

Against Physicalism

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1. WHAT IS PHYSICALISM?

The thesis of physicalism (or, if you like, the *main* thesis of physicalism) is this: *Every non-abstract individual is completely physical*. If philosophers profess to be physicalists but *deny* the thesis I just formulated (which means: *assert that some non-abstract individual is not completely physical*), then I have *no* quarrel with them (but they certainly seem to be confusing physicalism with something it is not).

The thesis of physicalism could be formulated in a way that enables it to assert (much) *more* than it does in its just previously presented version: simply replace “non-abstract individual” with “entity”. If there are other entities than non-abstract individuals (for example, *abstract* individuals, or *universals*, or other non-individuals, abstract or not), then the resulting version of the thesis of physicalism would assert *more* than the version I favour—but physicalism would also seem only all too easy to refute. Are not all abstract entities completely non-physical? Are there not universals that are completely non-physical (and hence not completely physical)? The situation is only slightly improved if one merely replaces “individual” with “entity” (and thus retains the restriction expressed by “non-abstract”), for the discussion of the philosophy of mind in the last twenty years has, in the end, rather tended in the direction of accepting that some non-abstract universals—certain properties—are not completely physical.¹ The combined efforts of so many physicalists have not been able to disperse the strong impression that, say, the property of *being in pain* is not completely physical. As a result, the doctrine of, so-called, “property dualism” has won quite a foothold among the philosophers. And the sworn enemies of dualism—they would rather bite off their tongues than profess dualism in any form—have reacted, too: the thesis of physicalism has, by and large, taken on its previously presented, already rather restricted form. *This* is what physicalism now is.

However, many philosophers nowadays in fact believe that physicalism is *something else*. In reaction to critical arguments, they have gone even further than merely reducing physicalism from “Every *entity* (or alternatively, *every non-abstract entity*) is completely physical” to “Every *non-abstract*

individual is completely physical". In what way have they gone even further (on the way of retreat)? The thesis of physicalism, as it is formulated here, is a thesis of *subsumption*: all non-abstract individuals are subsumed under the completely physical ones. One can also put this thesis in terms of *identity*: *Every non-abstract individual is identical with a completely physical one*. This is logically equivalent to the version of physicalism introduced in the first paragraph;² it is also a version that everyone who has followed the discussions in the philosophy of mind immediately recognizes as the "the token-identity theory" (sometimes the effect of recognition can be increased by replacing "individual" by "particular").

Now, many philosophers have quietly taken their leave even from "the token-identity theory" in recent decades—but still declare themselves to be physicalists. In their eyes, the thesis of physicalism is *not* a thesis of subsumption; it is a thesis of *dependence*. Dependence can be spelled out in various ways. In recent years it has been fashionable to spell it out in terms of (various relations of) *supervenience*. Doing so is pleasingly technical, since supervenience concepts are fairly complex and invite discussion. But what physicalism as a thesis of dependence boils down to after all is simply this: *Every non-abstract individual is either a part of the completely physical (world), or depends—for its very existence and also for the way it is—on the completely physical* (where *the completely physical*, it should be noted, is taken to be defined by *physics*). If physicalism is put *in this way*, it becomes rather easy to defend it. For, while there is hardly any evidence that, say, a particular pain-event *is* completely physical, there is ample evidence that it *depends*—for its very existence and for the way it is—on the completely physical, specifically, on the completely physical goings-on in a particular, completely physical nervous system.

But the trouble is that it is hard to see why *this*—the just-formulated thesis of dependence—is (the thesis of) *physicalism*. One is, quite reasonably, inclined to object that the *dependence* of the Fs on the Gs, even if it is dependence in the strongest sense, does not imply that the Fs *are* Gs. One expects, quite rationally, more of physicalism than just to be a thesis of dependence; one expects physicalism to be a thesis of subsumption. For may not also *dualists* underwrite the above thesis of dependence? Indeed, they *may* underwrite it (and I, for my part, do underwrite it); all that is necessary for dualists to take that step is a readiness to see minds as parts of nature (*albeit* as parts that are at least partly non-physical).³ Thus, *unless* the above thesis of dependence—let it be taken to assert dependence *in the strongest sense*—is complemented by a conditional thesis of reduction (which thesis, note, would never be accepted by dualists),

*If a non-abstract individual strongly depends on the completely physical,
then the best thing to do is to consider it completely physical,*

the above thesis of dependence *is not* physicalism.

If, however, it is complemented as described and the reductive injunction is obeyed, then, clearly, the assertion of the dependence-thesis induces the assertion of the corresponding subsumption-thesis—which is the thesis formulated in the first paragraph of this essay. *Nothing* has been won. Physicalists might as well stick to that initial thesis. Indeed, they *must* stick to it—or lose their identity (i.e., the rational right to call themselves “physicalists”).⁴ For that thesis is *essential* to physicalism.

In what follows, I advance various arguments against the thesis of physicalism as formulated in the first paragraph of this chapter, in other words, against what is widely known as “the token-identity theory”. (I have explained why I take physicalism to amount *in essence* to that thesis or “theory”.) Those arguments seem to me not without some merit. But in any case, they can be considered to be arguments against physicalism *which are paradigmatic in the long run* (that is, *paradigmatic* in consideration of the relevant history of ideas *in its entirety*).⁵ The general trouble with arguments, however, is that they all start with *premises*. This elementary fact renders arguments powerless *ad personam* in truly controversial cases: opponents can always counter the argument by denying its premise, or all or some of its premises. If their position is dear to them, *no costs* incurred by doing so—by denying *premises*—will be too high for the opponents. Consider in this connection the following rather telling quotation: “[D]ualism is to be avoided *at all costs* . . . *accepting dualism is giving up*” (Dennett 1991: 37, all emphases are in the original). I trust that the arguments that follow will, sometimes at least, fall on ground that is less stony (i.e., less irrational) than the ground of cognition apparent in this quotation. And note: if an argument is powerless *ad personam* (i.e., cannot convince opponents who are hardened in their position), it does not follow that the argument is *simpliciter* powerless, powerless *from the rational point of view* (an objective point of view I take to exist).

