An Objective Model for PSI?

Over the years, UFO researchers have made many observations, which would suggest the reality of parapsychology or PSI phenomena (This includes some possible indications in my own case files). In addition, many books and articles in the literature ("Margins of Reality by Jahn and Dunne, "The Conscious Universe" by Dean Radin) also build an excellent case for the objective reality of PSI. But while evidence would appear to exist to suggest a solid reality behind PSI, the lack of a theoretical mechanism very much hinders the acceptance of this data by the scientific community.

Recently in a web course which I took through the University of Arizona (website is http://conscious.arizona.edu) entitled "Consciousness at the Millennium, Quantum Approaches to Understanding the Mind", the instructors explored some potential mechanisms which might underlie the phenomenon of consciousness. They built what I thought was an excellent, if unproven, theoretical framework for consciousness studies - including PSI phenomena, from several very solid theoretical perspectives.

One theory seemed very well developed, and to me it looked very promising. This was a hypothesis by Roger Penrose, Michael Conrad and Stuart Hameroff (the course facilitator) that quantum behavior of substructures called microtubules (or MTs), within nerve cells, could be the site at which quantum behavior is manifest. The mechanism, entitled Orchestrated Objective Reduction (abbreviated Orch-OR), is explored in detail in Roger Penrose's book "Shadows of the Mind". This theory suggests that microtubules may be the underlying structures supporting consciousness. Interestingly, this theory would also allow for nonlocality of consciousness - critical for PSI.

Microtubules are a well established component of the nerve cell. They are cylindrical structures composed of protein molecules called tubulins. Each tubulin has a structure which specifically allows it to be affected by quantum mechanics. Tubulins can interact both with each other, and with random quantum influences in the environment - which Penrose suggests may be the zero-point fabric of space itself. It is this zero-point interaction which might allow Tubulins to be affected by nonlocal influences, a mechanism for PSI. In addition, interactions between Tubulins, might allow a coherent quantum field to form within the large scale neural network of the brain.

Microtubules interconnect within neurons and also interact across synaptic gap junctions between neurons. According to the authors, quantum field behavior would be able to couple across these junctions. Thus, coherent quantum effects could manifest themselves on a moderate to large scale within the brain. Computer models described by the authors show how a periodic cycle of quantum and classical behavior would occur. At a rate of approximately 40 times per second, a quantum field would develop within the microtubule network and would manifest for a time strictly defined by Heisenberg's uncertainty principle, at which time the field would resolve itself into specific states of the Tubulins (a process known as objective reduction). The authors suggest that this cyclical, but chaotic signal of approximately 40 Hz corresponds with the electronic "noise" which is often observed in measurements of brainwaves, even within EEG

traces taken by electrodes within the brain itself.

What needs to be more clearly established, in my view, is the means by which quantum wave behavior affects the currently understood electrical properties of nerves, and what role microtubules play in this process. The authors state that answers to this class of questions appear to be in the works. They also state that microtubules are integral parts of the nerve cell, controlling many facets of the neural behavior, but do not build a very clear picture of this.

To their credit, their theory offers some very concrete predictions. Many of these involve electronic behavior of nerve cells, and properties of EEG waveforms, which can be clearly measured. In addition, they postulate that responses of the brain and of consciousness to certain anesthetics should have very well-defined properties. Thus, this theory is, at least in principle, verifiable.

If the authors are right, we may be well on our way to a concrete understanding of the PSI phenomenon. If this is the case, then the holy grail of PSI researchers might be in reach - a well-defined physical paradigm to understand the PSI phenomenon.