

The Riddle of Consciousness

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`The Quantum Self, by Danah Zohar.' Flamingo Press, 1991. Price: Pounds 4.99.©

The twentieth century has witnessed the birth of two theories of the physical world which have had profound implications on our world view. These are of course the Theory of Relativity and the Quantum Theory. These theories, especially quantum mechanics, have been extraordinarily successful in explaining the physical universe. But even the remarkable successes of the quantum theory have been somewhat tainted by some fundamental philosophical problems associated with its interpretation and its implications. In particular, the role of the conscious observer in quantum mechanics is a very uncertain one. How consciousness relates to the physical world is a question which is unanswered. On the other hand, what constitutes consciousness has been the subject of human thought since time immemorial.

Danah Zohar's book, 'The Quantum Self', purports to provide answers to these queries. It seeks to get beyond '...a particular form of alienation that has plagued this century.' And the strategy is to look '...very closely at the relationship between matter and consciousness in quantum theory and proposing a new, quantum mechanical theory of consciousness which promises to bring us back into partnership with the universe.'

Thus begins a journey through the celebrated paradoxes of quantum physics like the famous Schrodinger's cat which is neither alive nor dead, theories of consciousness, the quantum mechanical model of consciousness and its implications for humanity. The author is well versed in debates which have been going on about the mind body problem. Can the mind (or consciousness) be explained on the basis of laws of physics which are operative in the universe?

This view has been held by many philosophers from the atomist Democritus to the materialist Hobbes. On the other hand, there is the dominant Cartesian view which ascribes different properties to matter and the 'soul'. Ms. Zohar contends that the Cartesian view has been responsible for the all-pervasive alienation which human beings are experiencing. After giving a short introduction to quantum physics and the debates in psychology relating to consciousness, she goes on to propose a new theory of consciousness, which is quantum mechanical in nature.

Her theory of consciousness rests crucially on what are called Bose Einstein condensates. Just as water condenses into ice, a more ordered state, Bose particles (particles like the photon, the particle of light) can under some conditions condense into a highly ordered

state. These condensates then have certain remarkable properties quite unlike their constituents. There are several examples of such condensates. It is obtained, for example in superconductors where the electrons form pairs and form a Bose Einstein condensate. Several experiments have reported the formation of such condensates in biological systems also. Ms. Zohar claims that what distinguishes conscious from non-conscious matter is a Bose Einstein condensation among the neuronal constituents. According to her, consciousness is simply the excitation of such a system; much like the waves on the calm and serene surface of a pool of water.

Ms. Zohar goes on to explain results in cognitive sciences, psychology and neurophysiology on the basis of her theory of consciousness. How the self though 'divided' yet experiences an underlying identity, how the self is at once a constituent of the universe and yet distinct, and how the self so inextricably linked to every other entity in the universe is yet 'free' and creative. All these challenging questions have satisfactory answers according to her if we assume her physical model of consciousness.

In the past few years, countless books have been written on this and related subjects of quantum physics and holism, mysticism and other such esoteric topics. Most of them have either sensationalized the field or trivialized it. This book is somewhat different in as much that it is a well-researched and clearly written book. The author has been somewhat successful in simplifying abstract concepts without necessarily trivializing them. But it also suffers from too much speculation. The whole field is admittedly still highly speculative. Yet when writing for the non-specialist reader, it is important to distinguish well established results from pure speculation. Unfortunately, since her whole thesis is very highly speculative, the author is unable to make this distinction

This potential source of confusion aside, the book is provocative and the implications of her thesis profound. The whole project of trying to find a basis of consciousness and trying to integrate it with the theories in physical and cognitive sciences is an extremely ambitious and in some senses a crucial one. In the cybernetic world of tomorrow, the question of consciousness is going to be of paramount importance. It is to Ms. Zohar's credit to venture into this crucial yet vague and difficult terrain and to propose a hypothesis which is likely to provoke much discussion.

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