In preparation of the ground on which the arguments are to fall, the next two sections offer ruminations on my (i.e., *our*) nature.

2. IT IS (AT LEAST) DIFFICULT TO FIND ME AMONG THE MATERIAL THINGS

I cannot doubt that I exist (i.e., that I am an actual entity). In fact, doubting that I exist is not only a psychological impossibility for me, it is also a rational impossibility—because my doubting entails my existence. Long ago, Descartes drew our attention to this elementary fact (apply it to yourself). Doubtless, therefore, *I am* (“*ego sum*”). But *what* am I? This seems rather less obvious than that *I am*. Consider a particle that is now in my body. For a long time it has not been there, and for a long time it will not be there. The same is true of each and every particle in my body. The particles in my body cannot make me up, cannot be me, neither their totality, nor a subset

of it. For I am there, in my body, completely, as long as I exist, they are not. None of them is, no set of them is.⁶

The organization or structure of my body is ontologically indifferent to the individuality of the particles in my body (they only need to be *of the right kind, at the right time at the right location*)—just as indifferent as I am. And that structure is there, in my body, as long as I exist—just as I am. This may suggest that I am the structure of my body. But I am not. For I am an *individual*, the structure of my body is not. The structure of my body is a *universal* (instantiated at different times by different collections of particles, even by collections that have not a single element in common). I am, therefore, not the organization or structure of my body.

But what if the structure of my body is not a universal? What if it is a *trope*? A trope is an *individual* after all. But *which* trope? For the life of my body certainly comprises a *succession* of very many structural tropes. If the structure of my body is a trope, it must be one of these successive tropes. But *which* of them is *the* (individualized) structure of my body? *Which* of them *am I* if I am to be the structure of my body?—These are questions without answers, and not because of a mere lack of knowledge. It seems obvious, moreover, that I exist much longer than any one of those successive tropes; if this is not an illusion, I cannot be any one of them. The conclusion, therefore, can hardly be avoided that I am not the structure of my body, not even if that structure is taken to be an individual, a trope.

Am I my body itself? But there is a huge multitude of candidates for the role of *my body*. There is *my maximal body*. In my maximal body, at a given time, consider item X, which is material but inessential for my existence (in the sense that it could be lacking without replacement and my existence would, nevertheless, not be impaired); consider my maximal body *minus* X. This body is *my once-reduced maximal body*. The procedure can be reiterated, and we obtain (in thought) my maximal body, my *once-reduced* maximal body, my *twice-reduced* maximal body, my *thrice-reduced* maximal body, my *four-times-reduced* maximal body, etc. *They* are many, but I am only *one*. *Which* of them am I if I am to be *my body*? *Which* of them is *my body*? So far, I have no clue.

But is there not a *constant minimal body of mine*? If so, that body would be the best candidate to be identified with *my body*, and therefore the best candidate to be identified with me—if I am to be *my body*. Suppose there is a constant minimal body of mine, Z. In Z, there is *no* X that is material and inessential for my existence. Now, if there is *no* X in Z that is material and inessential for my existence, then, consequently, there is *no* (material) *particle* in Z that is inessential for my existence. But we have already seen that *every particle* is inessential for my existence (its lacking without replacement would not impair my existence, or, at least, *another* particle—of the right kind—in its place would do as well); therefore, every particle *in* Z is inessential for my existence. It follows that there is *no* particle in Z—which is absurd. There is, therefore, no constant minimal body of mine.

3. I CANNOT BE FOUND AMONG THE PHYSICAL EVENTS

One can circumvent the problems apparent in section 2 if one does not look for me among the material *things*, but among the physical *events*, more precisely speaking, among the physical life-processes. Why not say that I am a certain physical and physically unified life-process? This has the consequence that if I say "I", I am not referring to something that exists already in its entirety (unless "I" is the word with which I die), but to something of which, to date, only a temporal part exists—which does not seem right. Or I am, indeed, referring to something which exists already in its entirety, but with temporal parts (those in the future, perhaps larger parts than are already *given to it*) which are—for itself and for others—*terra incognita*. And this does not seem right, either. Phenomenologically, I am quite something else than my life-process—whether that process is purely physical or not. Phenomenologically, by saying "I" on various occasions, I am *also not* referring to various (more or less) momentary egos in a long procession of such egos, each ego different from all the countless others in the procession, each rather similar in a particular way to the others (though the similarity decreases as temporal distance increases). Phenomenologically—that is, such as I (we) experience it—by saying "I" on different occasions, I am referring to numerically the same entity which is wholly present (no part of it is not present) on each of these occasions, and which, nevertheless, undergoes change in the course of time. If this phenomenology is veridical—and there is no good reason why it should be considered non-veridical⁷—I cannot be an *event* (extended or momentary). A fortiori, I cannot be found among the physical events.

Nevertheless, my body and its parts, and my life and its parts, certainly stand in a close relationship to me. That relationship, although it does not seem to be identity, does not seem to be a mystery, either. Are not my body and its parts *mine* simply in virtue of being experienced by me in a particular way (closeness, intimacy, agency, and, say, collocated double sensations of touch, etc, are hallmarks of the contents of that experience)? And is not my life *mine* simply by consisting of my experiences, of which I am the intrinsic subject?"

