An Editorial

THE NEW AND IMPROVED PARAPHYSICS

By James E. Beichler

The etymology of the word Paraphysics is quite interesting as is the history of paraphysics itself. The word seems to have been coined in the late nineteenth century by the German psychiatrist and psychical researcher Baron Albert F. von Schrenck-Notzing, (Beal in Mitchell, p.486) so it dates from the same era as the word parapsychology. But its modern usage is not nearly as wide as the word parapsychology. For example, parapsychology is well defined and can be found in any standard dictionary or encyclopedia. The history of the word parapsychology can be found in many general books on the subject or encyclopedias dedicated to parapsychology and/or the paranormal as well as standard dictionaries and encyclopedias. The popularity of the term parapsychology and its general acceptance as the name of a field of science, although that acceptance has been given begrudgingly by some scientists and other scholars, no doubt stems from the seminal work done by Joseph B. Rhine in the 1930's and thereafter. Many other scientists have followed the path paved by Rhine and added tremendously to the field.

Paraphysics has had no real champion of the stature of Rhine so the word is used only sporadically by a few within the scientific community. It is far more often misused within the pop culture of "occult" phenomena, which may be a part of the reason that scientists shy away from the term. Use of the word has been ambiguous at best and the scientific field of paraphysics has never been clearly defined. Even those physicists who work in the field are regarded to be working in parapsychology rather than paraphysics. None of the standard dictionaries of the English language define paraphysics. The word cannot be found in *Webster's*, *Funk and Wagnall's* or even the full *Oxford Dictionary of the English Language*. Nor is paraphysics listed in either the *Encyclopedia Britannica* or the *Americana*.

The closest to a definition for paraphysics that can be found in a standard dictionary is that given for the word "paraphysical" in the *Oxford Dictionary*. According to the 1989 edition, paraphysical is "subsidiary or collateral to what is physical; of, pertaining to, or designating physical; phenomena for which no adequate scientific explanation exists." (Volume XI, p.173) Parascience is also defined in the same dictionary. It is "the study of phenomena assumed to be beyond the scope of scientific inquiry or for which no scientific explanation exists." (Volume XI, p.206) From these two definitions, it is easy to extrapolate an approximate meaning for paraphysics, which in general conforms to the common usage of the word. Paraphysics could be defined as

the study of physical phenomena which seem to be beyond the scope of ordinary physics, or for which no apparent physical explanation can be found.

However, a definition of paraphysics can be found in *The Donning International Encyclopedic Psychic Dictionary* as edited by Dr. June G. Bletzer. She defines paraphysics as:

> … the study of PHYSICS in relationship to psychic phenomena; 1. Study of: (a) physics of paranormal processes; activity that resembles physical phenomena but is without recognizable physical cause; (b) (B. Herbert); anomalous physical effects not explained by current physical theories; 2. (Laboratory) an approach to PSYCHIC ENERGY above and beyond the usual study of physics; 3. Investigations made on the borderline of both physics and psychic phenomena. Syn. PARAPSYCHOLOGY. (Bletzer, p.454)

There is little to differ with in Bletzer's definition, except for her introduction of the phrase "psychic energy." The use of such a phrase implies a theory for the explanation of paranormal phenomena that does not exist. Although an energy exchange must be taken into account for any physical action according to modern physics, there is no physical evidence upon which a new form of energy such as psychic energy can be postulated. Even then, her definition of paraphysics does not correspond to her definition of paraphysical a few entries above. In the definition for paraphysical, Bletzer introduces new quantities such as "etheric world intelligences" and "nature spirits." Paraphysical is the adjectival form of the noun paraphysics, so there must be an intimate and total correspondence between the two terms, but there is not in Bletzer's definitions.

Taken within the context of Bletzer's dictionary as a whole, these definitions present a problem for scientists who wish to recognize paraphysics as a legitimate science since they are found in a dictionary that seems to be dedicated to the "New Age" religions and philosophies rather than a strict scientific discipline. This issue is further complicated by the fact that Bletzer also claims that paraphysics and parapsychology are synonymous. These two words may seem synonymous in the minds of members of the popular culture that has grown around occult phenomena and "New Age" thinking, but there is a very strict difference between paraphysics and parapsychology. Both the use and misuse of the term paraphysics as well as the abuse of the word beg the question of why the term has not been more precisely defined within its scientific context.

