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PHILOSOPHY OF MIND

Contemporary Readings

Edited by
*Timothy O'Connor and
David Robb*



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- An Argument for Interactionism* (Berlin: Springer, 1977), pp. 282ff, 293f. I might remark that I am not wholly sympathetic to Eccles' own interactionist theory, though some features of his approach accord with mine.
- 13 That neural structures themselves exhibit a fractal geometry is well attested: see further A.L. Goldberger *et al.*, "Chaos and Fractals in Human Physiology," *Scientific American* 262 (1990), pp. 34–41.
 - 14 I am not suggesting that the trees lack "tips" because the fractal branching proceeds literally *ad infinitum*, with each pathway constituting an infinite series of causally related events the totality of which occurs within a finite period of time – an idea reminiscent of one invoked by Lukasiewicz in attempted refutation of determinism: see J. Lukasiewicz, *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, 2nd edn (Oxford: Clarendon Press, 1957), pp. 207–208. For although such a scheme is mathematically possible, it seems unlikely from a physical point of view. Rather, the trees lack "tips" because the fractal branching proceeding from any one peripheral event eventually merges seamlessly into the prior causal history of the whole brain, fusing with the branching of other trees. Incidentally, empirical confirmation of my claim that the mind does not *initiate* causal chains of neural events leading to peripheral events is provided by Libet's finding that conscious awareness of the will to act occurs some 350 msec *after* the onset of the pattern of brain activity ("readiness-potential") which characteristically precedes voluntary movement, though still some 200 msec before the movement itself occurs: see B. Libet, "Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action," *Behavioral and Brain Sciences* 8 (1985), pp. 529–566.
 - 15 See further J.L. Mackie, *The Cement of the Universe: A Study of Causation* (Oxford: Clarendon Press, 1974), pp. 34ff.
 - 16 See, e.g., P.M. Churchland, *A Neurocomputational Perspective: The Nature of Mind and the Structure of Science* (Cambridge, Mass.: MIT Press, 1989), ch. 1. For forceful criticism, see L.R. Baker, *Saving Belief: A Critique of Physicalism* (Princeton: Princeton University Press, 1987), ch. 7.
 - 17 This commits me to holding that events can stand in causal relations to *facts*, and not just to other events, contrary to the assumption that I have been working with until now: but I am happy to accept the commitment. On the distinction between event causation and fact causation, see further J. Bennett, *Events and their Names* (Oxford: Clarendon Press, 1988), pp. 21ff. Incidentally, don't ask me *how* the mind can do what I am now proposing that it does, if what you want is an answer which will render its mode of operation "intelligible" in the sense discussed at the beginning of the paper.
 - 18 For a general and not unduly technical account of chaos theory, see J.P. Crutchfield *et al.*, "Chaos," *Scientific American* 255 (1986), pp. 38–49.
 - 19 It appears that chaos theory has an important role to play in explaining certain patterns of behaviour in the autonomic nervous system, such as the normal heartbeat: see Goldberger *et al.*, *op. cit.* But such bodily activity is, of course, precisely *not* deliberative.
 - 20 For one recent evolution-inspired theory of brain function, see G.M. Edelman, *Neural Darwinism: The Theory of Neuronal Group Selection* (Oxford: Oxford University Press, 1989).
 - 21 I am grateful to colleagues and students in Durham for their reactions to an earlier version of this paper, and to members of the editorial panel for helpful comments on the penultimate draft.

Jaegwon Kim, "Lonely Souls: Causality and Substance Dualism"*

I. The problem

We commonly think that we, as persons, have both a mental and a bodily dimension – or, if you prefer, mental aspects and material aspects. Something like this dualism of personhood, I believe, is common lore shared across most cultures and religious traditions, although such beliefs are not always articulated in the form of an explicit set of doctrines as in some established religions. It is often part of this "folk dualism" that we are able to survive bodily deaths, as "pure spirits," and retain all or most of the spiritual aspects of ourselves after our bodies are gone.

