, that no immaterial things intervened in the causal processes that led to the predicted event. That many scientific predictions were successful shows that often no immaterial things intervened in causal processes. That many scientific predictions were made and few were unsuccessful shows that not often did immaterial things intervene in causal processes where clear predictions were calculable. Similarly, if it is likely that many scientific predictions in the future will be successful, then it is likely that not often will immaterial things intervene in causal processes where clear prediction are calculable. If, however, there are also many events for which thus far we cannot calculate clear predictions based on the laws of physics, like some weather phenomena or some movements of animal bodies, then the high number of successful scientific predictions and the low number of unsuccessful predictions does not support the view that there are no material events with immaterial causes. It only shows for the sorts of events where we can calculate clear law-based predictions that immaterial things do not often intervene in the causal processes leading to them.

That seems to me to be our situation. We can make many law-based predictions of eclipses, spring floods, etc., and most of them are successful. But there are not only many events in the past whose causes we have not investigated and will never be able to investigate, there are also many events in circumstances where we are thus far unable to make predictions. For example, many events involving animals we cannot predict, such as

that the sparrow in front of my window just moved its wing as it did, that the cow ate this yellow flower rather than that one, or that I just whistled an A flat rather than an F. This is of course not in itself evidence for there being immaterial objects at work, but it means that for all these areas the success of science does not make it improbable that there are immaterial objects. The success of science is compatible with there being immaterial objects acting in these areas. Whether and in which immaterial objects we should believe depends on what evidence there is for them. If there is no positive evidence for them, then we should not believe in them. But if there is evidence, the success of science does not count against it. That is the answer to the question whether the success of science counts against the existence of immaterial objects in areas where we cannot make predictions.

Moreover, the success of science does not even make it very improbable that sometimes there are immaterial things acting in circumstances where on other occasions in circumstances of a *similar kind* we can make successful predictions. If God moved away the stone from Jesus' grave, how should that impede science today or how should it be in conflict with the results and the success of science? It does not conflict with science, and the reason for this is that it is what Swinburne calls a 'non-repeatable' event. All we need in order to be able to discover the laws of nature are experiments where we rightly assume that no immaterial objects interfere. Knowledge of laws thus acquired allows us to know about certain events in certain circumstances that they would not occur unless some immaterial thing caused it. Historical evidence for the occurrence of such an event, e.g. that a certain man rose from the dead, is then evidence for the existence of an immaterial object that could cause such an event.

Melynck (2003, p. 160-162) defends the SNA from CC arguing that since physics has found 'sufficient physical causes for physical effects of very many kinds' we should conclude by *induction* that CC is true. I reply that this conclusion is not justified by induction. We are justified by induction when we conclude from the fact that there are certain forces act-

ing in a certain case, that probably such forces are acting in *all* situations of the same kind. But Melynck's reasoning is not of this kind, it is not a proper induction. As we are not justified in assuming that because *often* two things accelerate towards each other (because of gravitation), two things *always* accelerate towards each other, so we are not justified in assuming that because *often* material events have a full material cause, material events *always* have a full material cause. Swinburne (1997, p. 237) makes a similar point: 'Only if there was some well-confirmed formula which states after how much work scientists would achieve successful predictions in any field could we reasonably infer (if it follows from the formula) that they will obtain successful predictions in all fields if they work hard enough. There is no such formula. In its absence we must affirm that increasing success does not indicate future total success.'

If you do not agree with my conception of laws of nature, consider this argument against Melynck. It is true that science has found full material causes for many material events of many kinds. But that is in conflict neither with the assumption that certain events in the past had immaterial causes (e.g. the stone's moving at Jesus' grave), nor with the assumption that in certain areas (e.g. human brains) some events have immaterial causes. Let me explain.

It would perhaps be in conflict with the assumption that certain events in the past had immaterial causes if science had searched for, and found, full material causes of the vast majority of events, but of course science has not done that. And that science has found material causes for events of *many kinds*, does not support Melynck's point because the fact that events of a certain kind *sometimes* have material causes does not show that they *always* have material causes. To illustrate, the fact that the movement of pieces of iron is sometimes caused through gravitation does not show that it is always caused through gravitation; sometimes it is caused through magnetic forces. Events of the same kind can have causes of different kinds at different occasions. That is why there is no inductive support for CC here.

The fact that science has found full material causes for many material events of many kinds is not in conflict with the assumption that in certain areas some events have immaterial causes. For example, the assumption that some events in human brains are caused by human souls is not in conflict with science having discovered material causes of many sorts of material events outside human brains. This assumption would only become improbable if science discovered full material causes of so many brain events that there were no room for immaterial causes. That is why there is no inductive support for CC here. Science has discovered for many kinds of material events what kind of material event they cause if nothing else is acting in the situation, but it has not discovered that material events never have immaterial causes. (For a further argument against the claim that the success of science supports CC, see Montero 2003.)

What people who say that science has shown that there are no material events that have immaterial causes might have in mind is that science has found material causes of some kinds of material events that some men formerly believed to have immaterial causes. Imagine, for example, that some men believed that northern light is caused by the god Thor when he is jealous. The discovery that northern lights are caused by interactions of energetic particles from outside the atmosphere with atoms of the upper atmosphere does something to show that this is false: it shows that a northern light has no immaterial causes later than the ones identified by science. However, this does little to show that there are no counter-instances to CC at all. The evidence for the hypothesis that Thor causes northern lights was very weak to start with, because there is little evidence that Thor exists and that he has the power and a reason to cause northern lights, and there may be other counter-instances to CC for whose existence there is better evidence. What needs to be investigated is how strong the evidence for, say the existence of human souls or of God is, and whether we can think of material causes of the alleged counter-instances to CC and whether the explanations of the alleged counter-instances to CC in terms of immaterial causes are *better* than the ones in terms of material causes.

Conclusion

I have argued that it is neither a principle nor a result of science that there are no counter-instances to the principle of Causal Closure. The Sweeping Naturalistic Argument from Causal Closure based on science is unsuccessful.

There is another popular SNA, claiming that, because immaterial things are so different from each other, it is impossible that there is causal interaction between them. John Heil, for example, writes ‘if minds and bodies are distinct kinds of substance, it is hard to see how such causal interaction could occur’ (Heil 1998, 23). My view on this, which I cannot defend here, is that the only way to show that there are no such interactions is by showing that there are no immaterial things. I suggest therefore that the materialist, like his immaterialist opponent, has to use non-sweeping arguments. He has to criticize the arguments for the existence of God (see e.g. Swinburne 2004), souls (see e.g. Foster 1991; Swinburne 1997), etc., one by one, and he can further support his claim by giving positive arguments against the existence of such things, e.g. the argument from evil against the existence of God (see. e.g. Howard-Snyder 1996). But there is no short cut for materialists.

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