4. THE CARTESIAN MODAL ARGUMENTS

The following two arguments are inspired by the *Meditations (on First Philosophy)* of René Descartes (published in 1641).⁹ They also have a modal character. This is why I call them "the Cartesian modal arguments".

4.1. The First Cartesian Modal Argument

Scepticism about the external world is based on a possibility: It is possible that I exist—with just the states of consciousness I had, have, and will

have—and the physical world does not exist. Accepting this possibility is a *necessary condition* for external world scepticism (i.e., for scepticism about *the existence* of the external world); it is not, of course, a *sufficient condition*. There are few who *doubt* the external world, but there are many, indeed, who entertain the possibility just proposed. They are not moved to doubt by it, but, as it were, merely to dipping their toes into the waters of doubt—because, after all, the possibility in question is a *mere possibility*, as they firmly believe.

To believe that the possibility in question is a *mere possibility* is quite a different thing than *to deny it*. If the question is whether to assert that it is in the broadest sense possible that I exist without the physical world existing, or to assert that it is not even in the broadest sense possible that I exist without the physical world existing, then the first alternative wins hands down. I proceed on the assumption—*premise 1a*—that it is (in the broadest sense) possible that I exist and (“at the same time”) the physical world does not exist.¹⁰ If it is possible that I exist and the physical world does not exist, then it follows that it is possible that I am completely non-physical. This seems clear enough. Hence, it is possible that I am completely non-physical. Now, it seems to be necessarily the case: if I am completely non-physical, then I am completely non-physical *necessarily*. Could the property of being completely non-physical be a contingent property of mine? Is there a possible world (in the broadest sense) where I have that property but do not necessarily have it? It seems not,¹¹ and thus I propose *premise 2a: Necessarily, if I am completely non-physical, then I am completely non-physical necessarily*. It follows that *I am completely non-physical* (and, a fortiori, *not completely physical*).

How does this follow? In this way: Since it possible that I am completely non-physical, and since it is necessarily the case that if am completely non-physical, I am completely non-physical *necessarily*, we obtain (by elementary modal logic): it is possible that I am completely non-physical *necessarily*. Therefore (by S5-modal logic, which is applicable here since we are talking about possibility *in the broadest sense* that goes with impossibility and necessity *in the strictest sense*),¹² *I am completely non-physical*.

Thus, the thesis of physicalism stands refuted because, in addition to being completely non-physical, I certainly am a non-abstract individual (no proof needed), even an existent one, and because being completely non-physical obviously entails being not completely physical.

The best objection to this argument is that its premises cannot be correct, not both of them, because it is *obviously (glaringly, almost self-evidently) untrue* that I am a completely non-physical being. After all, do I not have hands and feet, arms and legs, and a trunk and a head? The response to this objection is this: “I” does not always mean the same. In the argument, “I” refers to the subject of my experiences; in the objection to the argument, however, “I” refers to a certain—no doubt existing—human being, comprising not

only the subject of my experiences but also my body. It is indeed obvious that the human being referred to *is not* completely non-physical, but this *does not* preclude that the subject of experiences referred to *is* completely non-physical.

One is free to deny the premises of the previous argument. But this move will be convincing *to others* only if the grounds for the denial of the one premise or the other, or of both premises, are better, from the rational point of view, than the grounds for their acceptance. I, for my part, do not perceive that the grounds for denial are better than the grounds for acceptance (far from it). Note that in seeking to provide *grounds* for denying premises $P_1, \dots, P_N$ that logically lead to conclusion C —a conclusion one happens to dislike—one cannot rationally adduce non- C *as such a ground* (although it is perfectly alright if one rests assured that those premises cannot all be true—because, after all, one does not believe that C is true, in fact, one *believes that non- C is true*).

Another attitude one might adopt in response to the argument is *agnosticism* with respect to its premises. But this, properly speaking, is not a dialectical attitude: it is the refusal to adopt a dialectical attitude. Still, one might ask: Is not all that is in play in accepting or denying the premises of the first Cartesian modal argument a pointless confrontation of mere intuitions? The thought behind this question is that *mere intuitions*, in particular modal ones, are baseless, and therefore arbitrary; one may just as well claim the opposite intuitions. But it is unlikely that the intuitions *in favour* of the premises of the first Cartesian modal argument are arbitrary, since they seem to be the *natural* intuitions. This indicates where the burden of proof lies: *not* with those who accept the premises, but with those who deny them. Moreover, the *insistent* demanding for reasons and grounds is epistemologically irrational, since every ladder of grounds and reasons will, if descended, sooner or later lead to where all such ladders must start (if they are to be useful at all): *to assumptions* for which no grounds have been provided. Blessed are those who have “baseless” intuitions, “mere” intuitions in favour of their ultimate assumptions! For the ultimate assumptions they make are as far away as is possible for such assumptions, in their function, from being epistemically arbitrary.

4.2. The Second Cartesian Modal Argument

Premise 1b: If I am completely physical, then I am identical with my body or with some part of it.

Premise 2b: It is possible for me, my body and every (physical) part of my body that I exist but it does not exist.

Therefore (on the basis of *premise 2b* alone): I am neither identical with my body nor with any part of it.

Therefore (on the basis of the preceding intermediate conclusion and *premise 1b*): I am not completely physical.

This argument has several advantages over the first Cartesian modal argument. A considerable advantage of it is this: it goes directly for the conclusion *that I am not completely physical*, whereas the first argument goes *first* for the much stronger conclusion *that I am completely non-physical* and reaches the conclusion *that I am not completely physical* only as a corollary. In fact, the second Cartesian modal argument is *logically incapable* of establishing that I am completely non-physical—which is no disadvantage if the aim is *merely* to refute the thesis of physicalism. Indeed, with *this* aim in mind, the logical inability to establish the logically stronger conclusion indicates an advantage, for it means that the premises of the second argument are *logically weaker* than the premises of the first, and therefore likely to be *epistemically stronger*: stronger in their status of rational acceptability.

