

Something old, Something new,
Something borrowed, Something LONG past due!

An editorial

By James E. Beichler

By most accounts, December 31, 2000, ended a century of unbelievable and breathtaking scientific progress - that is - it would be unbelievable if we had not experienced and documented all the advances that the century held. Yet the new millennium which began on January 1, 2001 - disregarding any arguments that the millennium actually began a year earlier - seems to offer even greater promise than the last century, especially in the field of physics which is considered the most fundamental of the sciences of nature. The twentieth century changes in physics were so radical that historians and scholars alike have termed them a second scientific revolution, while many believe that a new scientific revolution is about to occur.

From a simplified (and hopefully not an over-simplified) point of view, the twentieth century began with the development and establishment of the quantum and relativity theories as the two legs of modern physics. By mid-century, quantum theory seemed poised to conquer all of physics at the expense of relativity theory. This dominance of physics by quantum theory came much to the consternation of Albert Einstein who was instrumental in the early development of both the quantum theory and relativity. In spite of his many fundamental contributions to modern physics, many scientists considered Einstein an eccentric for the last thirty years of his life, a time when he searched for a 'unified field theory' based upon the continuity of the field and refused to embrace the more dominant philosophical interpretations of quantum mechanics. But a decade after Einstein's death, the space program and other technological advances placed new emphasis on general relativity and the relativistic point of view, causing ripples throughout the quantum community.

After the 1970s, quantum physicists finally came to the conclusion that Einstein's search for a 'unified theory' was indeed the correct path for advancing physics, but contrary to Einstein they thought the field should be based upon the discrete quantum model of physical reality. The quantum physicists thus developed their own brand of 'unified theories' based upon the 'quantum field' model. This change of goals by the quantum physicists vindicated Einstein's search for a unified field, but directly contradicted his conceptual basis for developing a mathematical model of that field.

In the waning decades of the twentieth century, new trends in physics further ensconced the quantum theory and its unique hybrid field point of view, even as a few serious scientists resurrected philosophical problems that the quantum theorists had earlier left unanswered in their hectic pursuit of practical applications during quantum's march toward conquering the physical universe. In essence, the lords of quantum theory declared fields 'good' and proper. They adopted the concept of 'fields' because the equally successful relativistic outlook is based upon the field concept, which in itself seems contradictory since fields are continuous by definition and the quantum is discrete. Quantum theorists have automatically and without question assumed the absolute priority of the discrete view of reality over the continuous view in all of their later deliberations upon nature, but many scientists have begun to question this attitude as well as the absolute dogmatism of the quantum (discrete) point of view.

Within the context of the slowly changing attitudes within the physics community, the discerning scholar can detect a subtle but intimate connection with other trends in the advance of science, whose coming nexus would seem to indicate a wholesale revolution in our fundamental understanding of nature in the making. The first notable trend began with David Bohm's criticisms of the Copenhagen Interpretation of quantum theory. Through a complicated evolutionary process, Bohm's criticisms evolved into his concept of a "quantum potential field" and then into his implicate/explicate model of the universe, offering a new and unique way to look at our physical universe. A newer trend developed from the general acknowledgment that 'consciousness' is necessary to 'collapse the wave function,' or otherwise choose between the infinite number of quantum states that exist prior to the single quantum state of measurement that marks an event in our physical reality. Through this circuitous path, the concept of 'consciousness' and its relationship to the physical world have burst onto the stage of physics.

A third trend began with the reintroduction of the concept of higher-dimensional hyperspaces into modern physics, while a fourth trend can be found in the suspicion and personal experience of certain misunderstood subtle influences on physical reality, traditionally called paranormal phenomena. The earlier belief in these subtle influences, often categorized under the banner of extrasensory perception or psychokinesis, have refused to fade from the edge of scientific inquiry in spite of an onslaught of protests from a few scientists and a group of determined self-appointed skeptics who now police science and try to dictate what is and is not considered good science by scientists themselves.

