



McGill
University

Foundations & Philosophy of Science Unit

12.10.1978

Professor Sir Karl Popper
c/o Prof. Tom Settle
University of Guelph

Dear Karl

Welcome to Canada. I am glad to learn that you accepted Tom's invitation, and hope your stay at Guelph will be both fruitful and pleasant despite the ugliness of the town.

Thank you for your letter of the 3rd concerning my close encounter with Eccles. True, I have not presented any arguments against dualism in my letters to you. But I have done so in my article in Neuroscience, which I sent you, and am doing so in great detail in my forthcoming book The Mind-Body Problem. (I still have to find a publisher for it. As you know, materialists have always been censored by dualists, and nowadays they are not popular unless they are dialectical.)

Here are some of the arguments I present in that book:

1. Interactionism cannot even be stated in a clear manner because the very notion of interaction has been defined only for concrete things (particles, fields, etc.). In any event neither you nor Eccles have elucidated the notion of interaction, which you take from ordinary knowledge. (I have mathematized the notion in my book The Furniture of the World (1977).)
2. To postulate an immaterial mind (or an autonomous 3rd world) is to foreclose the possibility of investigating the mental with scientific means, since only the material partner or "basis" of the mind is accessible to empirical and objective investigation. In particular, dualism is inconsistent with the whole of physiological psychology, or the science intent on identifying mental phenomena with neural events. (Incidentally, it seems to me that neither you nor Eccles pay due attention to physiological psychology.)
3. Neither you nor Eccles seem aware of the existence of numerous mathematical models in physiological psychology (Cowan, Wilson, Cooper, Anderson, etc.), which take it for granted that mental events are identical with neural events. And neither of you suggests how interactionism might be mathematized--a serious shortcoming in our century, where no breakthrough is possible without a modicum of mathematics. I believe dualism cannot be mathematized (a) because it uses concepts taken from ordinary knowledge without refining them, and (b) because the whole point of a mathe-

Postal address: 3479 Peel Street, Montreal, PQ, Canada H3A 1W7

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mathematical model is to represent properties of concrete existents by functions and to interrelate such functions. The gap between neuroscience and classical psychology (which are the two poles between/you and Eccles oscillate) can only be filled, it seems to me, by physiological psychology couched in exact (mathematical) terms.

4. To postulate the autonomous existence of ideas (once they have been thought up by somebody) is to indulge in the oldest of philosophical sins, namely reification. This is how gods, demons, and Platonic forms were invented. Furthermore there is not a shred of evidence for the claim that there are ideas in themselves, apart from thinking brains. (Sorry, but in science one does seek for positive evidence of one's conjecture in addition to trying to refute them.)


5. By talking of an immaterial mind (or of the 3rd world) one breaks with biology as well as with the ontology common to all of the factual sciences--the ontology of changing things. This is all very well for Eccles, whose loyalties are divided between science and religion, and who insists that mind is mysterious because it is supernatural. But I don't see why you should accept such an ontological split. In any case I believe you are inconsistent in espousing on the one hand a scientific world view without Copenhagen ghosts in physics, and psychoneural dualism and the idea of the 3rd world on the other when it comes to nonphysical matters. Pluralism can be developed and defended without populating the world with ghosts. I do so in my Ontology II: A World of Systems (1979).

So much for a quick criticism of psychoneural dualism. As for a formulation and defense of my own version of psychoneural monism (namely emergentist materialism), I must refer again to my forthcoming The Mind-Body Problem, where I present a half-way formalization of the hypotheses of Hebb and Bindra, two eminent physiological psychologists whom neither Eccles nor you cite.

In sum: I think that psychoneural dualism does not work and, what is worse, does not permit one to work within the scientific framework. And I believe that the psychoneural identity "theory", although never formulated as a theory proper heretofore, can be so formulated (in fact I do so in my book), and moreover it has inspired the most interesting psychological research over the past 20 years, namely the studies of perception, imagination, ideation, volition, etc., in physiological psychology--the missing link in the Popper-Eccles volume.

All the best and fond regards to Tom.

Love from Marta and



Mario Bunge