Spirits and souls as conceived in popular lore seem to have physical properties as well, if only vestigially physical ones, and are not what Descartes and other philosophical dualists would call souls or minds – wholly immaterial and nonphysical substances outside physical space with no physical properties whatever. For example, souls are commonly said to *leave* the body when a person dies and *rise upward* toward heaven, indicating that they are thought to have, and are able to change, locations in physical space. And they can be heard and seen, we are told, by people endowed with special virtues and in especially propitious mental states. Souls are sometimes pictured as balls of bright light, causing the air to stir barely perceptibly as they move and even emitting some unearthly sounds. Perhaps, they are composed of pure immaterial Cartesian souls and some

* Thanks to David Armstrong, Jerry Katz, Noah Latham, Barry Loewer, Eugene Mills, Timothy O'Connor, Alvin Plantinga, and Ernest Sosa for helpful comments and suggestions. This paper is descended from a paper first presented at a conference on mind-body dualism at the University of Notre Dame in March 1998.

Jaegwon Kim, "Lonely Souls: Causality and Substance Dualism" (slightly modified), in Kevin Corcoran (ed.), *Soul, Body and Survival: Essays on the Metaphysics of Human Persons* (Cornell University Press, Ithaca, 2001), pp. 30–43.

rare, strange matter unknown to science. As is well known, Descartes thought of persons in a similar way – the difference is that for Descartes a person is a combination, or “union” as he called it, of an immaterial soul and a human body composed of ordinary matter, not some weird and ethereal stuff.

But does this conception of a person, as something made up of two radically diverse components, a body and an immaterial soul, make sense, whether the body is made up of ordinary matter or some mysterious ethereal stuff? One contention of this paper is that there is reason to think that such a conception of a person is ultimately unintelligible. My arguments will be principally based on considerations of causation – specifically, I will try to undermine the idea that immaterial souls can causally interact with material bodies, thereby forming a “union” with them. If I am right, it is an idea that we cannot make intelligible. In fact, it will be seen that much of the interest of my discussion, such as it is, concerns issues about mental causation and, more generally, causation itself, and, if the general drift of my arguments is correct, it will cast serious doubts on the usefulness and viability of the very notion of immaterial substance. My claim about the Cartesian “two-component” conception of persons will fall out as a corollary of what I have to say about mind–body causation under substance dualism.

II. Descartes and mental causation

Conventional wisdom has it that the downfall of Cartesian mind–body dualism was due to its inability to account for mental causation. In particular, as has often been noted, his radical dualism of mental and material substances was thought to be inconsistent with the possibility of causal transactions between them. Princess Elizabeth of Bohemia famously asked Descartes to explain “how man’s soul, being only a thinking substance, can determine animal spirits so as to cause voluntary action.”¹ According to one commentator, Richard A. Watson, the perceived inconsistency between the radical duality of minds and bodies and their causal interaction was not only a major theoretical flaw in Cartesianism but also the historical cause of its demise.²

The reason standardly offered for the supposed incoherence of Cartesian interactionist dualism is that it is difficult to conceive how two substances with such radically diverse natures, one in space–time with mass, inertia, and the like and the other lacking wholly in material properties and not even located in physical space, could stand in causal relations to each other. Apparently, various principles about causation, such as that cause and effect

must show a certain degree of “mutual affinity” or “essential likeness,” or that there can be no “greater reality” in an effect than there is in its cause, seem to have played a role. Anthony Kenny, for example, writes: “On Descartes’ principles it is difficult to see how an unextended thinking substance can cause motion in an extended unthinking substance and how the extended unthinking substance can cause sensations in the unextended thinking substance. The properties of the two kinds of substance seem to place them in such diverse categories that it is impossible for them to interact.”³ That is pretty much all that Kenny has to say about Descartes’s troubles with mind–body causation – and, as far as I know, that is pretty much all we get from Descartes’s critics and commentators. But as an argument this is incomplete and unsatisfying. As it stands, it is not much of an argument – it hardly gets started; rather, it only expresses a vague dissatisfaction of the sort that ought to prompt us to look for a real argument. Why is it incoherent to think that there can be causal relations between “diverse substances”? Why is it “impossible,” as Kenny puts it, for things with diverse natures to enter into causal relations with one another? Just what sorts of diverseness make trouble and why?

