

## PRIMITIVE CAUSAL RELATIONS AND THE PAIRING PROBLEM

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### *Abstract*

There is no doubt that spatial relations aid us in pairing up causes and effects. But when we consider the possibility of qualitatively indiscernible things, it might seem that spatial relations are more than a mere aid – they might seem positively required. The belief that spatial relations are required for causal relations is behind an important objection to Cartesian Dualism, the *pairing problem*. I argue that the Cartesian can answer this objection by appeal to the possibility of primitive causal relations, a possibility I defend. This topic is of importance beyond the philosophy of mind; the possibility that causal relations might sometimes hold brutally is of general metaphysical importance. I close with a discussion of what Cartesians should say about embodiment, and how that bears on issues of mental causation.

### 1. Introduction

Opponents of Cartesian forms of dualism often reject it because they doubt that dualism can adequately account for causal interaction across the mental-physical divide. The *pairing problem* appears to show that part of the explanation of why any given thing stands in the causal relations it does will be that it stands in certain spatial relations to its causes and effects. Since Cartesian dualism denies that mental substances enter into spatial relations, Cartesians are at pains to deny this. This problem has been around in its current form for decades, but has been given new vigor in recent work by Jaegwon Kim.<sup>1</sup>

<sup>1</sup> Jaegwon Kim, 'Lonely Souls: Causation and Substance Dualism' in Kevin Corcoran, ed., *Soul, Body, and Survival: Essay on the Metaphysics of Human Persons* (Ithaca: Cornell University Press, 2001), pp. 30–43; *Physicalism, Or Something Near Enough* (Princeton: Princeton University Press, 2005). The pairing problem is first discussed in John Foster 'Psychophysical Causal Relations', *American Philosophical Quarterly* 5 (1968), pp. 64–70, and is also discussed in his *The Immaterial Self* (London: Routledge, 1991). Another version of the

For our purposes, let Cartesian dualism be simply the conjunction of two doctrines:

- (1) Minds are non-physical substances that have no spatial locations and stand in no spatial relations.
- (2) Minds are capable of causally interacting with physical substances.

This is far too simple to capture Descartes' own specific brand of dualism, but these are the tenets needed to get the pairing problem off the ground.

Two things causally interact provided one is a cause of the other. Thus, causal interaction is a symmetrical relation, even though causation is not. I will often speak of substances as causally interacting. This need not be taken at face value; those who favor the view that only events are properly causes and effects can regard this as an abbreviated way to say that some event, of which the substance is a constituent, is a cause (or effect) of something. (I assume that an event is something like a particular substance's coming to have or lose a property at some time.) I stay neutral about whether or not substances can be causes or effects strictly speaking.

According to the pairing problem, spatial relations are needed in order to pair causes with their effects. In particular, there appear to be cases in which the explanation of why a substance causally interacts with what it does (and not with other, competing would-be causes or effects) essentially involves the spatial relations between that substance and its causes and effects. Such cases involve two things that are too qualitatively similar for their causal relations to diverge on the basis of any qualitative property.<sup>2</sup> Suppose there occur two qualitatively indistinguishable rock-throwings. Why did only one cause the window to shatter? Because only one bore the right spatial relation to the window; only one was a throwing *toward* the window.

When such cases arise concerning Cartesian mental substances, no spatial relation is available to distinguish one mental substance

problem is presented, for a different purpose, by Michael Tooley, 'Causation: Reductionism Versus Realism', *Philosophy and Phenomenological Research* 50 (1990), pp. 215–36.

<sup>2</sup> I will not offer an account of qualitative properties, but for now let's assume that they include all intrinsic properties and no spatiotemporal relations. Ultimately, what counts as a property and what counts as a qualitative one will have to be refined. For example, if self-identity is a property, then it is non-qualitative even though it is intrinsic.

as the unique cause of the effect, given (1). Therefore, say opponents, the two Cartesian principles are ultimately incompatible, because causal relations require spatial ones. Cartesian dualism then appears incoherent.