So we begin our third millennium bogged down by unanswered questions and growing concerns regarding the scope and range of validity of 'normal' physics. These questions have kindled doubts as to the fundamental nature of the quantum in understanding physical reality just as they have raised the hope of finding a more fundamental understanding of nature and thus portend a new revolution in how we interpret and understand physical reality. It would seem that the usual quantum solutions could not completely answer the nagging questions about reality that were raised in the past let alone solve the new problems presented by advances in the sciences of mind,

consciousness and the paranormal. Nor can the older philosophical problems that have plagued quantum physics be so easily dismissed simply because quantum theory has been so successful from the practical point of view. Any and all doubts about the fundamental nature of the quantum have become entangled with other trends in physics as well as the growing interest in general relativity and relevance of concerns about the large-scale (non-quantum) structure of the universe. Roger Penrose has rightly claimed that there are circumstances where the predictive accuracy of general relativity exceeds that of the quantum field theories, a fact which further erodes many of the claims that quantum theory is more fundamental than relativity because of its phenomenal accuracy. On the other hand, the scientific community must also contend with the simple fact that quantum theory has failed to unify physics under its banner after several decades of trying. So, many scientists are beginning to look elsewhere for clues to the ultimate solutions of the universe, or, as W.K. Clifford once stated the problem, "solving the universe."

The slowly growing trend toward accepting the scientific reality of paranormal phenomena is perhaps the most significant although radical of the trends confronting the evolution of a new scientific attitude toward our interpretation and representation of physical reality. What was once thought to be barely scientific, if scientific at all, the study of paranormal phenomena, has now reached a new level of scientific legitimacy, even though paranormal phenomena cannot be explained by the present theories of either classical or modern physics. In fact, there is a growing belief that 'normal' physics is incapable of explaining such phenomena. Several advances have brought about this new state of affairs.

First of all, Jessica Utts and her colleagues have conducted a meta-analysis of all parapsychological research conducted over a period of six decades and concluded that a small but significant effect of psi is displayed throughout the experimental efforts of the parapsychologists. Dean Radin's recent experiments using computers have demonstrated the reality of 'presentiment' or precognition while Robert Jahn and Brenda Dunne's experimental verification of the subtle influences of mind on machines has completed the verification of both ESP and PK effects. So, science now has credible evidence of what has been called psi, the commonly accepted term for such subtle paranormal influences, proceeding from three different directions.

Even 'normal' physics now seems to imply the reality of these subtle influences when Alain Aspect's experimental confirmation of non-local quantum influences over large distances is coupled with the necessity of consciousness to 'collapse the wave function.' Taken together, these findings imply that consciousness can act at a distance without intervening physical forces, which perfectly describes the physical action of psi. Yet even this is not enough to persuade the majority of scientists to accept the paranormal. Science just has another way of describing the paranormal phenomena, which renders the paranormal more probable from the purely scientific perspective rather than a 'proof', or demonstration of its existence.

In the long search for scientific evidence and validation of psi, the failure to find a theoretical basis, which can at least imply predictable experimental results, has posed the

most serious problem for researchers. This failure has acted as a prohibition to future research and thus enforced an unreasonable and unwanted bias toward experimental verification of the paranormal. The failure may have presented the greatest problem for both parapsychology and paraphysics in the past, but there are currently glimmers of emerging theories, which might explain psi or at least lend credence to the experimental work on psi. Superstring theories hold some promise, as do other hyper-dimensional theories. And, perhaps, more importantly, Bohm's implicate/explicate model can be used to explain some psi phenomena. A single theory of psi, or even several competing theories, would provide a solid scientific basis for the further acceptance of psi within the scientific community as well as spawn and influence new avenues of research, a necessity for any consideration of the third scientific revolution that is expected in the near future. And paraphysics, under the guise of a new and more comprehensive definition, will be a part of this science of the future. There can be no doubt that paraphysics has now matured to the point where a professional and scholarly scientific society dedicated to the new scientific discipline of paraphysics, has become a necessity and the first order of business should be to establish the limits and scope of the new science.