It has not been an easy matter to pin down exactly what is wrong with positing causal relations between substances with diverse natures and explain in concrete terms what it is about the natures of mental and material substances that make them unfit to enter into causal relations with each other. And there have been commentators who have defended Descartes against the Kenny-style charge of incoherence. Louis Loeb is one of them.⁴ Loeb’s defense rests on his claim that Descartes was a proto-Humean about causation – namely that, for Descartes, causality amounted to nothing more than brute regularity, or “constant conjunction,” and there can be no a priori metaphysical constraint, such as resemblance or mutual affinity, on what events can be causally joined with what other events. Loeb quotes from Descartes:

There is no reason to be surprised that certain motions of the heart should be naturally connected in this way with certain thoughts, which they in no way resemble. The soul’s natural capacity for union with a body brings with it the possibility of an association between thoughts and bodily motions or conditions so that when the same conditions recur in the body they impel the soul to the same thought; and conversely when the same thought recurs, it disposes the body to return to the same conditions.⁵

On Loeb’s view, then, the fact that soul and body are of such diverse natures was, for Descartes, no barrier at all for their entering into the most intimate

of causal relations, to form a “union” that is a person. Taking Loeb’s word for it that Descartes was indeed a proto-Humean on the nature of causation, his point seems to me sufficient as a response to the kind of vaguely worded and inchoate objection of the sort that Kenny and many others have advanced. But does the constant conjunction view of causation really help save Descartes? I don’t think it does, and the reason, I think, is simple to see and also instructive.

Suppose that two persons, Smith and Jones, are “psychophysically synchronized,” as it were, in such a way that each time Smith’s mind wills to raise his hand so does Jones’s, and vice versa, and every time they will to raise their hands, their hands rise. There is a constant conjunction between Smith’s mind’s willing to raise a hand and Smith’s hand’s rising, and, similarly, between Jones’s mind’s willing to raise a hand and Jones’s hand’s going up. If you are a pure constant conjunctionist about causation, this would suffice for saying that a given instance of Smith’s willing to raise a hand is a cause of the subsequent rising of his hand, and similarly in the case of Jones. But there is a problem here. For we see that instances of Smith’s mind’s willing to raise a hand are constantly conjoined not only with his hand’s rising but *also with Jones’s hand’s rising*, and, similarly, instances of Jones’s mind’s willing to raise a hand are constantly conjoined with Smith’s hand’s rising. So why is it not the case that Smith’s volition causes Jones’s hand to go up, and that Jones’s volition causes Smith’s hand to go up?

If, however, you believe in the idea of “causal necessity” and think that constant conjunction, if it is to support a causal relation, must hold with necessity in some form, you have a *prima facie* answer: the constant and regular conjunction between Smith’s mind’s willing to raise a hand and Jones’s hand going up is only coincidental, carrying no force of necessity. And this is perhaps manifest in the fact that there are no counterfactual dependencies between these events: for example, it is not true that if Smith had not willed that a hand should rise, Jones’s hand would not have gone up.

But it won’t do to say that after all Smith wills *his* hand to rise and that’s why his willing causes his hand, not Jones’s hand, to rise. It isn’t clear what this reply can accomplish, but it begs the question on hand. The reason is that, according to the standard interpretation of Descartes, what makes Smith’s hand Smith’s, not Jones’s – that is, what makes Smith’s body the body with which Smith’s mind is “united” – is the fact that there is specially intimate and direct causal commerce between the two. To say that this is the body with which this mind is united is to say that this body is the only material thing that this mind can *directly* affect – that is, without other bodies serving as causal intermediaries – and that all changes this mind can

cause in other bodies are caused by changes in this body. This is *my* body, and this is *my* arm, because it is something that I can move without moving any other body. I can raise *your* arm only by grabbing it with my hand and pulling it up.⁶ And something similar must obtain in the direction of body-to-mind causation as well. The “union” of a mind and a body that Descartes speaks of, therefore, presupposes mental causation. Whether or not this interpretation of Descartes is historically correct, a causal account of “ownership” seems the most natural option for substance dualists, and I do not know of noncausal alternatives that make any real sense.