Premise 1b is not a modal premise (and one feels tempted to exclaim: What a relief!).¹³ One will certainly accept that premise if one considers oneself a *thing-like* being. But if one considers oneself an *event-like* being, then *premise 1b* is perfectly acceptable, too—provided one also considers one's body and its (physical) parts as event-like beings. In order to see just how strong *premise 1b* is *epistemically*, try to deny it. Treating “if, then” simply as material implication, the denial yields this: I am completely physical, but I am neither identical with my body nor with any part of it. Now, *what* completely physical being might I conceivably be if I am neither identical with my body nor with any part of it? I, for my part, have no idea.

Premise 2b is a modal premise. For passing correct judgment on the logical cogency of the argument, it is important to appreciate that this premise asserts a possibility *de re* for me, my body, and every part of it, *not* just a possibility *de dicto*. The difference between *de dicto* possibility and *de re* possibility, and the crucial importance of being aware of this difference in evaluating arguments that, like the present one, seek to establish numerical difference, can be illustrated by a simple example.

One might raise an objection against the second Cartesian modal argument by pointing to a case that is *prima facie* analogous. It is possible that the morning star exists without the evening star. Who would deny it? But it does not follow that the morning star and the evening star are numerically different. On the contrary, everybody knows that they are one and the same star, the planet Venus. *Response*: The possibility asserted in saying that it is possible that the morning star exists without the evening star is a mere possibility *de dicto*; such a possibility is not sufficient for inferring in a logically correct way that the morning star and the evening star are numerically different. What would be needed for inferring that conclusion in a *logically correct* way is the corresponding *de re* possibility: It is possible *for* the morning star and the evening star that the former exists without the latter. But, in fact, it is not possible *for* the morning star and the evening star that the former exists without the latter (because they are one and the same star—and nothing, of course, can exist without itself).¹⁴

We can now rest satisfied that the intermediate conclusion of the second Cartesian modal argument *follows logically* from its second premise, *premise 2b* (because that premise asserts a *de re* possibility for the entities it is about, not just a *de dicto* possibility). We can also rest satisfied that the final conclusion of the argument *follows logically* from its first premise—*premise 1b*—plus the intermediate conclusion. Since we have already seen that *premise 1b* is perfectly acceptable, the fate of the second Cartesian modal argument hinges on the acceptability of *premise 2b*. Its acceptability is boosted greatly if the possibility in that premise is taken—just like the possibility in *premise 1a* (in the first Cartesian modal argument)—to be a possibility *in the broadest sense*.¹⁵ In fact, understood in *this way*, *premise 2b* seems undeniably true.

In this case, too, the negation-test may help one to see just how acceptable the premise in question really is. Therefore, try to deny *premise 2b*! Then, does it seem plausible to you that for you and your body, or for you and some part of your body, it is *in the strictest sense impossible* that you exist but it does not exist?¹⁶ That, *in the strictest sense*, you *cannot* exist without it?¹⁷ It does not seem plausible to me, or in any case, much less plausible than *premise 2b*. Even those who are unable to share my view should acknowledge that, objectively, the burden of proof lies with the deniers of *premise 2b*, not with its proponents. (In-principle objections against *intuitions* in general—and against *modal* intuitions in particular—have already been treated in the discussion of the first Cartesian modal argument.)

5. THE CHALMERS-DESCARTES MODAL ARGUMENT

The Chalmers-Descartes modal argument results from the second Cartesian modal argument if *premise 2b* is replaced by the following proposition (and everything else remains the same—except that in the intermediate conclusion, the first conclusion, “2b” must be replaced by “2c”):

Premise 2c: It is possible for me, my body, and every (physical) part of my body that it exists but I do not exist.

The logical mechanism of the Chalmers-Descartes modal argument is essentially the same as that of the second Cartesian modal argument, and everything that has been said in defense of the latter mechanism (in the previous section) is also applicable in the defense of the former. The Chalmers-Descartes modal argument includes “Descartes” in its name because *premise 2c* is a *Cartesian* assumption that can be found—not verbatim but in essence—in Descartes’s writings (in particular, the *Meditations*). It certainly figures there less prominently than *premise 2b*, but Descartes would not have hesitated to agree to *premise 2c*, just as much as to *premise 2b* (consider *Meditations*, VI). The Chalmers-Descartes modal argument includes “Chalmers”

in its name because the anti-materialistic arguments in Chalmers (1996) also point to that premise, *premise 2c*. If the entire physical world, precisely as it actually is in itself, might (in the broadest sense of possibility) exist without consciousness existing, *then*, in virtue of this possibility, my body, as it actually is in itself, and every part of my body, as it actually is in itself, might exist without *me* existing (since the complete absence of consciousness entails *my* absence). The protasis of the conditional just proposed expresses Chalmers's central intuition that the physical world, as it actually is (with all these living organisms, humans among them), *might be* a world of consciousness-lacking *zombies* (in the philosophical sense); it is no bold hypothesis that Descartes shared this intuition (the gist of it, not the formulation).¹⁸

