



Chapter 1

Introduction

The title of this dissertation, The Problem of Interaction in Substance Dualism, captures what is most intractable about the mind-body problem: how two completely different things interact and why must these two things be understood in terms of the concept of substance. It must be pointed out at the outset, however, that this discussion will assume outright that the mind is a substance, this assumption carrying equal weight as the other less controversial claim that the body is also a substance. The justifiability of such an assumption will emerge from the reasons adduced to show that it is philosophically cogent, if not also profitable, to think of the mind in terms of substance. The arguments to reinforce the idea of the mind as a substance will not include attempts to defeat the opponents of this view, nor will there be arguments to show that this initial assumption that the mind is a substance deserves to be placed among the best theories, philosophical, scientific, or otherwise. So it may be said that what will be discussed concerning the view that the mind is a substance falls short of directly defending the view in question. Be that as it may, it will be sufficient for this project to show that at least within the framework of our problem, viewing the mind as a substance is a philosophical position that is of a piece with the latest scientific speculations.

It follows that the concept of substance itself will not be defended either. We are interested in the plausibility of the idea that the mind is a substance, and, of course, that the body is also another substance different from the mind. The discussion of the concept of substance will be constrained by such an interest, making it specific to the mind-body problem. The reasons for thinking of the mind and the body in terms of substances will be drawn from ideas already basic in the literature dealing with the concept of substance. These traditional ideas will not be defended but will be recruited to elucidate why it is philosophically rewarding to approach the problem of interaction between the mind and the body by way of Substance Dualism. A philosophically rewarding position should be one which suggests a solution or a partial solution to our problem. In view of this result, the cogency of the analysis of the mind under the concept of substance should not be taken as dependent on a rigorous defense of the concept of substance in itself. The force of this initial assumption should be judged when it is brought to bear on the whole problem of mind-body interaction.

Likewise, the concept of interaction discussed in this thesis will be concerned with just one specific form of interaction: the interaction between the mind as one substance and the body as another substance. Our treatment of the idea of interaction will be topic-specific. We will not be concerned with interaction of any other type except that between an immaterial mind, on the one hand, and a

material body, on the other. If assuming that the mind and the body are both substances is already question-begging, then the further claim that the body is material and the mind immaterial, together with the idea that interaction between them is possible and does take place, would seem to exacerbate the situation. The question will have to be begged, but it is hoped that the result obtained as a consequence of proceeding from these main assumptions would provide ample compensation. Moreover, it will also be seen that such assumptions are reasonable in the light of several scientific concepts.

Because the problem we are handling is internal to Substance Dualism as a philosophy of mind, this thesis will assume that Substance Dualism is prima facie correct without defending it against other philosophies of mind. Being prima facie correct does not mean that Substance Dualism assumes the position of the best candidate among philosophical theories of mind. This provisional status only means that we still should consider it as viable. It is ironical that Substance Dualism has fallen into disrepute, for while it seems intuitively appealing, being consonant with both common-sense and the teachings of many religions, the majority of philosophers now dismiss Substance Dualism almost disparagingly as pre-scientific, relegating its status to that of a marketplace speculation. This fate seems to have been due more to the belief that there is conclusive scientific evidence against Substance Dualism than to any persuasive opposing philosophical arguments.

Because Substance Dualism has become disreputable in the light of scientific considerations, the tenability of this philosophy of mind would have to rest on arguments to show that Substance Dualism is not inconsistent with the latest findings of science. So instead of trying to defeat the various materialistic theories of mind which present themselves as the more intelligible alternatives to our position, the strategy of this thesis will be to show that Substance Dualism is a reasonable view to hold in view of its scientific plausibility. Given what is current in the findings of modern physics, it will be shown that there is nothing in the assumptions made by the substance dualist that cannot be incorporated into the framework of modern physical theories. The objective of this thesis, then, focuses on the ways the problem of mind-body interaction can be answered by philosophically analysing scientific concepts. Of course, the outcome cannot qualify as having defeated the other theories of mind. All that will be claimed is that it is philosophically cogent and scientifically consistent to be a substance dualist.

Taking it for granted that particle physics is most foundational in our quest to understand the underlying structure of Nature, the arguments for Substance Dualism will appeal and defer to several ideas embedded in the theories in particle research. Specifically, these are quantum theories, referred to as quantum mechanics, the most successful to date in describing and predicting

the workings of the sub-atomic world. The ideas that will be used flow out of the conceptual analyses and interpretations which arise from or have been made inevitable by the findings in quantum research. The solution or partial solution to the problem of interaction between an immaterial mind and a material body will be worked out under the auspices of these ideas. The use of scientific concepts should not suggest that something close to a scientific paper is being aimed at. By all means, this thesis is a philosophical consideration of a philosophical problem. But it is a consideration which aspires to being scientifically informed and tries to glean what it can make use of from the field attended by physics. The profits from science should be seen as giving support to the philosophical arguments.