Most scientists will admit that IF paranormal phenomena exist, then the explanation of those phenomena must fall within the realm of physics. The word IF is used here in deference to those scientists who are skeptical about the existence of paranormal phenomena, but are still open minded to the possibility of such phenomena even though that possibility may be remote in their estimation. The paranormal phenomena studied by professional parapsychologists fall within two general categories: ESP and PK phenomena. By their very nature, PK phenomena deal with paranormal connections between mind and matter and therefore their explanation must account for some form of energy transfer. On the other hand, many scientists who work in

parapsychology believe that ESP phenomena may deal strictly with informational transfer between minds without a corresponding energy transfer. In that case, any scientific explanations or theories of ESP phenomena would be purely parapsychological without being paraphysical. Yet it can always be argued that even if the informational transfer in ESP phenomena is itself non-physical, that same transfer of information must initiate some chemical or physical reaction in the human minds involved with that transfer for cognition of the information to take place. So at some level, even ESP phenomena must be scrutinized within the context of paraphysics.

In fact, the characteristics of informational transfer during ESP events have been likened to the tunneling effect in quantum mechanics. Other conceptual aspects of quantum mechanics also seem to correspond to the characteristics of both ESP and PK phenomena. For example, consciousness seems to play some fundamental role in both ESP and PK phenomena while consciousness also seems to have some fundamental role in quantum theory. In quantum theory, a conscious and sentient observer seems to be necessary for the creation of a specific reality through the collapse of the wave packet. This view is explicit in the extreme version of the Copenhagen Interpretation of the Uncertainty Principle. The transfer of both energy and information during paranormal events seems to defy the causal laws of space and time while recent experimental evidence based on attempts to verify Bell's theorem also seems to defy our commonly held scientific views of space and time. In all of these cases, there are parallels between the characteristics of physical phenomena as explained by modern physics and the characteristics of paranormal phenomena. This fact alone should justify a serious look at paraphysics by the scientific community.

There is actually a long history of attempts to interpret paranormal phenomena within the context of the physical theories and the beliefs of science. It dates back at least to the eighteenth century when Mesmerism was explained as animal magnetism. Physical interpretations of spiritualistic and other paranormal phenomena during the late nineteenth century surely fell within the context of the physics of that era. Many scientists constructed aether theories during the last half of the nineteenth century to explain the propagation of electromagnetic waves. Parallel to this development, there were attempts to explain the survival of a human soul or spirit after human death in terms of the same all pervading aether. Some such explanations also incorporated arguments from the physics of thermodynamics, which also evolved during that same period of time. For example, in 1875 the physicists Peter G. Tait and Balfour Stewart wrote a book entitled *The Unseen Universe, or Physical Speculations on a Future State*. In this book, they theorized that the soul survived death using a combination of the prevalent aether theories and thermodynamical arguments. Neither of these men was part nor parcel to the spiritualist movement and was acting purely as physicists of their era tackling the important issues of their day.

Hyperspace theories were also in vogue in mathematics and to some extent in physics during this period. Within this context, some scientists and scholars postulated that ghosts, spirits, the souls of the dead, and possibly other beings existed in physical hyperspaces of dimensions greater than the three representing the normal space of

physics. Some purely psychic phenomena were also explained in terms of four-dimensional spaces. The German astronomer Johann Karl Friedreich Zoellner used a four-dimensional space to explain the tricks of the American magician Henry Slade in the late 1870's. Unfortunately, Slade was discovered to have cheated Zoellner's and other tests, thus discrediting Zoellner, his theories and anyone else associated with the incidents. And finally, telepathy was likened to physical telegraphy when the technology of the telegraph first emerged.

Even though these physical analogies were used to explain and understand paranormal phenomena, many of these physical theories have themselves fallen by the wayside of history. Telegraphs are obsolete as a means of communication and aether theories have almost totally disappeared from science except as a historical curiosity, while Zoellner's career was very nearly ruined by his association with Slade. Other scientists never seriously considered his hyperspace theory. In fact, Ernst Mach attacked all such theories and speculations in reaction to Zoellner's work. [Mach, p.203] However, hyperspace theories did survive at the very edge of physics and re-emerged in the 1920's in association with unified field theories based upon Albert Einstein's general theory of relativity.

An intimate relationship between parapsychology and paraphysics has itself existed from at least the late nineteenth century when the two terms were first used. In fact, the field of psychology evolved out of the same milieu of scientific inquiry as parapsychology. Both were originally related to the philosophical concerns regarding the relationship between the laws of physics and the human perception of physical phenomena that were voiced during the late nineteenth century. Physics had become so successful by the midpoint of the nineteenth century that philosophers and scientists such as Ernst Mach, Karl Pearson and J.B. Stallo could question the difference between physical reality and our perception of that reality. The philosophical debates that were engendered by such questions were the most recent version of older questions regarding the relationship between mind and matter. Science as a whole, especially in the case of Darwinian evolution, had become so successful that questions regarding the relationship between mind and matter could again be raised and these questions led to the scientific explanation of spiritualism and psychic phenomena at several levels of scholarly inquiry.

