Psychic Research: New Dimensions or Old Delusions?*

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INTRODUCTION

No field of scholarly endeavor has proven more frustrating, nor has been more abused and misunderstood, than the study of psychic phenomena. Dealing as it does as much with impressionistic and aesthetic evidence as with analytical substance, and carrying by its nature strongly personal and numenistic overtones, it has been incessantly prostituted by charlatans, lunatics, and sensationalists, categorically rejected by most of the scientific establishment, and seriously misunderstood by the public at large. The purpose of this presentation is to review some of the history, nomenclature, and contemporary serious effort in this area; to discuss whether, once the overburden of illegitimate activity and irresponsible criticism is removed, there is sufficient residue of valid evidence to justify continued research; and, if so, to suggest how this research might best be styled, facilitated, and evaluated.

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At the risk of some immodesty, it is probably worthwhile to set my remarks in the context of a bit of the personal history which leads me to this task. My formal training is that of an engineer and applied physicist, and the bulk of my research has concerned a sequence of topics in the broad domain of the aerospace sciences: fluid mechanics, ionized gases, plasmadynamics, and most recently, electric propulsion. My appointments have been primarily in the academic sector, at Lehigh, Caltech, and Princeton, where for the past eight and one-half years I have been Dean of the School of Engineering and Applied Science. This school, which currently enrolls 850 of the university's 4400 undergraduates, features a substantial amount of independent work in its curriculum, and it was in that context three years ago that I was requested by one of our very best students to supervise a project in psychic phenomena. More specifically, this young lady proposed to bring her talents and background in electrical engineering and computer science to bear on a study of controlled, low-level psychokinesis. Although I had had no previous experience, professional or personal, with such topics, for a variety of pedagogical reasons I agreed, and together we mapped a tentative scholarly path, involving a literature search, visits to appropriate laboratories and professional meetings, and the design, construction, and operation of simple experiments. My initial oversight role in this project led inexorably to a degree of personal involvement, and that to a

growing intellectual bemusement, to the extent that by the time this student graduated, I was persuaded that this was a legitimate field for a high technologist to study. It is in that spirit I have continued to consider the problem and in that tone I speak to you today.

To proceed with the effort, I obtained the appropriate approval from my university, assembled a small staff, and secured the requisite funding from a few private sources. I should emphasize that my fractional involvement with this program is quite minor in comparison to my other responsibilities, and that the work is still very preliminary and tentative, but it provides the base of cognizance for my broader remarks on the field.

I confess that I shall make these remarks with some trepidation, borne of previous unpleasant experiences. For example, an earlier lighthearted article in the Princeton alumni magazine[1] in which I attempted to share some of our experiences in this field with the university community brought an intensity and breadth of reaction for which I was totally unprepared, ranging from irresponsible and categorical condemnation on one extreme, to equally irrational messianic accolades on the other. Rather than precipitating further such distracting outbursts, I have largely avoided opportunities for public presentation, a guideline I am setting aside on this occasion only because I believe that this audience can have an unusually significant effect on the development

of the field by the manner in which it chooses to represent it to its respective constituencies. It is my request that you treat this as a tutorial presentation, hopefully contributing to your cognizance of, and attitude toward psychic research, rather than as any claim of specific individual achievement therein.

HISTORY

To get on with the matter in terms of a brief historical background, I would remind you that whereas human interest in psychic phenomena is at least as old as recorded history, clearly displayed in the cave drawings of ancient man, in varied articles of the early Greek, Roman, and oriental civilizations, in the Bible, and in medieval and renaissance art and literature, systematic scholarly search for understanding of these phenomena is just one century old. It was in 1882 that the Society for Psychical Research was founded in London, providing the first professional forum for presentation of controlled experiments in telepathy and clairvoyance. The American counterpart, ASPR, was formed three years later, with William James as one of its leaders. The most familiar and substantial academic effort in this country was initiated at Duke University in the 1930's, when J. B. Rhine and Louisa Rhine established a parapsychology laboratory and began publication of the Journal of Parapsychology. A second professional organization called the Parapsychological Association

was formed in this country in 1957, and in 1969 was recognized as an affiliate by the American Association for the Advancement of Science.

Over this first 100 years of scholarly effort, the field has attracted a significant number of eminent scholars from established fields. The SPR alone has numbered among its presidents three Nobel laureates, ten Fellows of the Royal Society, one Prime Minister, and a substantial list of physicists and philosophers, including Henry Sidgwick, William James, Frederic W. H. Myers, Lord Rayleigh, Edmund Gurney, Sir William Crookes, Sir William Barrett, Henri Bergson, Gardner Murphy, and G. N. M. Tyrell.

At the present time, there are seven English language journals covering this field, supplemented by numerous less formal magazines and countless books of widely varying quality and relevance. Research activity is reported from over twenty U.S. universities and colleges, and many foreign institutions, but in most cases it is of very small scale. There are very few credible academic programs of study, although some fifty M.A. and Ph.D. theses have been accepted on psychic topics at reputable universities over the past forty years. (Cambridge University has just awarded its first Ph.D. for a thesis in this area.)[2] Some ten research institutes and private corporations in the United States have also authorized publications and reports in the field. The extent of Eastern Bloc effort and of classified research in

this country are matters of considerable speculation on which I cannot comment with authority.

In many respects the present status and growth pattern of this field resemble those of the natural sciences in their earliest days, or perhaps even more those of the incubation of clinical psychology, in terms of the absence of replicable basic experiments and useful theoretical models, the low level of financial support and internal professional coordination, and the low credibility in the academic establishment and public sectors.

