Neural Unpredictability, the Interpretation of Quantum Theory, and the Mind-Body Problem

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Abstract

It has been suggested, on the one hand, that quantum states are just states of knowledge; and, on the other, that quantum theory is merely a theory of correlations. These suggestions are confronted with problems about the nature of psycho-physical parallelism and about how we could define probabilities for our individual future observations given our individual present and previous observations. The complexity of the problems is underlined by arguments that
unpredictability in ordinary everyday neural functioning, ultimately stemming from small-scale uncertainties in molecular motions, may overwhelm, by many orders of magnitude, many conventionally recognized sources of observed ``quantum'' uncertainty. Some possible ways of avoiding the problems are considered but found wanting. It is proposed that a complete understanding of the relationship between subjective experience and its physical correlates requires the introduction of mathematical definitions and indeed of new physical laws.

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