My aim is to find a way for the Cartesian to keep both principles. I will give reason to doubt that such a pairing relation exists in all cases of causal interaction, even among physical things, and reason to doubt that the presence of a pairing relation is a meta-physical precondition of causation. I will argue that the pairing problem arises for causation between physical substances as well as mental substances (taking off from work by John Foster and Michael Tooley), and that a certain independently plausible view of causation circumvents the problem.<sup>3</sup>

Now, the possibility of primitive singular causal relations is not the only thing a Cartesian dualist needs to make sense of mental causation. If dualism is to be adequate, mental substances must be capable of causally interacting with physical substances not in just any old way, but in the way we take our minds actually to interact with our bodies. This includes, among other things, the intimate – and unique – association each of us has with a particular body. A Cartesian dualist thus needs to say something about embodiment. I will assume that mental causation is needed to explain embodiment.<sup>4</sup> Yet, I suggest, it is contingent that body and mind interact. This is significant because, if correct, it shows that Cartesians (those who accept (1) and (2) above) are not committed to believing that every world containing a mind is a world containing mental-physical causal interaction. Certain objections to Cartesian dualism are therefore ill-posed.

## 2. The Pairing Problem

The pairing problem for Cartesian mental substances can be encapsulated in the following argument. (From now on I shall suppress the qualification ‘Cartesian’ since the topic throughout is Cartesian dualism, and the nature of substances according to that view.)

<sup>3</sup> Foster, ‘Psychophysical Causal Relations’, and Tooley, ‘Causation: Reductionism versus Realism’. That this strategy of solution is open to the dualist is shown by Karen Bennett, ‘Mental Causation’, *Philosophy Compass* 2 (2007), pp. 316–337.

<sup>4</sup> *Pace* Foster, *The Immaterial Self*, who takes the nature of embodiment to explain the possibility of mental causation.

- (P1) If two things interact causally, they instantiate a pairing relation.
- (P2) Pairing relations are always spatial relations.
- (P3) If there are mental substances, they do not enter into spatial relations.
- (C1) Therefore, if there are mental substances, they do not stand in pairing relations.
- (C2) Therefore, if there are mental substances, they do not causally interact with anything.<sup>5</sup>

The conclusion of this argument, (C2), contradicts dualist principle (2). Since (P3) derives from (1), this is effectively a *reductio* of Cartesian dualism.

Now, Kim, for one, intends the argument to have a wider impact than that. He recognizes that one could, in principle, reject either (1) or (2) in order to halt the *reductio*, while remaining some sort of dualist. But he regards the prospects for such views as quite dim. To deny (1) commits one to locating minds in space, and raises troubling questions. Where exactly are minds, and what are their spatial dimensions? Do they compete for the space they occupy, with each other or with physical things? If so, why are they still to be regarded as non-physical? (Extension and impenetrability belong to all and only physical substances, according to Descartes.) To deny (2) commits one to some kind of epiphenomenalism. Souls cannot causally interact; how lonely is the life of the soul! Kim can be seen as arguing that only a Cartesian dualism is even provisionally acceptable. Thus its failure, according to him, is the failure of dualism full stop. Whether or not this is correct, my aim here is to defend the Cartesian, and so I will not consider the plausibility of rejecting (1) or (2).

Before moving on, two presuppositions of the argument require mention. The first is the possibility of *qualitatively indiscernible* things. Let 'x is exactly qualitatively similar to y' mean that for any qualitative property, P, x has P just in case y has P. Causes are always paired in a unique way with their effects, but it is only in cases of qualitatively indiscernible subjects that the demand for

<sup>5</sup> As Kim has pointed out in 'Lonely Souls' and elsewhere, the pairing problem makes trouble not only for mental-physical causal interaction, but also for mental-mental causal interaction.

a non-qualitative basis for pairing is irresistible, simply because there is *ex hypothesi* no qualitative difference on which causal differences could rest. I will assume, with Kim and others, that qualitatively indiscernible substances, both physical and mental, are possible.

Second, the pairing problem arises only if causal relations cannot themselves be pairing relations. Otherwise, (P1) is trivial, and could not non-question-beggingly be used to raise a problem for non-spatial substances. Another way of putting the point is that the pairing problem seems motivated by the presupposition that two things cannot *brutely* stand in a causal relation. Some non-causal relation must play a role in explaining why they stand in a causal relation with each other, and not with other potential causes and effects. (My strategy will be to show why even non-dualists have reason to reject this presupposition.)