Today, *premise 2c* seems to anti-physicalistically inclined philosophers rather more plausible than *premise 2b*, and Chalmers's central intuition—just described—seems to them rather more acceptable than the central Cartesian intuition¹⁹ that consciousness might exist, just in the way it actually exists, without the physical world existing (this latter intuition stands to *premise 1a* and *premise 2b* as the former intuition stands to *premise 2c*). It is an interesting fact of the history of ideas that the order of acceptability was *quite the other way around* in the eighteenth and nineteenth century. The explanation of this fact is that, *in earlier times*, there was an onto-epistemological predominance of the non-physical over the physical in the *non-physical/physical* duality (consider that the eighteenth and the nineteenth century is the age of the rule of *idealism*); *nowadays*, the order of predominance is entirely reversed, and there is an onto-epistemological predominance of the physical over the non-physical in the duality *physical/non-physical* (after all, this is the age of the rule of *materialism*, and therefore of an intellectual atmosphere that even dualists cannot quite escape).²⁰

6. THE CAUSAL ARGUMENT (AGAINST PHYSICALISM)

It is agreed on all sides that there are certain completely physical events for which we have been unable to find any completely physical sufficient causes, although we have been looking for such causes for more than a century. It does not follow that there are no such causes, or that we will not find them. Still, the following assertion is an assertion which is, as far as we *now* know, very likely true:

Premise 1d: Some completely physical event has no completely physical sufficient cause.

Add to this premise the following premise:

Premise 2d: Every event has a sufficient cause.

It is a matter of straightforward first-order predicate logic that these two premises entail the following intermediate conclusion:

Some completely physical event has a sufficient cause that is not completely physical.

Add to this intermediate conclusion the following premise:

Premise 3d: Every cause is a non-abstract individual.

It is a matter of straightforward first-order predicate logic that this premise and the intermediate conclusion just previously reached together entail the following ultimate conclusion:

Some non-abstract individual is not completely physical.

And therefore, the above-presented argument—for obvious reasons, it is called “the causal argument”—refutes the thesis of physicalism *if* its premises are *rationaly acceptable* (for its logic is impeccable). Note that the argument does not hinge on modal notions (modality may lurk in the notion of *cause* itself, but this is of no importance to the argument); modal intuitions—thought to be very problematic by many—do not come into play in this argument at all. Note also that the causal argument does not hinge on any very specific idea of causality. This has the effect that *the nature* of a sufficient cause for a completely physical event *without* completely physical sufficient cause is left largely unspecified by the argument—except for two things: such a sufficient cause is (i) not completely physical and (ii) a non-abstract individual. The argument does not present any *example* of such a cause. But the quality of the causal argument *as an argument against physicalism* is not diminished by its relative unspecificness.²¹ If it is not necessary to be specific about causality and causes in order to refute physicalism, all the better! To demand more specificness would be an unreasonable (and dialectically unfair) challenge to the argument because it neither addresses the premises of the argument nor the logic.²²

It is more reasonable to declare that one does not understand this or that expression in the argument. As a physicalist, one cannot well declare that one does not understand “physical” or “completely physical”. But one might declare that one does not understand “sufficient cause”. Here is the explanation of this latter expression: a *sufficient* cause is neither a mere *conditio sine qua non* of its effect nor a factor that raises the (objective) probability of its effect; it is an item that *actualizes* its effect, *makes it come about*, either all by itself or given the scaffolding of circumstances and laws. I submit that here we have before us a truly good occasion to let David Lewis’s famous quip, “any competent philosopher who does not understand

something will take care not to understand anything else whereby it might be explained" (Lewis 1986: 203n), be a rule *with exceptions*.

Since *premise 1d* has already been defended, I immediately turn to the defense of the remaining two premises of the causal argument. Here it must be noted that *premise 3d* is beyond reasonable doubt. Every cause must have causal powers, but what is *not* a non-abstract individual (or particular)—because it is abstract or because it is not an individual, or because it is both—does not have causal powers. Therefore, every cause is a non-abstract individual. Note that the mainstream position on the ontological nature of *causes*—that causes are *events*—and the mainstream position on the ontological nature of *events*—that they are *non-abstract particulars*—together imply *premise 3d*. That at least some causes are *agents*, not events, has been argued by some philosophers.²³ But agents are, of course, *non-abstract individuals* (albeit of a different kind than events: they do not have the inbuilt temporal dimension that events have). That causes are *states of affairs*, not events, has also been argued by some philosophers.²⁴ But states of affairs are causes only if they are isomorphic to events that are causes, hence isomorphic to certain causal *non-abstract individuals*; these individuals are, in all cases, the causes in the primary, independent sense, whereas the corresponding states of affairs are causes only in a secondary, dependent, analogical sense.

The upshot of all this is that *premise 3d* stands unshaken. But what about *premise 2d*? This premise is, indeed, the hub of the argument. Everybody knowledgeable in the history of ideas in general, and the history of philosophy in particular, will immediately recognize *premise 2d* as *the principle of sufficient cause* (i.e., as the principle of sufficient reason *in its causal form*). That principle was an unquestioned principle of reason—comparable in status to a principle of logic—until the beginning of the twentieth century. With the advent of quantum physics, however, it has widely been considered to be no longer tenable. The reason for this dramatic “fall from favour” is that the principle of sufficient cause is thought to be incompatible with the—very likely true—assertion that *some completely physical event has no completely physical sufficient cause* (i.e., with *premise 1d*). As a closer look immediately reveals, there is *no logical incompatibility* between the two statements. There is, as a matter of fact, only a *conditional incompatibility* between them. This means that if *a certain other* statement were true, then this would entail that at least one of the two statements is not true. Thus, since *premise 1d* is true (it is reasonable to proceed on this assumption), we would have on the basis of that *other* statement—if it were true—that *premise 2d* is *not* true. This outcome would be fatal to the causal argument, but the question is, of course, *whether* that *other* statement is indeed true.