I have heard some people say that we could simply take the concept of the mind’s “union” with a body as a primitive, and that it is simply a brute and unexplainable fact, perhaps divinely ordained, that this mind and this body are integrated into a proper union that is a person. But I find such an approach unhelpful. For it seems to concede that the notion of “union” of minds and bodies, and hence the notion of a person, are unintelligible. If God chose to unite my body with my mind, just what is it that he did? I am not asking *why* he chose to unite this particular mind with this particular body, or *why* he decided to engage in such activities as uniting minds and bodies at all, or *whether* he, or anyone else, could have powers to do things like that. If God united my mind and my body there must be a relationship R such that a mind stands in relation R to a body if and only if that mind and that body constitute a unitary person. Unless we know what R is, we do not know what God did. Again, we are not asking *how* God managed to establish R between a mind and a body – as far as we are concerned, that can remain a mystery forever. We only want to know *what* God did.

III. Causation and the “pairing” problem

The difficulty we have seen with Loeb’s interpretation of Descartes as a Humean in matters of causation, I believe, points to a more fundamental difficulty in the idea that mental substances, outside physical space, can enter into causal relations with objects in physical space, a difficulty that is not resolved when, as above, some sort of “necessary connection” is invoked as a constituent of causal relations. What is perhaps more surprising, the very same difficulty besets the idea that such nonspatial mental substances can enter into any sort of causal relations, whether with material things or with other mental substances.

Let us begin with a simple example of physical causation: two rifles, A and B, are simultaneously fired, and this results in the simultaneous death of two persons, Andy and Buddy. What makes it the case that the firing of rifle A caused Andy’s death and the firing of rifle B caused Buddy’s death,

and not the other way around? What are the principles that underlie the correct and incorrect *pairings* of cause and effect in a situation like this? We can call this “the causal pairing problem,” or “the pairing problem” for short.⁷

Two possible ways for handling this problem come to mind.

1. We can trace a continuous causal chain from the firing of rifle A to Andy's death, and another such chain from the firing of B to Buddy's death. (Indeed, we can, with a high-speed camera, trace the bullet's path from rifle A to Andy, etc.) No causal chain exists from the firing of A to Buddy's death, or from the firing of B to Andy's death.
2. We look for a “pairing relation,” R, that holds between A's firing and Andy's death and between B's firing and Buddy's death, but not between A's firing and Buddy's death or B's firing and Andy's death. In this particular case, when the two rifles were fired, rifle A, not rifle B, was located at a certain distance from Andy and pointed in his direction, and similarly with rifle B and Buddy. It is these *spatial relations* (distance, orientation, etc.) that help pair the firing of A with Andy's death and the firing of B with Buddy's death. Spatial relations seem to serve as the “pairing relations” in this case, and perhaps for all cases of physical causation involving distinct objects.

The two methods may be related, but let us set aside this question for now.

Let us now turn to a situation involving nonphysical Cartesian souls as causal agents. There are two souls, A and B, and they perform a certain mental action, as a result of which a change occurs in material substance M. We may suppose that mental actions of the kind involved generally cause physical changes of the sort that happened in M, and, moreover, that in the present case it is soul A's action, not soul B's, that caused the change in M. Surely, such a possibility must exist. But ask: What relation might perform the job of pairing soul A's action with the change in M, a relation that is absent in the case of soul B's action and the change in M? Evidently, no spatial relations can be invoked to answer this question, for souls are not in space and are not able to bear spatial relations to material things. Soul A cannot be any “nearer” to material object M, or more appropriately “oriented” with respect to it, than soul B is. Is there anything that can do for souls what space, or the network of spatial relations, does for material things?