Now, here is how spatial relations appear to solve the pairing problem for physical things. Take two pellets, qualitatively exactly similar to one another, traveling at the same velocity. One shatters a window, and the other does not. This causal difference cannot be explained by differences in their mass or density or shape, for these are qualitative properties that they share. One way to account for the causal difference is perfectly obvious: one pellet followed a path that intersected the surface of the window, and the other did not. This is a purely spatial difference between them, not a qualitative difference, so despite the fact that this is a case of qualitatively indiscernible subjects, there is an account of why just one of these pellets is paired up with the window's shattering as its cause.

Now consider a trickier case of qualitatively indiscernible subjects, one involving non-spatial mental substances. Suppose two Cartesian minds, those of Ron and Von, are synchronized so that at any given time, each is having exactly the same experiences, intentional states, and so on.<sup>6</sup> Thus, we have a case of qualitatively indiscernible subjects in which the subjects are minds. Ron and Von are each fortunate enough to be embodied (separately). Given their synchronization, it is no surprise that, at the very same moment, each wills his arm to rise. The problem should now

<sup>6</sup> For now, suppress worries about whether they share broad content as well as narrow content.

come into focus. What makes it the case that Ron's volition causes his own arm to rise, while Von's volition did not cause Ron's arm to rise?<sup>7</sup>

Beware of a slippery attempt to evade the problem. Whether or not one is a dualist, one might think that the best account of embodiment open to the dualist includes the idea that:

- (3) If *S* can causally interact with *b* just by willing to do so, then *b* is a part of *S*'s body.

At a glance, this might appear to justify the following response to the pairing problem: There is no need for a pairing relation to hook Ron up to his arm and not to Von's. *Whatever* arm Ron causes to move by his intention is automatically Ron's arm according (3).

But this will not do. (3) may settle questions about whether some physical thing that *S* can immediately causally influence counts as part of *S*'s body, but it does not explain how *S* can causally interact with that physical thing in the first place. The question provoked by the pairing problem is not which of two things Ron can potentially affect counts as part of his body. The question, rather, is how a non-spatial mental substance can causally interact with anything in the first place. So the appeal to (3) wins no ground for the dualist. It does, however, raise interesting issues about embodiment, which I discuss below.

### 3. Against the Demand for a Pairing Relation

How are dualists to deal with the pairing problem? In this section, I will answer the question in two stages. First, I will show that the pairing problem arises for physical things as well as mental ones. This takes some pressure off the dualist; the pairing problem is not a problem *with dualism*, but a problem about the nature of causation in general. Even so, it is still a problem. That brings me to the second stage, namely, to show how a certain independently plausible view of causation circumvents the problem.

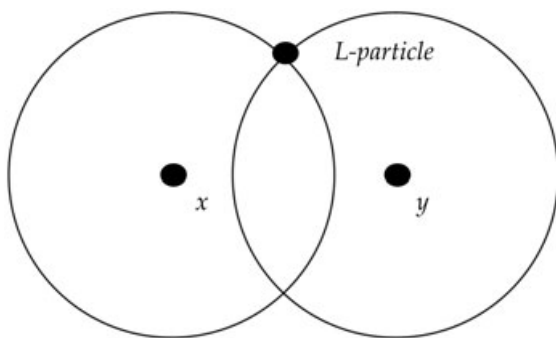
<sup>7</sup> Let 'volition' be a placeholder. The precise nature of the mental causes of intentional action need not concern us here.

In what sorts of cases might the pairing problem arise for physical things? Suppose two physical things are not only qualitatively indiscernible but such that none of the spatial differences between them can explain why one but not the other has a certain effect. That would be a case where the fact that the causes are spatially located physical things places them at no advantage with respect to the pairing problem.

Here is one example of such a case.<sup>8</sup> Suppose it is a law of nature that when a particle of a certain kind, a *K*-particle, comes to have a certain property, *P*, it has a certain probability (say .6) of generating a new particle, an *L*-particle, a certain distance from itself. Now suppose there are two qualitatively indiscernible *K*-particles, *x* and *y*, fairly near one another, and at the same moment, both come to have *P*. There are, suppose, two points equidistant from *x* and *y* (each the requisite distance for *L*-particle generation), and an *L*-particle appears at one of these points. (See fig. 1.) Did *x* cause it to appear, or did *y*? There ought to be a fact of the matter as to which generated the *L*-particle (or that neither did, or that both did), and yet no spatial relationship *x* bears to the *L*-particle can distinguish *x*'s causal potential toward it from *y*'s. The only relevant spatial relation between *x* and the effect is distance, and *y* is the same distance from the effect as *x*.

