



McGill  
University

Foundations & Philosophy of Science Unit

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Professor Abner Shimony  
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Dear Abner

Thank you for your good letter of December 13th.

I am happy to learn that we agree on the matter of realism. We also agree, of course, on the matter of potentiality vs. actuality and on the objective nature of (most) quantum theoretical probabilities.

I am encouraged to see that you too regard the actualization of potentialities (the reduction of the wave packet) as being still unexplained. I suppose it will eventually be explained in terms of micro-macro interactions. Machida and Namiki (Prog. Theor. Phys. 63: 1457, 1833 (1980)) purport to offer just such an explanation, but I am not convinced that they have succeeded.

There are two possible bones of contention left. One is minor, probably of a terminological nature: you say that nonseparability is the q.m. version of holism. I claim that it is an example of systemism, which is distinguished from holism in that it asserts the analyzability (even in the absence of actual separability) of wholes. In my book The Furniture of the World (Reidel 1977) I mention quantum nonseparability, in particular with regard to EPR, as a case of Once a system always a system.

The 2nd bone concerns your conjecture that the projection postulate must be somehow related to the mind-body problem, which <sup>you</sup> do not believe has been solved by materialism. That the two are so related was of course stated by v. Neumann (who took parallelism to be the solution) and Wigner--not by Bohr, though. But I fail to see any basis for this, for we may assume that the reduction occurs not only in the lab but also in natural situations--e.g. when an electron is diffracted by a crystal situated on the top of Mt. Everest. As for the materialist solution to the mind-body problem, I submit that it is being produced by physiological psychology from K. Lashley and D. Hebb on. See my book The Mind-Body Problem: A Psychobiological Approach (Pergamon 1980). (I would gladly send you some of my books but I am broke.)

I hope to be able to discuss some of these matters with you tête à tête in Boston. One way of arranging for such a conversation is through a research grant administered by the Institute for Basic Research (96 Prescott St, Harvard Grounds, tel. 864-9859). The director of the IBR, Dr Ruggero Santilli (well known for his work on hadron physics), has encouraged me to ask the NSF for such a grant enabling half a dozen people to talk to each other from time to time. Would you be interested in my pursuing this matter? If so, would

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