



### Chapter 3

#### Why Is the Problem of Interaction a Problem?

Why is the problem of interaction between an immaterial mind and a material body a problem? From the materialist point of view, the problem is spurious, for the mind is ontologically reducible to the brain.<sup>1</sup> In the light of materialistic reductionism, the mind-body problem would not be posed in terms of the interaction between two distinct substances, much less between an immaterial and a material substances. Of course, materialists may not object to the use of the term "mind" to refer to the qualitative aspect of brain states and processes, and they may not even want to eliminate causal relations between the mental and the physical, provided that by mental is meant nothing more than brain states and processes, but when it comes right down to the matter of ontology, materialists of all stripes would not tolerate the idea of an immaterial mind. Even when some materialists acknowledge that consciousness consists in higher-level

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<sup>1</sup>David Armstrong provides a very concise statement: "...the mind is simply the central nervous system, or, less accurately but more epigrammatically, the mind is simply the brain." David Armstrong, A Materialist Theory of Mind (Routledge & Kegan Paul, 1968). p. 73.

or emergent properties of the neurophysiological system which is the brain, such properties being phenomenologically irreducible, which means that their descriptions cannot be completely translated in a physicalist vocabulary, these same people would not endorse the prospect of an immaterial mind.<sup>2</sup>

Although no discussion of Materialist theories of mind is intended, it is worthwhile to pause briefly to try to locate just where materialists find most objectionable about Substance Dualism. First, materialists can find room in their various theories to accommodate the mind-body problem taken in the ontological sense. For example, an ontological materialistic mind-body problem might be posed with a view to understanding the neurophysiological status of the mental,

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<sup>2</sup>An example of a materialist position which acknowledges the irreducible aspect of the mind: "What I want to insist on, ceaselessly, is that one can accept the obvious facts of physics--for example, that the world is made up entirely of physical particles in fields of forces-- without at the same time denying the obvious facts about our own experiences--for example, that we are all conscious and that our conscious states have quite irreducible phenomenological properties." John R. Searle, The Rediscovery of the Mind (The MIT Press, Massachusetts, 1992), p. 28.

such as beliefs and desires and their causal relations to other parts of the human body. So as far as the problem itself is concerned, an ontological mind-body problem has a place in Materialist theories of mind. If the mind-body problem in the general sense is not objectionable, we must look at Substance Dualism in particular. The key terms in this theory are substance, dualism, an immaterial mind, a material body, and interaction (between an immaterial mind and a material body). Having extracted these terms from Substance Dualism, let us consider why each key term may be unacceptable to a materialist.

According to materialism, there is nothing wrong with invoking the term "mind" as long as the mind is thought of in terms of the physical brain. The material mind and the material body are on a par but each must be described using jargons appropriate to the kind of physical system to which it belongs. In this sense, it is also proper to think of both the material mind and the material body as material substances which are ultimately reducible to common underlying entities. The use of the term "substance" acceptable to materialists seems to comprise two meanings: 1) concrete objects and 2) sub-atomic particles which are the physical constituents of matter.<sup>3</sup> Moreover,

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<sup>3</sup>The two meanings seems to contradict each other, for definitely sub-atomic particles are not concrete objects as exemplified by tables and chairs. But, and this is a quantum paradox, if tables and chairs are built up from the configurations of sub-atomic particles, how can something concrete be composed of something less than concrete.

since the term "mind" can be harmlessly translated as "brain", given, of course, the understanding that "mind" signifies a set of emergent properties which are irreducibly phenomenological but are nevertheless physically-based, it seems equally harmless for those materialists who champion emergent properties to hold a dualistic view concerning the mind and the body. It is also plausible in the context in which consciousness is understood in terms of emergence to include mind-body interaction into this type of materialistic dualism.

It seems, then, that as far as each individual key term is concerned, a materialist would only object to the idea of the immaterial mind or an immaterial substance which constitutes the mind. Without having to go through the whole argument about what things are real or substantial and what are unreal or unsubstantial,<sup>4</sup>

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<sup>4</sup>For example, we can begin with some elementary argument along this line: "Consider the following claims:

Alice's smile is enchanting (meaningful, sinister).

John has a nasty habit of smoking in bed.

Alice has a bad cold.

John has a fine voice.

There are many miles between the camp and the summit. In appropriate contexts, such statements are true. This may encourage the idea that the world contains such "things" as smiles, voices, miles, head colds, and bad habits. We might grant this much and still

it seems reasonable to say that there seems to be nothing inconsistent about the juxtaposition of "immaterial" and "substance" or "immaterial" and "mind". In other words, the syntax of "immaterial substance" appears meaningful, and so it seems that if the materialist is also rejecting this keyterm, he cannot just simply assume he can attach no sense to it. But if he is not making the claim that "immaterial mind" is non-sensical, then he must provide reasons to ground his rejection and this word legitimize the problem of Substance Dualism. For indeed it seems like a genuine philosophical problem which has too often been glossed over with a few terse statements avowing that the mind is nothing but the brain. Although the mind may not be nothing over and above the neurophysiological system called "brain", together with its attendant states and processes, it is in essence nothing but the brain. This is why the problem of interaction between an immaterial mind and a material body is spurious in the materialist context. The quick dismissal of the problem is encouraged