Now consider the possibility of causality within a purely mental world – a world inhabited only by Cartesian souls. Soul A acts in a certain way at time *t* and so does soul B at the same time. This is followed by certain changes in two other souls, A* and B*. Suppose that actions of A and B

are causes of the changes in A* and B*. But which cause caused which effect? If we want a solution that is analogous to case 2 above for rifle firings and dyings, what we need is a pairing relation R such that R holds for A and A* and for B and B*, but not for A and B* or for B and A*. Since the entities are immaterial souls outside physical space, R cannot be a spatial, or any other kind of physical, relation. The radical non-spatiality of mental substances rules out the possibility of invoking any spatial relationship for the cause–effect pairing.

Evidently, then, the pairing relation R must be some kind of psychological relation. But what could that be? Could R be some kind of intentional relation, such as thinking of, picking out, and referring? Perhaps, soul A gazes at soul A* and B*, and then picks out A*, and causes a change in it. But how do we understand these relations like gazing at and picking out? What is it for A to pick out A* rather than B*? To pick out something outside us, we must be in a certain epistemic relationship with it; we must perceive it somehow and be able to distinguish it from other things around it – that is, perceptually identify it. Take perception: What is it for me to perceive this tree, not another tree that is hidden behind it and that is qualitatively indistinguishable from it? The only credible answer is that the tree I perceive is the one that is causing my perceptual experience as of a tree, and that I do not see the hidden tree because it bears no causal relation to my perceptual experience.⁸ Ultimately, these intentional relations must be explained on the basis of causal relations (this is not to say that they are entirely reducible to causality), and I do not believe we can explain what it is for soul A to pick out soul A* rather than B* except by positing some kind of causal relation that holds for A and A* but not for A and B*. If this is right, invoking intentional relations to do causal pairings begs the question: we need causal relations to understand intentional relations. Even if intentional relations were free of causal involvements, that would not in itself show that they would suffice as pairing relations. In addition, they must satisfy certain structural requirements; this will become clear below.

We are not necessarily supposing that one single R will suffice for all causal relations between two mental substances. But if the physical case is any guide, we seem to be in need of a certain kind of “space,” not physical space of course, but some kind of a nonphysical coordinate system that gives every mental substance and every event involving a mental substance a *unique location* (at a time), and which yields for each pair of mental entities a determinate relationship defined by their locations. Such a system of “mental space” could provide us with a basis for a solution to the pairing problem, and enable us to make sense of causal relations between non-spatial mental entities. But I don't think that we have the foggiest idea what

such a framework might look like or what psychological relations might generate such a structure.

What about using the notion of causal chain to connect the souls in the cause–effect relationships? Can there be a causal chain between soul A's action and the change in soul A*, and between soul B's action and the change in soul B*? But do we have an understanding of such purely mental causal chains? What could such chains be like outside physical space? Hume required that a cause–effect pair of events that are spatiotemporally separated be connected by a causal chain of *spatially contiguous* events. It is difficult to imagine what kind of causal chain might be inserted between events involving two mental substances. Presumably we have to place a third soul, C, between soul A and soul A*, such that A's action causes a change in C which in turn causes the change in A*. But what could “between” mean here? What is it for an immaterial and nonspatial thing to be “between” two other immaterial and nonspatial things? In the physical case it is physical space that gives a sense to betweenness. In the mental case, what would serve the role that space serves in the physical case?

One might say: For C to be “between” A and A* in a sense relevant to present purposes is for A's action to cause a change in C and for this change to cause a change in A*. That is, betweenness is to be taken simply as causal betweenness. This of course is the idea of a causal chain, but it is clear that this idea does not give us an independent handle on the pairing problem. The reason is simple: it begs the question. Our original question was: How do we pair soul A's action with a change in soul A*? Now we have two pairing problems instead of one: First, we need to pair soul A's action with a change in a third soul, C, and then pair this change in C with the change in A*. This means that methods 1 and 2 above are not really independent. The very idea of a causal chain makes sense only if an appropriate notion of causation is already on hand, and this requires a prior solution to the pairing problem. This means that method 2 is the only thing we have.