Space, then, does less to confer structure on physical events than defenders of the pairing argument are inclined to think. It does not, as Kim seems to have assumed, insure that any two items

Figure 1



<sup>8</sup> The origin of this sort of example is Foster, 'Psychophysical Causal Relations'.

be uniquely spatially related.<sup>9</sup> It is not impossible for two things to have exactly the same pure spatial relations to all other particulars, let alone all those with which they causally interact.<sup>10</sup> Imagine, for example, the case in which only these three particles exist.<sup>11</sup>

Now, if absolutism about space is true, then in the above example, each *K*-particle has a different *location* on the coordinate system. Thus, it is open to absolutists to deny that any two items stand in exactly the same purely spatial relations to the same things. But even if absolutism is true, it is not plausible to appeal to it as a ground of causal differences. It is implausible to think that things causally interact in a certain way because they are 2m apart *here* rather than *there*. Since the *K*-particles in our example share all their spatial *relations* to the *L*-particle, we still lack any ground of a causal difference between them.

Jonathan Schaffer has argued that the lesson of such cases is not that there can be brute singular causal relations, but rather that in any such case both antecedent factors will count as causes.<sup>12</sup> What ontological difference, he demands, could it make to say that one rather than the other (or both) was the cause? The events of the world will unfold the same way in either case. (Note that it is only on the assumption that causal singularism is false that it is plausible to deny that there is an ontological difference between the three apparently different possibilities.) Schaffer denies, then, that the case as described is possible. It is, he argues, impossible for two qualitatively indiscernible things to diverge in what they cause. This follows from the view that causal relations at a world supervene on the qualitative facts and laws of that world.

Schaffer's reasoning shows at most that singularism – the view that there may be primitive singular causal relations – is not incumbent on us. But it does not show that it is an incoherent

<sup>9</sup> See Kim, *Physicalism, Or Something Near Enough*, p. 85.

<sup>10</sup> Pure relations are things like *ten meters from a 20kg iron plate* (or *being ten meters . . .*). They are essentially qualitative and non-indexical. Impure relations contain some indexicality or reference to particulars essentially, e.g., *ten meters from Saul Kripke*.

<sup>11</sup> In such a world, the two *K*-particles do not differ in *any* pure relations, let alone any causally relevant ones. Cf. Michael Tooley, 'Causation and Supervenience', in Michael Loux and Dean Zimmerman (eds.), *The Oxford Handbook of Metaphysics* (Oxford: Oxford University Press, 2003), pp. 386–434.

<sup>12</sup> Jonathan Schaffer, 'Causation and Laws of Nature: Reductionism', in Theodore Sider, John Hawthorne, and Dean Zimmerman (eds.), *Contemporary Debates in Metaphysics* (Oxford: Blackwell, 2008), pp. 82–107.



view. And even though the example does not force one to accept singularism, it provides a strong case for it. Those who deny that the case as described is possible (but accept the possibility of particles and laws of this kind) must be willing to say that there are certain circumstances in which the causal activities of two different things could not *possibly* fail to diverge, despite the fact that the laws entail a non-zero probability of their divergence. A remark of Schaffer's lends credence to this idea, namely, that causation might be taken to be something like probability-raising, together with the actual occurrence of the events whose probability is raised. Probability, moreover, will have to be understood along the lines of propensity rather than frequency, in order for it to be coherent that something never occur despite its non-zero probability of occurring.<sup>13</sup> Again, Schaffer's ideas are coherent (and indeed ingenious), but they are controversial and, in my view, no more plausible than singularism. Furthermore, it is sufficient for current purposes to show that singularism is a coherent account of causation, and one that enjoys some support. For if the pairing problem depends on denying a coherent account of causation, it can hardly be thought to show that the notion of a causally active non-spatial substance is incoherent.

The dualist cannot stop here. The fact that the pairing problem arises for physical things, despite their spatial locations and relations, may show that it is not only dualists who face this problem, but that does not solve it. There are two basic approaches to solution one could take. The first is to find some non-spatial pairing relation. The second is to show that no such pairing relation is needed. I will pursue the second.<sup>14</sup>

Recall how the pairing argument began:

- (P1) If two things interact causally, they instantiate a pairing relation.
- (P2) Pairing relations are always spatial relations.