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deny that smiles and miles are substances... we may deny that miles and smiles are substantial things--substances--without denying that there really are such things as miles and smiles. So doing, we might hold that while it is true that all substances are material, many things are perfectly real (many things that exist) are not material substances." William R. Carter, The Elements of Metaphysics (McGraw-Hill, New York, 1990), p.48.

by the purported findings of science. However, whether the findings of science support the materialist view that the interaction problem is spurious is in itself an unsettled question. It seems more likely that actual findings of science point to no such view.

In fact, there has been no scientific experiment which disproves Substance Dualism. Admittedly, perhaps this is because no experiment has ever been designed to do so, if ever one could be designed. But just because scientists have never designed such an experiment, it does not mean that philosophers can be just as prejudicial. But the fact that Substance Dualism has now fallen into disrepute seems to suggest such a prejudice. If any one assumption can be pin-pointed as the underlying cause of the outright dismissal of the immaterial mind, it would seem to be the empiricist premiss that something is worth pursuing if it is at least measurable in principle. The disinterest in the immaterial mind takes a derisive turn when it is compared to "phlogiston" and "the ether". Of course, these two hypothetical entities have been debunked by scientific experiments.<sup>5</sup> But it

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<sup>5</sup>Debunked hypothetical entities have a way of continuing their existence in people's habit. We still use the phrase "force of gravity" even when Einstein had already done away with that force, replacing it with a more elegant, accurate, but abstruse notion of the curvature of space-time. Physicists may even allow "force of gravity" into their conversation while translating it conceptually

is just plain callousness which suggests that the immateriality of the mind is comparable to the non-existence of phlogiston and the ether. For while the two obsolete entities are beyond detection, our own mind are phenomenologically inseparable from us, and their immateriality is not a matter than can be conclusively settled a priori.

As a genuine problem, the question about the interaction between an immaterial mind and a material mind can be understood in terms of Princess Elizabeth's doubt, expressed in her letter to Descartes, as to how something that is immaterial can ever come into contact with a material thing and causally influence it:

I beg of you to tell me how the human soul can determine the movement of the animal spirits in the body so as to perform voluntary acts...For the determination of movement seems always to come about from the moving body's being propelled--to depend on the kind of impulse it gets from

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into Einstein's notion. Moreover, it may be said that the process of debunking itself is subject to conventions. For example, it is mathematically possible to retain the concept of the ether if an additional assumption is appended which allows the measuring device to contract as the earth plows against the ether. This additional assumption became undesirable not as a matter of mathematics but rather for an aesthetic reason concerning elegance.

what sets it in motion. . .and contact seems to me in compatible with a thing's being immaterial.<sup>6</sup>

In a modern parlance, Elizabeth's question is rephrased:

If 'mind-stuff' is so utterly different from 'matterstuff' in its nature--different to the point that it has no mass whatever, no shape whatever, and no position anywhere in space--then how is it possible for my mind to have any causal influence on my body at all? As Descartes himself was aware (he was one of the first to formulate the law of the conservation of momentum), ordinary matter in space behaves according to rigid laws, and one cannot get bodily movement (=momentum) from nothing. How is the utterly insubstantial 'thinking substance' to have any influence on ponderous matter? How can two such different things be in any sort of causal contact?<sup>7</sup>

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<sup>6</sup>Elizabeth Anscombe and Peter Geach, Descartes: Philosophical Writings (Bobbs-Merrill: New York, 1971), p.274-275.

<sup>7</sup>Paul M. Churchland, op. cit., p.8-9.



Presupposed in these two passages which raise an objection to interaction between something immaterial and something material is the idea of a local interaction. The essence of a local interaction is direct contact. A blow to the head exemplifies a local interaction. One object interacts locally with another object when it either touches that other object or touches something physical in between itself and the second object in such a way that the mediating object in turn touches the second object. A line of dominoes expecting to fall is a powerful image of the possibility of a local interaction. When the first domino falls onto the second, a causal influence is passed on to the piece receiving the fall. This mechanism is repeated on and on as successive dominoes fall and knock the following ones. However, if something happens to prevent any one of the falling dominoes from touching its neighbor, then the causal chain is broken. If someone happens to lift a couple of pieces from the line of standing dominoes and cause a gap wider than just one falling domino to bridge, then the mechanism of motion is broken. Without the physical being of something to bridge it, a local interaction cannot have causal relation to something untouched.