We are, therefore, back with 2 – that is, with the question of what psychological relations might serve the role that spatial relations serve in the case of physical causation. The problem here is independent of the Humean constant conjunction view of causation, and therefore independent of the difficulty we raised for Loeb's defense of Descartes. For suppose that there is a “necessary,” counterfactual sustaining, regularity connecting properties F and G of immaterial mental substances. A mental substance, A has F at t , and at t^* , an instant later, two mental substances, B and C, acquire property G. I think we would like the following to be a possible situation: A's having F at t causes B to have G at t^* , but it does not cause C to have G at t^* . If so, there must be an intelligible account of why A acts on B but not on C, and such an account must be grounded in a certain

relation, a “pairing relation,” holding for A and B but not for A and C. What conceivable psychological or intentional relation, or system of such relations, could serve this purpose? I don't have a clue.

If these reflections are not entirely wrongheaded, our idea of causation requires that the causally connected items be situated in a spacelike framework. It has been widely believed, as we noted, that Cartesian dualism of two substances runs into insurmountable difficulties in explaining the possibility of causal relations across the two domains, mental-to-physical and physical-to-mental – especially the former. But what our considerations show is that there is an even deeper difficulty – substantial dualism is faced with difficulties even in explaining how mental-to-mental causation is possible, how two distinct Cartesian souls could be in causal commerce with each other. Perhaps Leibniz was wise to renounce all causal relations between individual substances, or monads – although I have no idea as to his actual reasons for this view. A purely Cartesian world seems like a pretty lonely place, inhabited by immaterial souls each of which is an island unto itself, totally isolated from all other souls. Even the actual world, if we are immaterial souls, would be a lonely place for us; each of us, as an immaterial entity, would be entirely cut off from anything else, whether physical or nonphysical, in our surroundings. Can you imagine an existence that is more solitary than an immaterial self?

IV. Causation and space

The fact, assuming this to be a fact, that the causal pairing problem for physical causation is solved only by invoking spatial relations tells us, I believe, something important about physical causation and the physical domain. By locating each and every physical item – object and event – in an all-encompassing coordinate system, this framework imposes a determinate relation on every pair of items in the physical domain. Causal structure of the physical domain, or our ability to impose a causal structure on it, presupposes this space–time framework. Causal relations must be selective and discriminating, in the sense that there can be two objects with identical intrinsic properties such that a third object causally acts on one of them but not the other (this can be stated for events as well), and, similarly, that there can be two intrinsically indiscernible objects such that one of them, but not the other, causally acts on a third object. If so, there must be a principled way of distinguishing the two intrinsically indiscernible objects in such causal situations, and it seems that spatial relations provide us with the principal means for doing this. Although this isn't the place to enter into detailed discussion, spatial relations have the right sorts of properties; for example, causal influences generally diminish as distance in space increases, and

various sorts of barriers can be set up in the right places in space to prevent or impede propagation of causal influences (though perhaps not gravity!). In general, causal relations between physical objects or events depend crucially on their spatiotemporal relations to each other; just think of the point of establishing alibis – “I wasn’t there,” if true, is sufficient for “I didn’t do it.” And the temporal order alone will not be sufficient to provide us with such a basis. We need a full space–time framework for this purpose. It wasn’t for nothing, after all, that Hume included “contiguity” in space and time, as well as constant conjunction, among his conditions for causal relations. From our present perspective, the contiguity condition can be seen as Hume’s response to the pairing problem.

If this is right, it gives us one plausible way of vindicating the critics of Descartes who, as we saw, argued that the radically diverse natures of mental and material substances preclude causal relations between them. It is of the essence of material substances that they have determinate positions in the space–time framework and that there is a determinate spatiotemporal relationship between each pair of them. Descartes of course talked of extendedness in space as the essence of matter, but we can broadly construe this to include other spatial properties and relations for material substances. Now consider the mental side: as I take it, the Cartesian doctrine has it that it is part of the souls’ essential nature that they are outside the spatial order and lack all spatial properties, though they do belong to the temporal order. And it is this essential nonspatiality that makes trouble for their participation in causal structures. What is interesting is that it isn’t just mind-to-body causation but also mind-to-mind causation that is put in jeopardy.