We have seen that things can exhibit causal differences without spatial differences. Yet pairing relations – if they exist at all – had better never be the same in the face of causal differences. So we

<sup>13</sup> It is not clear to me that even this will show Schaffer's purported solution to be coherent, since that solution seems to entail that something with a non-zero probability of occurring is *impossible*, not merely that it never occurs in fact.

<sup>14</sup> For discussion of non-spatial pairing relations, see Foster, *The Immaterial Self*.

have reason to reject at least one of these premises. Now, the pairing argument presupposes that

- (4) Pairing relations are never themselves causal relations.

This is one of the main ideas driving the problem: something other than causal relations themselves must explain the causal differences between things. This requirement can be framed as:

- (5) Necessarily, if two things have different causes or effects, they differ either in their qualitative properties or in some relevant non-causal relation.

But why think this? Why think that causal relations are always explainable in terms of non-causal ones?

According to Tooley, a slightly different kind of pairing problem is reason to think that singular causal facts may hold primitively – which is, of course, precisely to deny that the holding of a given causal relation is always explainable in terms of some non-causal relation between cause and effect.<sup>15</sup> The example Tooley provides is not a case of qualitatively indiscernible subjects, but one in which the properties of a single object are the subjects of certain causal relations. Here is a simplified version of his case. Suppose the following are two laws of nature:

- (6) For any object  $x$ , having property  $P$  causes  $x$  to instantiate  $R$  or causes  $x$  to instantiate  $S$ , never both.  
 (7) For any object  $x$ , having property  $Q$  causes  $x$  to instantiate  $R$  or causes  $x$  to instantiate  $S$ , never both.

Suppose further that (6) and (7) are basic laws. So nothing explains why (6) and (7) hold, and more importantly, when something's having  $P$  causes it to have  $R$  rather than  $S$ , nothing explains why. That's just the way worlds with laws (6) and (7) work. Having  $P$  (like having  $Q$ ) causes things to have just one of  $R$  or  $S$ , and no other facts about the things that have  $P$ , or their surroundings, explain why they come to have one property rather than the

<sup>15</sup> The example is discussed in Tooley's 'Causation: Reductionism Versus Realism' and 'Causation and Supervenience'.

other. So  $P$  determines (as does  $Q$ ) that a certain disjunction of states of affairs will obtain, but it is indeterministic which disjunct will obtain.<sup>16</sup>

Now suppose some object,  $a$ , comes to have  $P$  and  $Q$ , and goes on to become  $R$  and  $S$ . One of two incompatible states of affairs obtains:

*Case 1:*  $a$ 's being  $P$  caused it to be  $R$  while  $a$ 's being  $Q$  caused it to be  $S$ .

*Case 2:*  $a$ 's being  $P$  caused it to be  $S$  while  $a$ 's being  $Q$  caused it to be  $R$ .

Which is it? Laws (6) and (7) preclude either  $P$  or  $Q$  from causing both further property instantiations, and so we must pair the properties off:  $a$ 's being  $P$  caused it to have one further property, and its being  $Q$  caused it to have the other.

According to Tooley, this case shows that singular causal relations can hold primitively. Now, Case 1 and Case 2 plainly represent different possibilities, in particular, different possibilities for which pairs instantiate singular causal relations.<sup>17</sup> Yet neither the laws nor the distributions of properties across particulars can determine which case obtains. So we have a strong reason to regard the relevant singular causal facts as primitive.

Whether or not this example successfully shows that singular causal relations can hold primitively, it is clear that primitive causal relations provide for the dualist an avenue of escape from the pairing argument. If one accepts singular causal relations as primitive, one is in a position to deny its first premise. The pairing problem therefore does not show that dualist interaction is incoherent, but at most that dualists must treat some singular causal facts as primitive.

Of course, there could be other reasons for taking spatial relations to be required for causal interaction. Maybe causation

<sup>16</sup> Let us suppose, further, that the four properties pervade the whole region of space  $a$  occupies, so that there are no spatial differences between those properties of  $a$ . Arguably, not all properties are like this (e.g., smoothness, which is a property only of surfaces), but some seem to be (e.g., solidity).