While philosophers of science such as Mach questioned the validity of the conceptual basis of physical laws, philosophically considering whether physical laws represented something inherent in nature rather than a way of internally categorizing our perceptions of nature, psychology evolved as the study of how humans deal with their perceptions of the world and internally cognize those perceptions. On the other hand, a more direct early relationship between physics and psychology can be found in Gustav Fechner's book *The Elements of Psychophysics*, first published in 1870. James Mark Baldwin's *Dictionary of Philosophy and Psychology* of 1901 exemplifies the early union between philosophy and psychology. In his introduction to the dictionary, Baldwin noted that special relationship.

> The association of these two subjects is traditional and, as to their contents, essential. Psychology is the halfway house between biology with the whole range of the objective sciences, on the one hand, and the moral sciences with philosophy, on the other hand. (Baldwin, p.x)

Psychology grew out of philosophy and the scientific discussions concerning human perception of the world.

Further evidence for the twin conception of parapsychology and psychology as can be found by considering F. W. H. Myers' subliminal theory of psychic phenomena. Subliminal perception is an important concept within the rather conservative discipline of modern psychology even though Myers invented (or discovered) the concept in his attempt to derive a theory of paranormal and psychic phenomena. These and other examples should adequately demonstrate the fact that the delimiting characteristics that distinguish between physics, paraphysics, psychology, parapsychology and the human perception of reality, whatever reality may prove to be in the long run, are human limits, not limits placed on the world by nature. Yet we must limit and define these portions of overall reality in this manner in order to understand the nature of the world around us.

As science approaches a complete realization of the most fundamental aspects of reality, it may well be found that there is no difference between paraphysics and parapsychology, just as there may be no real difference between either mind and matter or consciousness and physical reality in the final analysis. But at this point in the evolution of science there is no direct evidence that either consciousness and physical reality or mind and matter are at their most fundamental level the same thing. So, the difference between paraphysics and parapsychology must stand, at least until scientific evidence indicates otherwise. It is quite possible that drawing a distinction between what is purely paraphysical and what is purely parapsychological may actually aid in the search for a consistent and accurate definition of mind and consciousness as well as matter and physical reality. There have been many cases in science where concepts have been defined as much by what they are not as by what they are. Deciding what is purely physical may help science to find the limits to consciousness and thus define consciousness. The definition of paraphysics as an independent field of science must therefore be deemed an important step in the evolution of science. Within our normal worldview, as defined by the fundamental bases of classical physics, relativity and quantum mechanics, all of nature is defined in the terms of either matter or matter in motion. So any possibility that there is a reality underlying these concepts implies a paraphysical explanation.

In spite of the seeming lack of support for a distinction between paraphysics and parapsychology as well as a clear and precise definition of paraphysics, the term was popularized within its scientific context during the 1970's. The Parapsychological Association had just been admitted to the American Association for the Advancement of Science and after decades of research and there was a great deal of hope that a proof for the existence of ESP was just over the horizon. The acceptance of parapsychology as a legitimate science by the scientific community, as marked by the admission to the AAAS,

together with the rising popularity of parapsychology and the optimism of the decade helped to foster a renewed interest in paraphysics in its own right. In Edgar Mitchell's 1974 book *Psychic Exploration*, both James B. Beal and Brendan O'Regan contributed articles on "The Emergence of Paraphysics." These articles appeared in a section of the book entitled "The Emergence of a New Natural Science" which contained still other articles dealing with the physics of psi phenomena. In his introduction to the book, Mitchell defined paraphysics as "a new field within noetics that is extending the laws and methods of physics in an attempt to explain some paranormal phenomena." (Mitchell, pp.25-26) He further spoke of the emergence of paraphysics as a science. "Today the emergency of paraphysics is paralleling and overlapping much of psychic research and parapsychology and will probably eventually embrace them both." (Mitchell, p.41)

As if to stress the connection between psi phenomena and physics, rather than that between psi and parapsychology, the forward was penned by Gerald Feinberg. Feinberg is a well-known physicist who works in neither parapsychology nor paraphysics, but seems to have an open mind regarding these subjects. Feinberg clearly defined the pre-conditions under which the scientific community could accept paranormal phenomena as legitimate subjects for research in physics. He accomplished this by stating a strategy for psychic research that he thought would be acceptable to physicists. Feinberg stated that detailed studies of the properties of paranormal phenomena would be more appropriate than continuing the present scientific effort in parapsychology "whose primary purpose is to convince others that the phenomena exist." (Feinberg in Mitchell, p.9)

