# Parapsychology and the Paranormal - Part I  

I. Introduction The words "supernatural", "paranormal", and "parapsychology" are prime examples of oxymorons. Nature, by its extended definition, is all-inclusive and all-pervasive. Nothing is outside its orbit and everything that is logically and physically possible is within its purview. If something exists and occurs then, ipso facto, it is normal (or abnormal, but never para or "beyond" the normal). Psychology is the science of human cognition, emotion, and behavior. No human phenomenon evades its remit. As if in belated recognition of this truism, PEAR (the Princeton Engineering Anomalies Research laboratory), the ESP (Extra-Sensory Perception) research outfit at Princeton University, established in 1979, closed down in February 2007. The arguments of the proponents of the esoteric "sciences", Parapsychology included, boil down to these: (1) That the human mind can alter the course of events and affect objects (including other people's brains) voluntarily (e.g., telekinesis or telepathy) or involuntarily (e.g., poltergeist); (2) That current science is limited (for instance, by its commitment to causation) and therefore is structurally unable to discern, let alone explain, the existence of certain phenomena (such as remote viewing or precognition). This implies that everything has natural causes and that we are in a perpetual state of receding ignorance, in the throes of an asymptotic quest for the truth. Sooner or later, that which is now perplexing, extraordinary, "miraculous", and unexplained (protoscience) will be incorporated into science and be fully accounted for; (3) That science is dogmatically biased against and, therefore, delinquent in its investigation of certain phenomena, objects, and occurrences (such as Voodoo, magic, and UFOs - Unidentified Flying Objects). These claims of Parapsychology echo the schism that opened in the monotheistic religions (and in early Buddhism) between the profane and the sacred, the here and the beyond. Not surprisingly, many of the first spiritualists were ministers and other functionaries of Christian Churches. Three historic developments contributed to the propagation and popularity of psychical research: (1) The introduction into Parapsychology of scientific methods of observation, experimentation, and analysis (e.g., the use of statistics and probability in the studies conducted at the Parapsychology Laboratory of North Carolina's Duke University by the American psychologist Joseph Banks Rhine and in the more recent remote viewing ganzfeld sensory deprivation experiments); (2) The emergence of counter-intuitive models of reality, especially in physics, incorporating such concepts as nonlocal action-at-a-distance (e.g., Bell's theorem), emergentism, multiverses, hidden dimensions, observer effects ("mind over matter"), and creation ex nihilo. These models are badly understood by laymen and have led to the ostensible merger of physics and metaphysics; (3) The eventual acceptance by the scientific community and incorporation into the mainstream of science of phenomena that were once considered paranormal and then perinormal (e.g., hypnotism). As many scholars noted, psi (psychic) and other anomalous phenomena and related experiments can rarely be reproduced in rigorous laboratory settings. Though at least 130 years old, the field generated no theories replete with falsifiable predictions. Additionally, the deviation of finite sets of data (e.g., the number of cards correctly guessed by subjects) from predictions yielded by the laws of probability - presented as the field's trump card - is nothing out of the ordinary. Furthermore, statistical significance and correlation should not be misconstrued as proofs of cause and effect. Consequently, there is no agreement as to what constitutes a psi event. Still, these are weak refutations. They apply with equal force to the social "sciences" (e.g., to economics and psychology) and even to more robust fields like biology or medicine. Yet no one disputes the existence of economic behavior or the human psyche. II. Scientific Theories All theories - scientific or not - start with a problem. They aim to solve it by proving that what appears to be "problematic" is not. They re-state the conundrum, or introduce new data, new variables, a new classification, or new organizing principles. They incorporate the problem in a larger body of knowledge, or in a conjecture ("solution"). They explain why we thought we had an issue on our hands - and how it can be avoided, vitiated, or resolved. Scientific theories invite constant criticism and revision. They yield new problems. They are proven erroneous and are replaced by new models which offer better explanations and a more profound sense of understanding - often by solving these new problems. From time to time, the successor theories constitute a break with everything known and done till then. These seismic convulsions are known as "paradigm shifts". Contrary to widespread opinion - even among scientists - science is not only about "facts". It is not merely about quantifying, measuring, describing, classifying, and organizing "things" (entities). It is not even concerned with finding out the "truth". Science is about providing us with concepts, explanations, and predictions (collectively known as "theories") and thus endowing us with a sense of understanding of our world. Scientific theories are allegorical or metaphoric. They revolve around symbols and theoretical constructs, concepts and substantive assumptions, axioms and hypotheses - most of which can never, even in principle, be computed, observed, quantified, measured, or correlated with the world "out there". By appealing to our imagination, scientific theories reveal what David Deutsch calls "the fabric of reality". Like any other system of knowledge, science has its fanatics, heretics, and deviants. Instrumentalists, for instance, insist that scientific theories should be concerned exclusively with predicting the outcomes of appropriately designed experiments. Their explanatory powers are of no consequence. Positivists ascribe meaning only to statements that deal with observables and observations. Instrumentalists and positivists ignore the fact that predictions are derived from models, narratives, and organizing principles. In short: it is the theory's explanatory dimensions that determine which experiments are relevant and which are not. Forecasts - and experiments - that are not embedded in an understanding of the world (in an explanation) do not constitute science. Granted, predictions and experiments are crucial to the growth of scientific knowledge and the winnowing out of erroneous or inadequate theories. But they are not the only mechanisms of natural selection. There are other criteria that help us decide whether to adopt and place confidence in a scientific theory or not. Is the theory aesthetic (parsimonious), logical, does it provide a reasonable explanation and, thus, does it further our understanding of the world? David Deutsch in "The Fabric of Reality" (p. 11): "... (I)t is hard to give a precise definition of 'explanation' or 'understanding'. Roughly speaking, they are about 'why' rather than 'what'; about the inner workings of things; about how things really are, not just how they appear to be; about what must be so, rather than what merely happens to be so; about laws of nature rather than rules of thumb. They are also about coherence, elegance, and simplicity, as opposed to arbitrariness and complexity ..."