Local interaction is a well-respected idea in physics, so much so that for non-local interaction to be possible, the venerable limit placed by Einstein on the speed of light has to be violated, such a violation amounting to a scientific heresy. That the universe is tied together by strictly local connection has been an orthodoxy since Newton. The once seemingly mysterious force of

gravity, which has more of a non-local characteristic, has been subsumed under locality by the concept of force fields. The space between the sun and the earth is not empty. It is filled with a gravitational field which mediates the interaction between the two object across vast distances. In Quantum Mechanics, particles are treated as one aspect of fields, and the force of gravity is explicable in terms of the exchange of gravitons, thus making the influences strictly local. Depite the success of unifying gravity with the field concept, it will have to be noted that although mapping the quantum fields can be mathematically very precise, the ontology of these fields of forces is no less mysterious than that of the Newtonian forces.

Returning to Princess Elizabeth's objection, the point of her skepticism about mind-body interaction is located in her assumptions that one thing can move another only if the first thing comes into contact with the second thing, and contact with a physical thing seems inconsistent with something's being immaterial. Elizabeth could have said that the problem of interaction between an immaterial mind and material body is a problem because no physical contact is possible between something immaterial and something material. Unless it has been already built into the meaning of the word "contact" that contact is possible only between physical objects, it cannot be decided a priori that contact is not possible between an immaterial thing and a material thing. Similarly, unless the word "immaterial" has already

been loaded with the connotation which makes contact with a material thing impossible. it cannot be assumed a priori that immateriality is incompatible with its being in or coming into contact with the physical. The idea of a contact between two things should initially be neutral to the nature or the kinds of things said to be in contact. Whether contact is possible should be brought out by further analysis of the things themselves and the possible relations existing between them. The relation of being in contact is a species of causal relations and as such it is no less empirical than other forms of causal influences. You look for causal relations. You do not assume a priori where to look for them.

So unless the question is begged against dualism, the fact that the mind is immaterial and the body material does not impair the possibility of their being in contact. Moreover, opponents of dualism cannot legitimately appeal to the claim that an immaterial thing is not grounded in experience, that the only things there are are just material things. When the phrase "material thing" is used, the word "thing" is really redundant, for it is just as meaningful to say "it is material" instead of "it is a material thing". The word "thing" just repeats the fact that something physical is being spoken of. This seems not to be the case with "immaterial thing", for in this case the word "thing" definitely does not refer to something physical. If "thing" means a physical object, "immaterial thing" would be an oxymoron, a tight self-contradiction. In the phrase "immaterial thing",

what the word "thing" implies is just a "something", an ontological entity that deserves a niche in the existential category. Even if we acknowledge or acquiesce to the blatant assumption which physicalists gloss over and like to present as a truth that the world is ultimately more intelligible, if not altogether reducible, in terms of the actions of particles and fields, it is still ontologically valid to inquire whether existents come only in the forms dictated by physical theories. Although doing philosophy should not prejudice us in favor of accepting any ontology that comes along, it would be an insensitive kind of doing philosophy which at once dismisses such a minimal ontology as that of an immaterial thing.

When Princess Elizabeth doubted the compatibility between physical contact and a thing's being immaterial, her assumption seems to conflate two points which should be kept separate. First, it is one thing to doubt whether a physical contact between an immaterial thing and a material thing is possible, but it is another to speculate about what kind of immaterial thing can possibly stand in a causal relation to a material thing. These two points becomes clearer when posed in terms of a distinction between immateriality and an immaterial thing. First, we can ask whether contact is possible between immateriality and materiality. A vacant hole in the middle of a doughnut seems to represent immateriality, provided, of course, that we lay aside the scientific picture of its being filled with atoms. If you accept that the empty hole there is really empty but

also something--an empty hole--you would have somewhat expressed some notion of immateriality. Moreover, it is not difficult to visualize that what is immaterial is in contact with what is material. The hole and doughnut is contiguous. On the other hand, it is also quite clear that the hole is not exerting any causal influence on the doughnut. Therefore, it is a different point to want to inquire whether the hole can ever causally affect the doughnut. In this light, whether an immaterial mind can make contact with and thereby influence a material body, and vice versa, is a matter which requires further investigations, and not something which can be dismissed a priori. Even if such investigations seem to be not worthwhile in the case of doughnut holes, they seem more rewarding in the case of an immaterial mind. The point that need emphasis is that to compare and contrast immateriality and materiality is one thing, but to make certain claims about the relationship between a particular immaterial thing and a particular material thing is another thing. For the claims or conclusions made will have to be evaluated in terms of what such particular things consist in. Elizabeth's injunction against contact between immaterial and material objects cannot be applied across the board since different things, both material and immaterial, have different characteristics, such differences being relevant to their causal status.

In the case of the mind, we have every reason to conduct further investigations into its relation to the body. In the case of

one's own mind and one's own body, it is prima facie plausible to hold the belief that causal interactions exist between something immaterial on the one hand, and something material on the other. This belief is wellgrounded in intuitive and experiential knowledge. The problem of interaction between mind and body is still a problem, but in a different sense from Elizabeth's doubt. The question embodied in her remark seems to suggest some degree of spuriousness about the interaction problem in the sense that the problem will dissolve in accepting her main assumption. Our problem is genuine and requires as its solution a satisfactory description of the way an immaterial mind interacts with a material body.



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