We have already seen how difficulties arise for mind-to-body and mind-to-mind causation. Unsurprisingly, body-to-mind causation fares no better. Let’s quickly run through this: Consider a physical object causally acting on a mental substance, causing it to have property *F* at time *t*. Suppose that there is another mental substance that comes to have *F* at *t*, but not as a causal result of the physical object’s action. How might the pairing problem be solved in this case? To solve it, we need to identify a relation *R* that holds between the physical object and the mental substance it causally affects but which does not hold between the physical object and the second mental substance. The only relation that can do this for physical objects is the spatial relation, but the very essence of a mental substance excludes it from any and all spatial relations. Moreover, given the fact that we could not devise a system of pairing relations for the domain of mental substances, it seems out of the question that we could generate a system that would work across the divide between the mental and material realms. If this is true, not even epiphenomenalism is an option for the substance dualist.

I am not claiming that these considerations are what motivated the anti-Cartesian argument that mind–body causal interaction is incoherent given the radically diverse natures of minds and bodies, or the absence of similarity or affinity between them. I am only suggesting that this may be one way to flesh out the critics’ worries and show that there is a real and concrete basis for these worries. Causal interaction is precluded between mental and material substances because of their diverse essential natures – more specifically, because of the essential spatiality of bodies and the essential nonspatiality of minds. Causality requires a pairing relation, and this diversity between minds and bodies does not permit such relations connecting minds and bodies. What the critics perhaps didn’t see was the possibility that essentially the same difficulty bedevils causal relations *within* the realm of the minds as well.

V. Can we locate souls in space?

These reflections might lead one to wonder whether it would help the cause of substance dualism if mental substances were at least given spatial locations, not as extended substances like material bodies but as extensionless geometric points. After all, Descartes spoke of the pineal gland as “the seat” of the soul, and it is easy to find passages in his writings that seem to give souls positions in space, although this probably was not part of his official doctrine. And most people who believe in souls, philosophers included, appear to think that our souls are in our bodies at least – my soul in my body, your soul in your body, and so on. But I would hazard the guess that this conviction is closely associated with the idea that my soul is in direct causal contact with my body and your soul with your body. The pineal gland is the seat of the soul for Descartes, as I take it, only because it is where unmediated mind–body causal interaction takes place. If all this is right, this confirms my speculation that mind–body causation generates pressure to somehow bring minds into space, which, for Descartes, is exclusively the realm of the matter.

In any case, putting souls into physical space may create more problems than it solves. For one thing, we need a principled way of locating each soul at a particular point in space. It is difficult to imagine how this can be done (why can’t we locate all the souls in the world in one place, say in this empty coffee mug on my desk, like the many angels on the head of a pin?). It would obviously beg the question to locate my soul where my body, or brain, is on the ground that my soul and my body are in direct causal interaction with each other. Second, if locating souls in space is to help with the pairing problem, it must be the case that no more than one soul can occupy any given spatial point; for otherwise spatial relations would not

suffice to uniquely identify each soul in relation to other souls in space. This is analogous to the so-called principle of “impenetrability of matter,” a principle whose point can be taken as the claim that space provides us with a criterion of individuation for material things. According to it, material objects occupying exactly the same spatial region are one and the same. What we need is a similar principle for souls, that is, a principle of “impenetrability of souls”: Two distinct souls cannot occupy exactly the same point in space. But if souls are subject to spatial exclusion, in addition to the fact that the exercise of their causal powers is constrained by spatial relations, why aren’t souls just material objects, albeit of a very special and strange kind? Moreover, there is a prior question: Why should we think that a principle of spatial exclusion applies to immaterial souls? To solve the pairing problem for souls by placing them in space requires such a principle, but that’s not a reason for thinking that the principle holds; we cannot wish it into being – we need independent reasons and evidence.

