Paraphysics: Is There Physics in Parapsychology?

An Editorial By Dr. Samuel Stansfield

I was first exposed to parapsychology in the 1970s, during my time as an undergraduate student. At the time it sounded like an interesting set of ideas, but the budding physicist in me found it difficult to accept that the declared phenomena were really there. The experimental evidence seemed spotty at best. All the experiments that I read about at the time were, it seemed to me, inconclusive. The experimenters were trying to measure an effect that was extremely small. My skepticism was further heightened by the disdain for the parapsychologists held by the general scientific community.

In high-energy physics, experimenters also measure effects that are exceedingly small. Physicists get around that difficulty through the use of statistics. The statistical universe of a typical accelerator experiment involves thousands, if not millions, of individual events. However, obtaining the results from that many events in the realm of parapsychology is much more difficult. The phenomena studied by parapsychologists are almost certainly connected to the human mind and as such require a human "Operator" as part of any experimental setup. This severely limits the number of test runs to create the statistical universe. The problem, in the language of physics, is that the error bars are larger than the effect that's being measured. I was astounded to find out a few years back that new meta-studies have been performed. It seems to me that these studies could be a way to unlocking the phenomena of parapsychology.

To the theoretical physicist, new phenomena call out for hypotheses to explain them. Such hypotheses usually raise more questions than they answer (as any theory should). What kind of theory is appropriate? Does thermodynamics, especially the first and second laws, need to be altered to fit the new phenomena? Should we consider statistical mechanics and define some interaction terms in the Lagrangian and go from that direction? Is a classical field theory appropriate? How about a fully quantized theory?

During my studies, I have spent considerable time pondering the interpretations of quantum mechanics, especially the non-local effects. When the results of experiments by Aspect and his colleagues appeared in the early 1980s, that seemed to me a good thing.¹ I had always had philosophical concerns regarding the questions raised by EPR. I couldn't see any reason to rule out non-local effects based on the arguments of Einstein Podolsky and Rosen. At the root of their argument was an unproven idea about the fundamental

workings of the world.² Still, how can one relate the non-local effects of quantum theory to the phenomena of parapsychology? That, to me, is the main question facing the theoretical paraphysicist at this time. I remain unconvinced that a classical field theory is appropriate for this discussion. The human brain is a very complicated, interacting quantum system and as such I have not seen any evidence that the human brain should be modeled upon classical concepts.

From the experimental side, the physicist should also be able to help out. To many people who believe strongly in the reality of parapsychological phenomena, there is a common use of the concept of "energy" that describes what they "see" or experience when they are "in tune." Frankly, the misuse of a term that is well understood in physics, such as energy, has always been a serious concern and highly problematic. Without evidence that the experiences really involve what physicists understand as energy, it is highly improper for the physicist to use the term "energy" in any context with respect to parapsychology. I would suggest that calorimetry experiments be performed to test for energy changes. With recent advances in automated measurements and the precision of modern devices, it should now be possible to measure the very small temperature differences that might be involved in parapsychological experiments. One could easily design a study that could limit or insulate the apparatus from outside influences other than parapsychological influences during these calorimetry studies. Such studies would have two main advantages. They could demonstrate once and for all if there is really an energy effect in parapsychology. They could also give us firm measurements regarding the physical size of the effect. In the long run such studies could also give us hints about the nature of the interaction terms that could be used in a Lagrangian theory.

1. A. Aspect, J. Dalibard and G. Roger, Phys. Rev. Lett., 49, 91, (1982).

2. A. Einstein, B. Podolsky and N. Rosen, Phys. Rev., 47, 777, (1935).

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