In the past, paraphysics has been narrowly defined as the study of those parascientific (paranormal) phenomena, or aspects of them, which can be viewed as extensions and generalizations of physical phenomena. It is especially concerned with the relationships between psychical research and physics and with those physical processes occurring in living organisms that appear to differ in kind from those occurring in inanimate matter. For example, it includes within its scope the phenomena of dowsing, physical mediumship, the survival of death, and also the physical aspects of parapsychological phenomena and of paranormal healing. However, paraphysics can now be more broadly defined as logical study of nature, our world and the physical universe, which goes beyond normal physics.

'Normal' physics, including both the classical and modern, has traditionally been based upon the reduction of phenomena to matter and motion against the common background of space and time. More recently, physics has been defined as the science that studies the interactions between energy and matter. In either case, matter is placed at the very foundation of normal physics. So, any study of the physical nature of reality that attempts to either identify or define a more fundamental level of reality than matter itself, and/or motion and energy, is by necessity a paraphysics. On the other hand, the physical phenomena constituting paraphysics are still 'natural' although not normally covered by physics, so paraphysics is still a branch of PHYSICS in a much larger sense of the word. Put in simpler terms, (normal) physics is a science which explores the fundamental aspects of a combined material and physical reality while paraphysics explores the physical but non-material areas of reality, so both are 'natural' in our experience and thus equal parts of PHYSICS.

Paraphysics not only includes the physics of the paranormal or psi phenomena as traditionally described, but also the physics of real hyperspaces which exist beyond the normal range of our five senses. The physics of consciousness and related concepts are also included within the realm of paraphysics since such 'things' cannot be quantitatively

measured, as we understand and use the word 'measurement' in 'normal' physics. But these 'things' still have a physical presence and affect our physical world. Whether any particular newly discovered phenomenon should be relegated to physics or paraphysics can only be determined by the final physical explanation of that phenomenon, so the same unexplained phenomena can be initially studied from the different perspectives of both 'normal' physics and paraphysics.

There is most assuredly a historical imperative toward developing a new science of paraphysics, but this paraphysics will not be the same as the old 'paraphysics' which most scientists, including those who have shown an interest in the paranormal and parapsychology in the past, have rejected. Many scientists and scholars, who otherwise believe in or work towards a theory of the paranormal, do not believe that paraphysics is a valid, individual or unique science. They believe that paraphysics will eventually become 'normal' physics when a physical explanation of the paranormal is found. The same is true of parapsychology in its own area of expertise; parapsychology will eventually reduce to 'normal' psychology. So, the scientists and scholars who argue against using the terms paraphysics and parapsychology do not really understand what the new paraphysics entails.

These scientists and scholars do not realize that they subconsciously assume that the paranormal will eventually be reduced to what is presently 'normal,' especially considering that there is no clear definition of what is 'normal.' Their basic assumption, whether rendered consciously or subconsciously, has no basis in reality. In fact, it is quite probable and more than likely quite certain that 'normal' science, either as it is currently understood or as it will become in the future, will never be able to explain the paranormal. In nearly all if not all cases, the known physical properties of paranormal phenomena so completely contradict the fundamental tenets upon which 'normal' science presently rests that only something 'beyond' physics as we presently accept the term will ever be able to account for these natural phenomena. This fact alone implies the rise of a new and future comprehensive PHYSICS that will consist of both the 'normal' and 'paranormal' aspects of physical reality and out of which psi will emerge as a natural consequence of physical reality.

On the other hand, many scientists do not take into account the fact that 'normal' science changes and eventually evolves (or revolves) into something so totally different from previous 'normal' sciences that the fundamental basis of their science will radically change into a form unacceptable under the older definition of their science, a change so radical that it requires a new name not just a shift in attitude. What everyone needs to realize, a fact that most scientists refuse to even consider, is that future physics will go so far 'beyond' what is now 'normal' that the older traditional concept of 'physics' will no longer apply within the newer context of a more comprehensive view of physical reality. Present science is not immutable and present trends in science as a whole, indicate that our newly evolving science is not just a science of the paranormal, but a science built upon a new fundamental model of physical reality which will include consciousness, and by way of consciousness it will include psi at the most fundamental level of physical

reality. The scientific community, as a whole, will eventually come to this same conclusion, but probably not before the changes are complete and then only in hindsight.