Moreover, if a soul, all of it, is at a geometric point, it is puzzling how it could have enough structure to account for all the marvelous causal work it is supposed to perform and explain the differences between souls in regard to their causal powers. You may say: A soul’s causal powers arise from its mental structure, and mental structure doesn’t take up space. But what is mental structure? What are its parts and how are the parts configured in a structure? If a soul’s mental structure is to account for its distinctive causal powers, then, given the pairing problem and the essentiality of spatial relations for causation, it is unclear how wholly nonspatial mental structure could give an explanation of a soul’s causal powers. To go on: If souls exclude each other for spatial occupancy, do souls exclude material bodies as well? If not, why not? It may be that one’s dualist commitments dictate certain answers to these questions. But that would hardly show they are the “true” answers. We shouldn’t do philosophy by first deciding what conclusions we want to prove, or what aims we want to realize, and then posit convenient entities and premises to get us where we want to go. When we think of the myriad problems and puzzles that arise from locating souls in physical space, it is difficult to escape the impression that whatever answers that might be offered would likely look ad hoc and fail to convince.

I have tried to explore considerations that seem to show that the causal relation indeed exerts a strong, perhaps irresistible, pressure toward a degree of homogeneity over its domain, and, moreover, that the kind of homogeneity it requires probably includes, at a minimum, spatiotemporality, which arguably entails physicality. The more we think about causation, the clearer becomes our realization that the possibility of causation between distinct objects depends on a shared spacelike coordinate system in which these

objects are located, a scheme that individuates objects by their “locations”. Are there such schemes other than the scheme of physical space? I don’t believe we know of any. This alone makes trouble for serious substance dualisms and dualist conceptions of personhood – unless, like Leibniz, you are prepared to give up causal relations substances altogether. Malebranche denied causal relations between all finite substances, reserving causal powers exclusively for God, the only genuine causal agent that there is. It is perhaps not surprising that among the dualists of his time, Descartes was the only major philosopher who chose to include minds as an integral part of the causal structure of the world. In defense of Descartes, we can ask: What would be the point of having souls as immaterial substances if they turn out to have no causal powers, not even powers to be affected by things around them? Before we castigate Descartes for his possibly unworkable metaphysics, we should applaud him for showing a healthy respect for common sense in his defense of mental causation and his insistence on making sense of our intuitive dualistic conception of what it is to be a person.

Notes

- 1 Margaret Wilson, ed., *The Essential Descartes* (New York: New American Library, 1969), 373.
- 2 Richard A. Watson, *The Downfall of Cartesianism 1673–1712* (The Hague: Martinus Nijhoff, 1966).
- 3 Anthony Kenny, *Descartes* (New York: Random House, 1968), 222–23.
- 4 Louis E. Loeb, *From Descartes to Hume* (Ithaca: Cornell University Press, 1981). See 134–49.
- 5 Anthony Kenny, trans. and ed., *Descartes’ Philosophical Letters* (Oxford: Oxford University Press, 1963), 210. I am rather dubious as to whether this passage supports Loeb’s Humean interpretation of Descartes, for Descartes is using here causal verbs, “impel” and “dispose,” to describe the regularities. But Loeb may well be right, and I am not in a position to challenge him on this point.
- 6 Does this exclude telekinesis? Yes. This probably is the main reason why there is something a priori strange about telekinesis. If telekinesis were a widespread everyday phenomenon, that might very well undermine the idea that each of us has a distinct body.
- 7 I first discussed this problem in “Causation, Nomic Subsumption, and the Concept of Event,” *Journal of Philosophy* 70 (1973): 217–36. I was prompted to reflect on the issues involved here by John Foster’s “Psychophysical Causal Relations,” *American Philosophical Quarterly* 5 (1968): 64–70.
- 8 This of course is the causal theory of perception. See H.P. Grice, “The Causal Theory of Perception,” *Proceedings of the Aristotelian Society*, supp. vol. 35 (1961).