<sup>17</sup> Schaffer would likely object that there could not be such laws, laws containing the 'never both' clause. He would diagnose the case as one in which  $a$ 's being  $P$  as well as its being  $Q$  each caused  $a$  to be both  $R$  and  $S$ . But apart from reductionism about causation, I see little reason to think such laws are impossible. We should believe in such a law if we find that objects with  $P$ , when tested in a sufficient variety of circumstances, always come to have just one of  $R$  or  $S$ .

requires spatial relations because spatial relations are required for contiguity or the transfer of energy. I cannot give these ideas due scrutiny here. Briefly, here are reasons to doubt them. Contiguity would rule out the possibility of causation at a distance, which according to some interpretations of current physics actually occurs, and which in any case seems possible. Transfer of energy, on the other hand, does not seem to take place in every case of causation. Consider the opening of a faucet. This causes the water to flow out of the pipe. But it imparts no energy to the flowing water, which flows because of antecedent pressure.<sup>18</sup> Opening the faucet merely removes a condition that had been preventing the water from flowing.

We must be careful to sift through what is demanded by the concept of causation and what is motivated by physicalist bias. Pre-theoretically, is the idea of a causal succession of two of my thoughts any less paradigmatic of causation than the idea of a causal succession of billiard balls? Pre-theoretically, does the former require spatial relations in anything like the way the latter does? If the answers are *No*, then we must take seriously the idea that causation does not demand a spatial relationship from its relata.

Finally, notice that a main motivation behind the pairing problem is to give an account of *why* causal relations require spatial relations. The pairing problem cannot do that, since it arises even in cases that involve only spatially located causes and effects. Maybe something else can, but that remains to be seen.

#### 4. Embodiment

Now, one might think a version of the pairing problem remains unsolved. In particular, there is an apparent conflict between the possibility of qualitatively indiscernible minds and what seems be true, actually, about our control of our bodies.

It seems a plain fact that I have a single body that I alone control, and that the same is true of almost everyone.<sup>19</sup> Thus, if dualism is to make sense, different mental substances must be

<sup>18</sup> I thank Andrew Newman for this example.

<sup>19</sup> A suitably qualified expression of this idea might extend even to people who are severely paralyzed.

capable of moving different bodies. That is to say, it must be possible for a given mind to have a unique body with which it interacts in a privileged way. This idea has two components:

*Uniqueness:* It is possible for a given mind, throughout its career, to interact with just one body.<sup>20</sup>

*Privilege:* It is possible for a given mind, throughout its career, to be the only mind that can directly causally influence a certain body.

The force of the ‘possible’ here is not metaphysical possibility, but a different, fairly commonplace modality. I am thinking of the ‘can’ in ‘I can move my arm when I want to’. It is not sufficient for this to be true that there be any old world in which I want to move my arm and do. And it is not necessary for this to be true that I move my arm in every possible world in which I want to (i.e., that there are no worlds in which I am paralyzed but want to move my arm), nor is it necessary that I move my arm every time I actually intend to (i.e., that I never sleep on an arm and wake up unable to move it for a minute or two). To say that I can move my arm when I want to, in this ordinary sense of ‘can’, is to say that I have fairly stable control over the movement of my arm, control that isn’t too modally fragile, as it were. Most of the time, when I actually form an intention to move my arm, I do. And in most cases in nearby worlds in which I form that intention, I move my arm. I do not say this is an easily analyzed modality, but it is one we would be hard pressed to do without.

A dualist need not take Uniqueness and Privilege to be necessary truths. Not every world with Cartesian minds needs to be one in which agents have such stable or exclusive control over their bodies. But *we* do, so Uniqueness and Privilege are at least contingently true.

The pairing problem threatens the very possibility of both Uniqueness and Privilege. Recall this principle:

- (5) Necessarily, if  $x$  and  $y$  have different causes or effects, they differ either in their qualitative properties or in some relevant circumstance.

<sup>20</sup> The notion of body at work includes the condition that a body be a fairly spatially continuous packet of matter. (3) does not include this condition. (3) simply entails that any bit of matter that a mind can immediately causally influence is part of that mind’s body, no matter where it is in relation to other bits of matter that mind can influence.

Uniqueness and Privilege demand the possibility of differences in causal powers between minds, specifically, the powers they have with respect to particular bodies. When two minds are qualitatively indiscernible, the difference must be circumstantial. And the pairing problem is the problem of saying what circumstantial difference could possibly account for such a difference. According to Kim, when an analogous question is asked of physical things, spatial differences are available to account for causal differences. But that is precisely what dualism denies to be available in the case of mental things. As such, if the pairing argument were to succeed, so that (5) were true, dualists would face a dilemma. Either

- (a) Each mind causes both arms to rise, or
- (b) Neither mind causes either arm to rise.