What *other* statement am I talking about? It is this one:

CC1: If a completely physical event has a sufficient cause, then it also has a completely physical sufficient cause.²⁵

This is a *principle of causal closure (of the completely physical)*, which, though not as old as the principle of sufficient cause, has been widely accepted (not necessarily *explicitly*) for centuries, beginning with the rise of modern physics. The same is true of the following logically stronger principle of causal closure:

CC2: Every cause of a completely physical event is completely physical.

It is easily seen that CC1 is a logical consequence of CC2. But is CC1 true? CC1 is true if CC2 is, but is CC2 true? Just as *premise 2d* and *premise 1d* are incompatible *conditional to* CC1 (or CC2), so *premise 2d* and CC1 (and *premise 2d* and CC2) are incompatible *conditional to premise 1d*. Given the current epistemic status of *premise 1d*, it is, therefore, seen that principles which were once upon a time (until a little more than a century ago) perfectly good friends—the principle of sufficient cause (*premise 2d*) and the closure principles CC1 and CC2—are now inveterate enemies: the division between them is a division between world views.

There are two ways to deal with this situation (and I concentrate on considering CC1): *either* a choice of acceptance is to be made between *premise 2d* and CC1, *or not*. If no choice of acceptance is to be made between them, then one either denies *both* propositions in question or adopts agnosticism with respect to *both* (what one *cannot* do while accepting *premise 1d* is to *accept both*). Agnosticism is no option here; the matter is too important. One has to take a stance. And denying both propositions *kills* physicalism. For consider what denying CC1 (along with *premise 2d*) amounts to: it amounts to accepting that some completely physical event with a sufficient cause has no completely physical sufficient cause, and consequently also to accepting that *some completely physical event has a sufficient cause that is not completely physical*—which is the intermediate conclusion of the causal argument. Does physicalism fare better if a choice of acceptance is to be made between *premise 2d* and CC1? The choice of acceptance is between accepting *premise 2d* (and denying²⁶ CC1), or accepting CC1 (and denying *premise 2d*). Which choice is the better choice?

It is quite clear that accepting *premise 2d*—accepting *the principle of sufficient cause*—is the better choice. For the principle of sufficient cause has credentials that are completely independent of the question whether physicalism is true or not. (This is clearly indicated by the fact that non-materialists *and* materialists alike have accepted that principle throughout the history of philosophy—till the beginning of the twentieth century, when new empirical facts became apparent that gave very strong support to *premise 1d*.) The principle of sufficient cause is *metaphysically neutral*. Thus, there can be no question whether the causal argument commits a begging of the question, whether it degenerates into a *petitio principii*. It certainly does not. Every single one of its premises—and what is most significant: *premise 2d*—is justifiable quite independently from assuming its conclusion to be true. CC1, in contrast, is *not* metaphysically neutral. Indeed, it is hard

to see how one could justify CC1 (let alone CC2) if one does not assume physicalism from the start.

And there is also another consideration in support of the position that accepting *premise* 2d is a better choice than accepting CC1. CC1 leads to the conclusion that the events which are as described in *premise* 1d have no sufficient cause: according to CC1, *all* completely physical events that have no completely physical sufficient cause have no sufficient cause at all; in other words, their taking place is, in each case, to a certain positive extent a matter of pure (objective, ontological) chance. There is—this is the best hypothesis to date, it is far better supported than its negation—not just one event which is as described in *premise* 1d (although if there were just one such event, *premise* 1d would still be true): there are *very many*—countless—such events. Thus, CC1, if accepted as true, has the consequence that pure chance—and therefore *inexplicability*—is introduced into the (completely) physical world to a considerable extent. But now, is not the explicability of completely physical events that have no completely physical sufficient causes *by not completely physical sufficient causes* a lesser insult to reason than *the inexplicability* of such events? It seems only reasonable, only paying due respect to epistemological rationality, to admit that it is a lesser insult—or, indeed, no insult at all, whereas *the inexplicability* certainly is one. Thus, in the presence of *premise* 1d, the principle of sufficient cause wins in the competition of rationality against CC1 (and a fortiori against CC2). And thereby, the consequences that *premise* 2d has in the presence of *premise* 1d win against the consequences that CC1 has in the presence of *premise* 1d. Physicalism stands refuted.

And not only physicalism. The causal argument is rendered special among the arguments against physicalism by the fact that it also refutes (without our having to make any additions to it) two mainstays of physicalism: CC1 and CC2. The *negations* of CC1 and CC2 are straightforward corollaries of that argument. (It should be noted that if physicalists argue for their position, then CC1 or CC2, or a proposition rather similar to the one or the other, is very likely to show up. But usually physicalists are content simply to *claim* the *scientific* superiority of their position.)

The causal argument does not give us a specific counterexample to physicalism: the argument stays on the general level (which cannot be held against it, as I have argued). But each of the following two arguments against physicalism again gives us *a specific counterexample*, just as each of the three arguments presented prior to the causal argument gave us *a specific counterexample*. But *now* it is not always *the same* counterexample. In the next argument, the counterexample given is *not I*, but a certain event.