So, within this context, an institutional body supporting the new science of paraphysics has fast become a necessity. To fill this role, a new International Society of Paraphysics has been proposed. Similar institutions have long been associated with the development of new branches of science as well as the development of science itself. The Royal Society and other groups were integral parts of the first Scientific Revolution while scientific societies and organizations as a whole have provided a strong voice for the various branches of science as well as a forum for new ideas. All current sciences are represented in some manner by corresponding organizations and paraphysics should be no exception to this trend.

Nor is the notion of a Society of Paraphysics a new idea. A group of scientists in Great Britain and North America began a Paraphysics Study Group (the P SG) in the mid-1960s, hoping that it would evolve into a Paraphysics Society by 1970. Unfortunately, insurmountable technical problems complicated this early development and the PSG folded without growing into a more comprehensive society. Perhaps such an organization was too much to hope for in 1970, but the principles and concepts upon which that attempt was based were still valid in spite of the failure of the PSG. Those same principles and concepts are still valid today, only amplified by the passage of time and progress of science. In fact, recent advances in physics have only increased the validity and need for a paraphysics society.

Small pockets of scientists conducting research in paraphysics have developed since 1970, each working independent of the others, so there exists a need to at least inform them of each others' research if not aid in coordinating their efforts. There are well know labs such as PEAR and well known independent researchers like Dean Radin, but there are also lesser known labs such as the Paraphysics Research Institute in Canada whose members may not be taking full advantage of the benefits afforded by an intellectual contact with their scientific peers and colleagues. The work of these independent researchers may well overlap so they certainly have a lot to gain from the knowledge of each other scientists' research. In the meantime, there are still other scientists who may be carrying on paraphysical research without even knowing of others' research and accomplishments in related areas. All such efforts need to be identified, publicized and documented and only an umbrella group such as a recognized Society of Paraphysics can accomplish these tasks.

Just as there is a need to coordinate the efforts of independent scientists and laboratories, there is an even greater and more pressing need for a forum to publish and disseminate documents and papers on paraphysics for a more general scientific audience. The present situation within the scientific community as a whole severely limits paraphysicists' access to widespread publishing and documentation of their research by providing only a few serial publications where papers are welcome. Foremost among these in the United States are the *Journal of Scientific Exploration*, published by the Society of Scientific Exploration, and *Frontier Perspectives*, published by the Center for

Frontier Sciences. But these publications and the organizations behind them serve a much broader audience than just paraphysics community alone and do not specialize in paraphysics. So a journal and yearly meetings for strictly paraphysical purposes is needed to supplement the efforts of these fine organizations.

Toward that end, the *Yggdrasil* was inaugurated in 1996. But it is now time for this simple journal to take on a larger role as a more comprehensive publication representing a larger segment of the paraphysics community. The first small step in this direction has already taken place. A large amount of historical documents in paraphysics are difficult if not nearly impossible for many researchers and interested scholars to obtain. So the *Yggdrasil* has begun a policy of providing these scarce documents for its readers by republishing older articles and books whose copyrights have expired as well as later documents whenever permission from the copyright holder can be obtained. These older documents will be published with editorial comments explaining how they relate to either modern research or the historical development of paraphysics. They will appear alongside articles covering new research and ideas within the field of paraphysics. In this manner, the *Yggdrasil* hopes to enlighten and teach its reading public and interested scholars, and thus best serve the general community of science.

What is proposed, then, is a merger, a marriage of sorts of the older ideas incorporated in an older concept of paraphysics with the newer ideas of research in theoretical physics. This wedding of physics and psi has much to offer scholars, the scientific community and the general shared knowledge of humanity: Something old (the shared inheritance of concepts related to psi), Something new (the birth of a new science), something borrowed (the past concepts of physics and science), and something long past due (the International Society of Paraphysics, a specific organization dedicated to the new PHYSICS as expressed by paraphysics).

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