In utilizing quantum concepts, many of the claims made in this thesis might be accused of being speculative. But speculations in particle physics abound. It may be said that speculative ideas are no less a scientific tools for physicists than mathematics. Moreover, speculations in particle physics may be viewed as complementary to the mathematical formalism which underpins the workings of physicists. If we compare mathematics to a skeletal framework, then speculations become flesh to the bones. Of course, respectable scientific speculations are the ones with solid empirical consequences. This discussion will appeal and defer to such speculations, and so what might appear at first sight speculative

should be taken as philosophical considerations of solid scientific materials.

It might also be criticized that the iconoclastic interpretations that emerge from quantum experiments are extraneous to what constitutes physics, for it is correct to say that quantum research can survive without conceptual analyses. But this is to miss an important point. That quantum mechanics is successful as a physical theory or a group of physical theories is a fact, given, of course, the caveat that it too may be superseded. But it is just this fact that it is very successful that places great importance on the "strange" or "bizarre" implications of quantum mechanics. In the area of prediction and control, physicists have no problems with quantum mechanics. What is problematic is that while physicists most effectively manipulate the subatomic objects using quantum mechanics, they cannot settle the issue concerning what really constitutes the underlying reality. When taken as a group of theories, quantum mechanics comprises several mathematical formulas all of which are predictively competent. However, speculations as to what these formulas imply in terms of the constituents of reality provide several views of the underlying reality which are not only inconsistent with what scientific traditions have passed down as pictures of reality, but also call into question our very own intuitive assumptions about reality itself. What is problematic about quantum mechanics has to do with its ontological implications

and these cry out for philosophical considerations. The emphasis placed on quantum interpretations by some physicists, especially by those with a philosophical bent, derives from their attempts to make sense of the abstract formalism. From this perspective, the quest to understand what quantum mechanics means to beings like us cannot be something extraneous to a human enterprise like physics.

Quantum mechanics is an interface between science and philosophy. The quantum interpretation problem seems to suggest that it is sound to conceive of a continuity between disciplines of knowledge, which in our case links physics to philosophy. In fact, problems associated with the implications of quantum theories have made metaphysics more at home within the domain of particle research. In trying to translate the language of their mathematics and laboratory instruments into ordinary words, many physicists have turned to metaphysical concepts such as possible worlds, potentiality versus actuality, and appearance versus reality, to name only a few. These stock concepts in metaphysics have become a kind of syntax and semantics for talking about and contemplating sub-atomic reality.

Very important to this thesis is the presence in several quantum interpretations of the role of the mind or consciousness. Current discussions in quantum mechanics include a place for the conscious mind in the scenario of physical interactions. While the equations of Newtonian mechanics make no reference to any conscious

being, there is something in quantum mechanics which suggests that without consciousness the physical world would not be truly physical. Conceptual analyses of the quantum formalism also provides a model for describing the mind* as an immaterial substance which interacts with the material body. It follows, then, that the kind of interaction discussed here will be specifically a "quantum" interaction." This means that all interactive features will be topic-specific; that is, the features of the mind-body interaction will have quantum descriptions. The plausibility of this approach derives from the clout and, of course, the experimental success of quantum mechanics.

In order to be as specific as possible, problems that are related to the topic of the thesis only in a tangential way will be left

*"mind", "consciousness", "soul", "spirit", that is, terms denoting what constitutes the mental and all its features, will be used interchangeably in this thesis. Admittedly, each term contains connotations and nuances not readily applicable to the other. Treating these different jargons as being on an ontological par reflects the belief that whatever differences separate them, such differences arise from verbal and conceptual conventions and are, according to this thesis, different ways of referring to the same entity.

aside and open. Our discussion will avoid, for instance, such questions as "Are all minds substantially homogeneous?" , "Can the mind sustain disembodiment?". Are souls immortal?, Is there a universal mind?". etc. This thesis will narrow its focus to just the case of my own mind and own body. The interaction of interest will be the interaction between my own mind and my own body. This limitation does not imply that the interaction between minds other than my own and bodies other than my own will be drastically different from that between my own mind and my own body. The scope specified is given only to make this project more manageable. It could very well be that the relevance of the model of interaction between my own immaterial mind and my own material body that will be presented applies to the case of other minds and other bodies as well. In fact, on the common-sensical level, there should be no problem at all in believing in the existence of other minds as well as in believing that the causal model holding between the minds and bodies of others apply also to my own case and vice versa. But this is a belief that must be argued for and it is beyond our scope to provide such an argument. Accordingly, the interactive model described by this thesis will have to be just a model of mind-body interaction. More specifically, our model will be a model of the interaction between my own mind and my own body.