

AUTHORS' RESPONSE

Why Only Four Dimensions Will Not Explain the Relationship of the Perceived and Perceiver in Precognition

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Abstract—Our thirty years of psychic research indicate to us that the body of psychic phenomena is not describable in the usual four dimensions of space and time. We utilize an extension of accepted physics, established in the literature, comprising a complex eight-space metrical model of psychical phenomena. Our response here is to the paper of Costa de Beauregard, in which he attempts to describe psi phenomena in a quantum picture, in three dimensions of space and with time dependence.

Keywords: nonlocality — psi research — complex space-time — multi-dimensional

In our paper "The Speed of Thought: Investigation of a Complex Space-Time Metric to Describe Psychic Phenomena" we have addressed many of the major concerns relating to resolving psychic phenomena with the main body of physics and explaining the nonlocal attributes of psi in space and in time¹.

We have conducted our experimental and theoretical explorations over a number of years. Several main and relevant issues to consider in developing a model of psychic phenomena have been addressed by us². Some of these considerations are: first, does the theory adequately fit the body of data under consideration; second, does the theory appear to explain other relevant phenomena; third, is the theory constant with the main body of physics as we know it; fourth, the theory should not introduce obviously spurious predictions; fifth, the theory should be able to be utilized to make other testable predictions; and sixth, some tenants of the theory may not yet be testable but are not in conflict with current observation¹.

We have examined a number of theoretical models and suggested others^{3,4}. We started with the usual four space-time models, but at least two major problems arise. We have considered signaling from a source sender to receiver at near the velocity of light in four space, per Einstein's dictum $v \geq c$ signal

transfer. To address the phenomena of precognition, which is known to have occurred over many years, let us consider a velocity of near to that of light; we will only net one nanosecond of time per foot as a time advantage on the Minkowski four space light cone. For $v - c = 3 \times 10^{10}$ cmlsec so that we have $1/c = 0.1033 \times 10^{-9}$ sec/cm or .03 nanosec/cm or yields about 1 nanosec/ft. of precognitive advantages, which clearly does not explain the data for precognitive times of hours, days and years.

Another reason for choosing a greater dimensionality of four is to avoid the paradox of "closed time like loops." In fact, certain fundamental symmetry principles such as Lorentz invariance, analyticity, etc. explained in Rauscher and Targ¹ demand the symmetry achieved by the choice of a minimum of eight dimensions, which are necessary to explain remote viewing and precognition. We deal with these properties of consciousness not as an energy transmission but one of information. The symmetric form of the complex eight space metric M_4 allows apparent instantaneous transmission information in eight space because of the action of the choice (precognitive advantage) one makes, which would not be possible in four space.

Another reason to develop a theoretical model in a metrical space is that psi phenomena act as macroscopic events in space-time. Models of psi, which are solely involved in a quantum picture, evoke a primarily microscopic domain in which the value of Planck's constant, h , is small but not insignificant. In most of macroscopic phenomena, h is not relevant.

The recent paper by Costa de Beauregard⁶ presents a model of psi or paranormal phenomena that is formulated in terms of a "quantal wave like probability scheme" depending on the "zigzagging" causation (or series) of Richard Feynman for the Dirac sea model and an encoding and decoding of wavelike information in target and receiver⁶.

One may be attracted to utilize the "strangeness" of quantum mechanics and identify it with the encultured and the apparent "strangeness" of psi in the Western culture. Unlike Costa de Beauregard, we do not believe current quantum theory explains or comprises a theory of psychic phenomena, but possibly there are areas of overlap between Ψ (of psi) and Ψ (the wave quantum function), but too many questions remain, such as the need for the unproven Everett-Grabran-Wheeler type postulates and other nonmacroscopic description of quantum theory.

We have examined in some detail the so-called quantum "Zig Zag" formalism. This formalism is primarily applied to electron-positron pair production from γ rays impacting on heavy nucleons or in highly excited states of matter in an ionized hot plasma. It might be hypothesized we can "use up" time in the spatial dimension of the Feynman graph techniques that are utilized in these types of formalisms, but these apply only to microscopic quantum processes⁷. These processes do not relate in any manner to the macroscopic space-time events of psychic perception. Also precognition cannot be accommodated or explained in Feynman graphical techniques, nor is the problem of closed time like loops resolved in four space.

It is clear that psi is macroscopic in nature and scope of action. Not only does psychic phenomena span vast spatial dimensions as well as temporal precognition but perhaps also in retrocognitive information access.

We need not address a model of psi that depends on developing a model of psi or even conscious thought that depends on a purely quantum "coding" and "decoding" scheme, which Costa de Beauregard⁶ and others have suggested, including inherent problems of describing the manner in which such encodement works. Also it is not demonstrated the manner in which such a picture to formulate psi relate to electron—positron pair production from gamma rays or other high energy sources.

We addressed the concept of information transfer in remote viewing, precognition and remote healing.¹ We did need to invoke an energy transmission system, which would be called for in the zigzag Fermi-Dirac model where the Hamiltonian propagation of the Feynman series is an energy to generate and requires energy to generate "quantum waves." Although micro quantum models may possibly occupy some role in psychokinesis and its localized effect, the whole of psi and the mechanism of transference of psychokinetic interaction to psychokinetic action cannot be explained by the quantum theory alone.

Also, the Feynman graphical technique often contains problems such as unwanted infinities. Renormalization methods often carry inherent assumptions to rid such approaches of this problem. Hence topological expansions utilizing Feynman series are not exact and the manner in which to avoid these infinities is not known in the case of psi phenomena. Although collective phenomena can be dealt with such an approach, we still remain in the quantum (primarily) micro domain. Although there may indeed be a relationship between the quantum treatment and psychokinesis, as well as to detail micro neurobiological process description to "thought", these approaches are very incomplete and extremely poorly defined and are not what we addressed in our paper.¹

The stated concern of our paper was to demonstrate, first, a reconciliation of macro psychic phenomena (remote perception and remote healing at a distance) with the main body of physics and, second, to describe the nonlocality of these phenomena and other physical nonlocality properties of space and time in terms of the well-researched body of mathematics of complex Minkowski space. See references in our paper.¹

We should address the issue of nonlocality here as we have in the earlier paper.¹ Nonlocality is an attribute of psi and also of the experimental tests of Bell's theorem (see references in Rauscher & Targ¹). Although psi phenomena and some of the types of some predictors of the quantum theory have some similar "attributes," this does not imply that quantum theory explains psi. One point of consideration is that of Bell's theorem. Bell emphasizes, "no theory of reality compatible with quantum theory can require spatially separate events to be independent." That is to say, the measurement of the polarization of one photon determines the polarization of the other photon at their respective measurement sites.

This surprising coherence between distant entities is called *nonlocality*. In writing on the philosophical implications of nonlocality, physicist Henry Stapp of the University of California at Berkeley stated that these quantum connections could be the "most profound discovery in all of science"⁸. Nonlocality is a property of both time and space. Nonlocality of the psi observer and observed, blocked from ordinary perception, is the fundamental property of ESP. It may be that the fundamental nature of nonlocality supercedes either just microscopic or the macroscopic phenomena and may occupy one point of commonality.

The physical models of psi perception are a new and exciting frontier in the process of development. We feel we have set a new level of scientific value. We look forward to future developments in the field. Currently, we have in progress a detailed analysis of Bell's theorem of nonlocality expressed in complex Minkowski metric.

Note

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