Reductionists and emergentists ignore the existence of a hierarchy of scientific theories and meta-languages. They believe - and it is an article of faith, not of science - that complex phenomena (such as the human mind) can be reduced to simple ones (such as the physics and chemistry of the brain). Furthermore, to them the act of reduction is, in itself, an explanation and a form of pertinent understanding. Human thought, fantasy, imagination, and emotions are nothing but electric currents and spurts of chemicals in the brain, they say. Holists, on the other hand, refuse to consider the possibility that some higher-level phenomena can, indeed, be fully reduced to base components and primitive interactions. They ignore the fact that reductionism sometimes does provide explanations and understanding. The properties of water, for instance, do spring forth from its chemical and physical composition and from the interactions between its constituent atoms and subatomic particles. Still, there is a general agreement that scientific theories must be abstract (independent of specific time or place), intersubjectively explicit (contain detailed descriptions of the subject matter in unambiguous terms), logically rigorous (make use of logical systems shared and accepted by the practitioners in the field), empirically relevant (correspond to results of empirical research), useful (in describing and/or explaining the world), and provide typologies and predictions. A scientific theory should resort to primitive (atomic) terminology and all its complex (derived) terms and concepts should be defined in these indivisible terms. It should offer a map unequivocally and consistently connecting operational definitions to theoretical concepts.  Operational definitions that connect to the same theoretical concept should not contradict each other (be negatively correlated). They should yield agreement on measurement conducted independently by trained experimenters. But investigation of the theory of its implication can proceed even without quantification. Theoretical concepts need not necessarily be measurable or quantifiable or observable. But a scientific theory should afford at least four levels of quantification of its operational and theoretical definitions of concepts: nominal (labeling), ordinal (ranking), interval and ratio. (continued)

## About the Author

Health information from the National Library of Medicine. Easy access to Medline and Health topics, medical dictionaries, directories.