Too much energy, effort and time have been wasted on arguments over the existence of paranormal phenomena. On the other hand, once the properties of paranormal phenomena have been identified, assuming that they can be identified, the phenomena themselves would stand on their own merits without independent proof of existence and the phenomena would be accepted as real. What Feinberg did not state was the fact that identifying and defining the properties of paranormal phenomena is also a necessary precondition for deriving a physical theory of psi. Thus he implied that an acceptable physical theory of psi would be necessary for physicists to accept psi as real.

In yet another book, the mathematician C. Musés stated, "some scientists still shun [paraphysics] and act as though it does not exist." He continued, stating "Other scientists who are seeking to enlarge the scope of scientific thinking use the term paraphysics to denote the field of phenomena covering interactions of nonphysical things (such as consciousness) with physical bodies and objects." (Musés, p.280) These comments appear within the article "Paraphysics: A New View of Ourselves and the Cosmos." in which Musés clearly accepts paraphysics as a legitimate branch of science The fact that the book in which the article appeared in 1977, *Future Science: Life Energies and the Physics of Paranormal Phenomena*, was even published offers support to the argument that the study of paranormal phenomena represents a legitimate task for physics. The opinions of these various scientists indicate a clear pattern of the emerging field of paraphysics.

In spite of these indications to the contrary, the emergence of paraphysics was not accomplished at the time. The successes of parapsychology in the late 1960's and the 1970's were not sustained into the 1980's. Parapsychology began to languish a bit as the expected proof of psi phenomena did not appear as hoped. The optimism of the 70's seemed to have been premature. But hope springs eternal and interest in parapsychology seems to have turned around in the 1990's. This new optimism is due in large part to the success of meta-analysis in offering some proof of the existence of psi phenomena, thus justifying the many decades of research in parapsychology.

So, once again it seems that we are entering a period during which a science of paraphysics is emerging. Research in the physics of paranormal phenomena is being carried out at several parapsychological laboratories as well as the Princeton Engineering Anomalies Research Laboratory. The CIA has recently released documents concerning its own research into psi phenomena and its use of remote viewing, thus seeming to give research into the paranormal an official government seal of approval. More physicists are taking a serious look at paranormal phenomena. In particular, the Nobel laureate Brian Josephson has publicly accepted the reality of paranormal phenomena and is actively working in paraphysical research. He argues that the evidence for some forms of paranormal phenomena is now conclusive and the scientific community should take the existence of psi phenomena seriously. Another physicist, Henry Stapp, has shown that quantum mechanics may be able to accommodate psi phenomena if psi phenomena are real.

Yet the same problems with the paranormal still remain. The most serious of the problems with accepting paraphysics as a legitimate discipline in science seems to be that psi phenomena conform to neither accepted natural laws as defined by modern physics nor the time tested methods and procedures known as the scientific method. For example, psi events cannot be repeated upon demand in the laboratory. So psi and paranormal phenomena do not conform very well to the experimental method, which has been the basis of modern science for several centuries. This fact makes it difficult to determine the properties of psi phenomena as well as the conditions under which psi phenomena most likely occur. Nor do psi phenomena conform to accepted natural laws which makes it difficult to develop a theory for psi which conforms to our present worldview in physics. However, this last fact should pose absolutely no problem for science. Obviously, psi is something with which physics has not yet had to deal in any substantive manner so there is no reason, philosophical or otherwise, to believe that psi should conform to present physical laws, just as there is no reason to believe that every imaginable phenomenon in the universe can be explained by our present laws of physics. In the absence of a theory of psi within the context of our present worldview, some scientists and scholars are hopeful that the new theories of physics that now seem to be emerging will eventually explain psi phenomena.

Even the presently accepted theories of physics have not been without serious problems for the past several decades. In spite of the successes of modern physics, many scientists are uneasy with the present state of physics. In his book *A Unified Grand Tour*

of Theoretical Physics, Ian D. Lawrie has confirmed the uneasiness felt by physicists regarding the present state of the science.