7. THE ARGUMENT FROM ILLUSION²⁷

Visual experience is full of illusions. For example, one line appears to be shorter than the other, while, in fact, they have the same length. One need

not adduce the more or less spectacular cases of visual illusion—the optical illusions—in order to accept as true that *completely physical objects appear in visual experience not as they really are*. They continue to appear so even if we have stopped to be deceived. This suggests that visual illusions have *carriers* that do not go away even if the false beliefs that, initially, attend on the illusions do go away. There must be *entities* that transport these illusions. And indeed we do not have to look far for those entities: the carrier-entities for visual illusions are our visual experiences (note the plural) themselves. Thus we have: *There are visual experiences in which completely physical objects do not appear as they really are*. What kind of entity is a visual experience? It is an event; it happens at a certain temporal location, it fills a certain interval of time. Moreover, as an event, a visual experience is a non-abstract individual. Consider now any visual experience in which completely physical objects do not appear as they really are. Is such an experience a completely physical event? If it is, then it must be identifiable with something that is completely physical. This seems impossible; it seems it cannot be “fitted in”. What the experience presents is—though completely physical *in intention*—no part of the (real) physical world (since the experience is illusionary), and yet it belongs essentially—inseparably—to the illusionary experience. The best completely physical candidates for identification with illusionary—falsifying, distorting—visual experiences of parts of the physical world are certain brain events (in the brain of the person who has the experiences). But while these brain events stand in a causal relationship to the experiences, they cannot *be* them (indeed the causal relationship already precludes their *being* them, on pain of self-causation); they cannot be “the images created in the brain”, as the matter is popularly (and misleadingly) put. For, causal considerations aside, it is no part of the intrinsic nature of any brain event that, say, a particular pencil-drawn line on a particular piece of paper appears to be shorter than another such line on that same piece of paper—whereas this is indeed part of the intrinsic nature of any Müller-Lyer visual experience. Thus, the conclusion can only be this: *certain non-abstract individuals*—in this case, illusionary visual experiences of parts of the physical world—are *not completely physical*. Again physicalism stands refuted.

8. THE ARGUMENT FROM PERSPECTIVE²⁸

Suppose I aim a laser gun at a certain target—and make a good shot. This means that, when I pulled the trigger, the target point I aimed at, the front sight and the back sight on the gun, *and the point of my perspective* in aiming—i.e., the point from which I aimed—lay on the same straight line. Let P be the point from which I aimed. P is the origin of that straight line. It is a certain point in space.²⁹ Which point? Which point it is can be experimentally determined. Staying where I am and without moving my head, I aim the gun at various targets points, very many of them, say, one hundred (doing so each time as precisely, as correctly as possible, as if I wanted to

hit, with the laser beam, the point I aim at). The line in space in which the gun lies in each act of aiming is recorded (it is externally observable). P is, or lies within, the small region of space where all the lines of aiming converge.

Now, it seems correct to say that P is not only the point from which I aimed, but also the point *where I was* as long as the experiment lasted. The alternatives to my being in P—to my precisely occupying P—are (i) that I am nowhere in space, and (ii) that I am in—precisely occupy—a region in space other than P. Both alternatives are out of the question when one considers that, while aiming the gun, I would be ready to say the following things (and we have no good reason to doubt that they are *literally true*): “The backsight of the gun is closer to me than the frontsight”, “The eye with which I aim is closer to me than my hands that hold the gun”, and “The inner region of the eye with which I aim is closer to me than its outer region, which I can cover by closing my eyelids”.

Thus, I am *in* P (literally)—during the time under consideration: time T. But *what* am I if I am in P during T? It seems I would have to be a completely physical individual. Unfortunately, the completely physical individual that can be found to be in P during T—constituted by relatively few atoms in more or less complex arrangements³⁰—is no likely candidate for being me, although it is the *best* completely physical candidate for being me (given that I am in P during T). There is no better completely physical candidate, but it is not a good, not even a satisfactory candidate, far from it. Thus, the conclusion can only be that I am not a completely physical individual after all, and that therefore (since I certainly am a non-abstract individual)³¹ I am a non-abstract individual that is not completely physical.

But then, why does it seem that I would have to be a completely physical individual if I am in P during T? The impression is generated by thinking, without justification and in fact wrongly, that if proposition A is true, proposition B—which, superficially regarded, is similar to A—must be true, too. It is *true* that every completely physical individual is, at any time of its existence, a non-abstract individual *in* (physical) space. But it does not follow that every non-abstract individual that is *in* (physical) space at a given time is completely physical. In fact, the negation of this is true.

NOTES

1. Note that a physical universal must be physical in a quite different way than a physical individual. The physicalness of a universal must be compatible with the characteristic ability of all universals: the ability of being wholly present in *different* locations at the *same* time. Note also that one *might* take the stance—it is not positively irrational to do so—that already *that* ability turns all universals into completely non-physical entities.
2. It is an elementary law of first-order predicate logic *with identity* that $\forall x(Fx \supset Gx)$ is logically equivalent to $\forall x(Fx \supset \exists y(Gy \ \& \ x = y))$.
3. The further possibility of a naturalistic dualism (or dualistic naturalism) is quite outside the ken of many philosophers. The widespread *idée fixe* that the

denial of physicalism implies the acceptance of *supernaturalism*—that is, the recognition of supernatural non-abstract individuals—does much to explain why physicalism is so tenaciously held on to. But physicalism, although it entails the negation of supernaturalism, is not identical to the negation of supernaturalism.