In both cases, Uniqueness and Privilege fail.

This is why it is important to note that Uniqueness and Privilege are contingent truths. If they were necessary, (a) and (b) would be impossible. What is more, if (a) and (b) were impossible, then treating singular causal facts as primitive would be no help to the dualist. For (a) and (b) simply represent two different ways the singular causal facts could lie with respect to four particulars. If such facts can hold primitively, then surely both (a) and (b) are possible.

I, however, see no reason to deny that (a) and (b) are possible. They are merely false (that is, we have no reason to think situations corresponding to either example obtain). By the same token, I see no reason to think Uniqueness and Privilege are necessary. Why think it *necessary* that each of us be the sole controller of some discrete body?<sup>21</sup> Our level of voluntary control over our bodies could be worse, or better, than it is in fact. I think it is commonly acknowledged that Cartesian dualism entails the possibility of *disembodiment*. One way for (b) to be true is for neither mind to have a body at all. As for (a), if Ron and Von are psychologically synchronized, then if they are hooked up to the world in

<sup>21</sup> Suppose, e.g., that God exists and is omnipotent in a very strong sense. God not only has the power to do anything, but has the power to do anything *as a basic action*, i.e., just by willing it. (4) then rules everything a part of God's body, including things that are parts of our bodies. This strikes me as genuinely possible.

the same way, they have the same intentions.<sup>22</sup> So why shouldn't they overdetermine certain actions?

Now, importantly, we have no reason to think that there are qualitatively indiscernible minds in our world. But even if there were, there would remain a way for Uniqueness and Privilege to hold. For as we have seen, two things can be qualitatively indistinguishable without having exactly the same causes and effects. So, to take the simplest cases, there could be worlds whose only inhabitants are two qualitatively indistinguishable minds,  $m_1$  and  $m_2$ , and two qualitatively indistinguishable bodies,  $b_1$  and  $b_2$ . Such worlds could be arranged a number of different ways. Two of them correspond to (a) and (b) above, namely,  $w_a$ , the world in which both bodies are moved by both minds and  $w_b$ , the world in which neither is moved by either mind. Uniqueness and Privilege fail in  $w_a$  and  $w_b$ . But they hold in two other worlds:  $w_c$ , in which  $m_1$  is causally hooked up exclusively to  $b_1$  and  $m_2$  is causally hooked up exclusively to  $b_2$ , as well as  $w_d$ , the world in which  $m_1$  is causally hooked up exclusively to  $b_2$  and  $m_2$  is causally hooked up exclusively to  $b_1$ .<sup>23</sup> Again, our best evidence is that our world does not contain states of affairs like these because it does not contain any qualitatively indiscernible minds (or, for that matter, bodies). But the important point is that such cases are genuinely possible, and so dualism is not to be faulted for being committed to their possibility.

Now, one might worry that the very possibility of such cases would give way to rampant skepticism, for one might think we are in no position to verify that there are no pairs of qualitatively indiscernible minds. We must be careful here. While it may be true that things would seem to me just as they are if there were another mind qualitatively indiscernible from mine (systematically overdetermining my bodily movements), this does not constitute not a reason for skepticism. I cannot offer an account of why not, but notice that much more than dualism is at stake if we hold that we cannot be justified in believing something when things would seem just the same if it were false. Familiarly, that would impale, at least, all of our perceptual knowledge.

<sup>22</sup> Their psychological synchronization insures that no difference in narrow content would distinguish their intentions. Their being hooked up to the external world in the same way insures that no difference in broad content would distinguish their intentions.

<sup>23</sup> There are also worlds where a given mind interacts with different bodies at different times. Again, we have reason to doubt that our world is among them.

Whatever the metaphysics of persons, it is surely the case that most of us do have reasonably spatially continuous bodies that we alone can move immediately through our volitions. So if dualism is true, Uniqueness and Privilege are actually true, even if contingently true. Treating singular causal facts as primitive does provide an account of how that would go. Worlds in which Uniqueness and Privilege hold are worlds in which singular causal relations between minds and bodies fall among minds and bodies in favorable ways. Our world didn't *have* to be that way, but we have no reason to doubt that it is.<sup>24</sup>

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