> While the mathematical developments which constitute quantum mechanics have been outstandingly successful in describing all manner of observed properties of matter, it is fair to say that the conceptual basis of the theory is still somewhat obscure. I myself do not properly understand what it is that quantum theory tells us about the nature of the physical world, and by this I mean to imply that I do not think anybody else understands it either, though there are respectable scientists who write with confidence on the subject. (Lawrie, p.95)

This same quotation has been used by "Physics Facts and Speculations." Budnik elaborated further on the idea when he states that

> Most (physicists) are complacent. Many revel in the thought that modern physics has transcended classical ideas. The recent books by (Roger) Penrose are a good example. This though is far more flattering to the ego than to believe something is fundamentally flawed in ones' understanding and to have no idea how to address the problem. The intellectual modesty and honesty of physicists like Lawrie is far more likely to lead to new physics than the arrogance of those who would dismiss the conceptual problems in physics. (Budnik, p.1)

Clearly, these physicists believe that there are serious conceptual problems in physics that are largely ignored by the complacent majority of physicists and philosophers.

Most of the problems in physics either stem from or are in some way related to Einstein's refusal to accept quantum mechanics as complete. Indeed, quantum mechanics is not complete. No theory that ignores one of the four fundamental forces (or interactions as they are now called) of nature can be considered complete and quantum theory ignores gravitation and space-time curvature on the atomic level. It is true that the gravitational affect within an atom is extremely small in comparison to the other forces acting within the atom, but the mass of the elementary particles which interact to form an atom is itself curved space according to the general theory of relativity, so even if the gravitational forces are negligibly small, the space curvature of elementary particles within the atom's structure cannot be ignored. The relationship between curvature on the atomic level and the quantum mechanical explanation of atomic structure that ignores that curvature thus introduces a paradox into physics which has gone unrecognized and subsequently eluded scientists.

This disparity is well recognized but unspoken in absolutely every attempt to unify relativity and the quantum as well as every attempt to derive a quantum theory of gravity. At this time, there is every reason to believe that fundamental changes in physics are in the offing and will have to be accepted before any such unification can take place. These fundamental changes in physical concepts will more than likely be so radical as to mark a limitation to physics as it is normally understood and thus represent a break between the physical and paraphysical. This is not paraphysics in the sense of using

normal physics to explain psi or other paranormal phenomena, but is instead a challenge to the fundamental concepts upon which physics has traditionally been erected. In this sense, some scientists have defined paraphysics as 'the physics of other worlds.' The physicist Victor Stenger has defined paraphysics in a similar manner, but for different reasons: "If physics is the study of the nature of matter, then we might term the study of a world beyond matter paraphysics.'" (Stenger, p.8) It should be clear from these considerations that the definition of paraphysics as merely the physics of paranormal phenomena is now inadequate. In fact, this short definition represents at least an oversimplification if not an outright tautology. You cannot use a word to define itself. So, if paraphysics is a form of physics, then you cannot use the word physics to define paraphysics. Another more accurate definition is required unless physics is itself defined in the process of defining paraphysics. If the new science that is evolving depends upon a radical break with the concepts of physics, than we will be dealing with a paraphysics of the normal in the future instead of dealing with a physics of the paranormal.

The definition of paraphysics as a study of the nature of other worlds, whether that study conforms to standard scientific practices such as the scientific method or not, indicates a new way of thinking in physics that reflects a fundamental change in attitude and worldview. Paraphysics cannot be assimilated completely within the present and past worldviews of science. Psi phenomena represent only one type of paranormal phenomena that will someday be discovered as we learn more of worlds other than our own. Even now, some theoretical physicists believe that attitudes toward some of the most fundamental propositions of our present worldview are in a state of flux. If true, the common worldview of science is already changing. Also, we must consider the possibility that should we ever discover other sentient beings, their own physics, which would be based upon their own unique perceptions of the world, could be radically different from our physics. We must prepare for that eventuality.

We have already reached the point where many physicists now believe that a grand unification theory involving as many as ten dimensions of space-time is in the offing. A may account for paranormal phenomena. It would seem that the time is ripe for a clear definition of paraphysics by the scientific community. Science is not now, nor has it ever been, static. It is progressive. So, it is not beyond reason to believe that a new branch of science could still evolve. Thermodynamics is only a century old while quantum mechanics and relativity physics are still younger. Physics itself did not emerge out of the hodge-podge of sciences that existed under the banner of natural philosophy until the middle of the nineteenth century. While there is concern in the scientific community that relativity theory and quantum theory are still at odds after six decades of philosophical debate and scientific research, there is no guarantee that the unification of relativity and the quantum will follow a neat pattern that fits into our present conceptions of physics, as adequately demonstrated by the development of ten dimensional theories of space-time. Given the existence of such theories, it might even seem that the word paraphysics would have to be invented if it did not already exist. All of these factors indicate that the waiting period is nearly over and the birth of paraphysics as a legitimate science is finally at hand.

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