4. Cf. Meixner (2008).
5. A rich array of anti-physicalistic arguments—including versions of those that have, in the recent decades, dominated the discussion *ad nauseam*—can be found in Meixner (2004). Recent collections of essays that are critical of physicalism are: Antonietti, Corradini and Lowe (2008), and Koons and Bealer (2010), Göcke (2012).
6. It does not already follow that I am an immaterial entity (it only follows that it is difficult to find me among the material things). For consider this: What is true of the particles in my body is, *mutatis mutandis*, also true of the particles in the *Ship of Theseus*. Yet, doubtless, the Ship of Theseus is a material thing.
7. Cf. Meixner (2002).
8. The details are a matter of detailed phenomenological description, as pioneered in the works of Edmund Husserl. See, in particular, Husserl (1982) and (1989) (that is, *Ideas I* and *Ideas II*).
9. For the first argument, consider *Meditations*, I and II (in any good edition); for the second argument, consider *Meditations*, VI.
10. The assertion has the form $\Diamond(Ea \ \& \ \text{non-}Eb)$, *not* the form $(\Diamond Ea \ \& \ \Diamond \text{non-}Eb)$.
11. Note that *my having a body* does not preclude that I am, nevertheless, completely non-physical.
12. The logical principle used is this: $\Diamond \Box A \supset A$. It is not only a theorem of S5 but also (already) of B, the Brouwerian system. Cf. Hughes and Cresswell (1968).
13. Why does one wish to avoid modality? Modality leads to epistemological difficulties—although certainly not all applications of modal concepts are epistemologically troublesome. The troublemakers are possibility without known actuality (of what is considered possible), possibility with known actuality of the negation (of what is considered possible), and necessity (if it is not entailed by actuality). How does one know such things? Some answers are provided in Meixner (2006a).
14. The *de dicto* possibility has the form $\Diamond(Ea \ \& \ \text{non-}Eb)$, and the corresponding *de re* possibility has the form $\exists x \exists y (a = x \ \& \ b = y \ \& \ \Diamond(Ex \ \& \ \text{non-}Ey))$. The *de dicto* possibility *plus* $a = b$ (and nothing further) does not logically entail $\exists x \exists y (x = y \ \& \ \Diamond(Ex \ \& \ \text{non-}Ey))$ (this latter formula is logically impossible, its negation a logical theorem); the *de re* possibility, however, *plus* $a = b$ (and nothing further) *does* logically entail $\exists x \exists y (x = y \ \& \ \Diamond(Ex \ \& \ \text{non-}Ey))$. In other words, $a = b$ is, in itself, logically compatible with $\Diamond(Ea \ \& \ \text{non-}Eb)$, with the *de dicto* possibility; but $a = b$ is not logically compatible, in itself, with $\exists x \exists y (a = x \ \& \ b = y \ \& \ \Diamond(Ex \ \& \ \text{non-}Ey))$, the *de re* possibility.
15. What does this mean *precisely*: “X is possible in the broadest sense”? It means that there is *no restriction except conceptual consistency for the alternatives to actuality* that are taken into account in addition to *actuality*, and X pertains to actuality or to (at least) one of its alternatives.
16. The negation of possibility in the broadest sense is impossibility in the strictest sense. The logical form of premise 2b is this: $\exists x \exists y [a = x \ \& \ b = y \ \& \ \Diamond(Ex \ \& \ \text{non-}Ey) \ \& \ \forall z (zPy \supset \Diamond(Ex \ \& \ \text{non-}Ez))]$. The negation of this is logically equivalent to this: $\forall x \forall y [a = x \ \& \ b = y \supset (\text{non-}\Diamond(Ex \ \& \ \text{non-}Ey) \vee \exists z (zPy \ \& \ \text{non-}\Diamond(Ex \ \& \ \text{non-}Ez)))]$. Therefore (logically): $\exists x \exists y [a = x \ \& \ b = y \ \& \ \text{non-}\Diamond(Ex \ \& \ \text{non-}Ey)] \vee \exists x \exists y [a = x \ \& \ b = y \ \& \ \exists z (zPy \ \& \ \text{non-}\Diamond(Ex \ \& \ \text{non-}Ez))]$.

17. What does this mean precisely: “X is impossible *in the strictest sense*”? It means that there is *no restriction except conceptual consistency* for the *alternatives to actuality* that are taken into account in addition to *actuality*, but (still) X pertains neither to actuality nor to any of its alternatives.
18. It is important to remember that an assertion of the form “It might be the case that A” does not necessarily indicate that the proponent of the assertion accords a subjective probability greater than zero to A. The proponent of the assertion may be simply asserting that A is true in some possible world, and he can very well assert this even if he holds that the subjective probability of A is zero. In the given case, it is safe to assume that both Chalmers and Descartes accord the subjective probability zero to “The physical world, as it actually is, is a world of consciousness-lacking zombies”.
19. There is a central and a *less central* Cartesian intuition; for Descartes did share Chalmers’s intuition.
20. It is not unlikely that the reversal in the order of predominance has to do with the reversal in the relative strength of two cultural forces: religion (favouring the non-physical) and science (favouring the physical).
21. If one puts it (with modifications) *to other uses*, then that unspecificness is a drawback. See Meixner (2009) and Meixner (2012).
22. Already in antiquity, Euclid proved that there are infinitely many primes. It is a corollary of the proof that there must be a smallest prime that is greater than 243 to the power of $10^{1000000000}$. Would it be a reasonable challenge to Euclid’s proof that it does not tell us which number, precisely, is that prime?
23. For details, see, for example, Meixner (2001).
24. For details, see again Meixner (2001).
25. This is, of course, meant to be a general statement, not a particular one.
26. It must be *denying* CC1 (i.e., accepting the negation of CC1), not just *not accepting* CC1—because we already accept (as true) *premise* 1d. The same remark applies also to *premise* 2d. (Consider what the truth of *premise* 1d means for the relationship of CC1 and *premise* 2d.)
27. Cf. Meixner (2006b).
28. Cf. Meixner (2010).
29. By “point in space” I do not here mean a *geometrical point*. I mean a very small region of space. One might consider replacing “point” by “spot”.
30. The atoms are relatively few because P is a very small spatial region. Due to the relatively small number of atoms in P, the degree of complexity that can be attained by their arrangements is also relatively small.
31. I am causally responsible, in the end, for (the event of) the pulling of the trigger. It follows that I am a non-abstract individual (cf. *premise* 3d).