NOMENCLATURE

For purposes of constructing a concise catalogue, I shall define psychic phenomena to include all processes of information and/or energy transfer which involve animate consciousness in a manner not presently explicable in terms of known science. By psychic research, I shall imply any scholarly study of such phenomena employing scientific methodology, or a quasi-scientific variation of it suggested later, as opposed to any dogmatic, ritualistic, or theological approaches. With this definition, the field may be roughly divided into two major categories: (1) extrasensory perception (ESP), which includes such information transfer processes as telepathy (perception of another's thoughts or emotions), clairvoyance (perception of hidden objects or events), precognition (perception of future events), and various animal ESP indications

(homing, trailing, group consciousness, etc.); and (2) psychokinesis, which subsumes a variety of effects wherein energy is transferred to a physical system, either in controlled or spontaneous effort, and over a wide range of energy levels. (A few types of psychic process, such as survival/reincarnation, psychic healing, out-of-body experiences, etc., while not fitting these categories quite so neatly, actually involve aspects of both at a more fundamental level.) Note that in this subdivision, the field conforms to the two major thrusts of present-day science and high technology, i.e. the extraction, processing, transmission, and storage of information, and of energy.

STATUS

In my opinion, a comprehensive, objective survey of the scholarly research into psychic phenomena over the past one hundred years would support the following conclusion: some of the results are suggestive, some even provocative; none is fully convincing in the traditional scientific sense. Obviously, more extreme opinions have been voiced on either side of this position. On the one side, there are zealots who claim the case has been made, by their own experiments or others; I cannot claim that for my own work, or for any other I have seen. On the other side, there are critics who reject the field categorically for an assortment of reasons, including instances of outright fraud; naiveté of method, such as

sensory cueing of subjects, application of improper statistics, or other theoretical incompetence; failure of replicability, evasiveness of the phenomena under close scrutiny, and sensitivity of results to the observer, all of which violate the scientific method; and the vague conviction that since nothing totally convincing has been demonstrated during this century of study, the domain must be fundamentally invalid.

In my view, all of these criticisms are justified to some degree, but in some cases they have been overworked. This field, by the nature of its phenomena and its inherent numenistic overtones is immensely vulnerable to fraudulent exploitation and naive gullibility, and such have indeed prevailed to a distressing degree. Yet, it seems shortsighted and irresponsible to tar all sincere and scholarly work with this brush. To my knowledge, there have been no totally replicable experiments yet performed; what yield there has been has been anecdotal, or at best, statistical. It should be noted, however, that numerous areas of modern science percolate contentedly on less statistical yield than is offered by some of the better psychic studies. The sensitivity of psychic experiments to the particular observer could indeed be indicative of fraud or delusion; but it could also be an important clue to the role of human consciousness in such processes. The frustrating evasiveness of the phenomena to more precise and refined experimental techniques is perhaps the most damning

criticism from a scientific standpoint; yet even this may offer a legitimate indication of a basic characteristic of the processes: e.g., just as great art, great music, or great creative thought in general may be stifled or sterilized by excessive analysis or constraint, so psychic effects may be intrinsically casual and free-flowing, rather than deliberate. Finally, the complaint that enough effort has already been squandered on this psychic goose-chase could be ameliorated by the recent availability of far more precise instrumentation, and far more powerful theoretical tools and data handling methods than have heretofore been deployed.

On balance, then, categorical rejection seems to me equally as untenable as blind acceptance. Rather, I prefer an attitude which first strips away the overburden of illegitimate and sloppy work, and then submits the residue to close individual scrutiny. This done, one finds a few--to be sure, a very few--experiments which provide sufficiently provocative anecdotal evidence to justify further serious and systematic study. From my own point of view, I am most interested in three such categories of study: (1) the so-called "remote perception" work of a number of laboratories, notably SRI,[3] Mundelein College,[4] and our own, which has provided an adequately large data base, of sufficiently high yield, to allow quantification and parametric correlations of the inexplicable results; (2) certain experiments in controlled, low-level psychokinesis, such as performed by physicists at the Mind

Science Foundation in San Antonio,[5] at Birkbeck College, University of London,[6] and also in our laboratory, which have the advantage of focusing on quantifiable physical systems, wherein the departures from classical behavior can be made more explicit; and (3) the rare and spectacular poltergeist events, or so-called recurrent spontaneous psychokinesis (RSPK), which in the magnitude of their effects, and the demonstrated correlations with neurologically extraordinary adolescents,[7] seem to offer rich, yet largely unutilized opportunities for insight.

This list is not exhaustive; others would point to an extensive series of "ganzfeld" or sensory deprivation studies of free response clairvoyance and telepathy as pioneered at Maimonides Hospital[8] and replicated at other laboratories[9]; to the systematic and conservative reincarnation studies at the University of Virginia[10]; to the modern psycho-physiological studies at Duke University[11]; or to a few other deliberate programs elsewhere.

NEW EXPERIMENTS

Since even the best extant research has been tediously slow to yield convincing results, if a new round of experiments is to be considered it seems important to reexamine, ab initio, the criteria, topic selection, and philosophical attitude that should prevail. For example, given the preceding pattern of

violations of the normal requisites for scientific credibility, what is the healthiest attitude toward data collection and assessment in this field? Should one reject out-of-hand all results that do not rigidly conform to the normal tenets of replicability and insensitivity to observer? Should one waive those requirements and attempt to theorize and deduce solely on the basis of anecdotal phenomenology? Or is there a useful intermediate position--a quasi-scientific approach, if you will--which while retaining full rigor in the experimental design and protocol, and still striving for some degree of reproducibility in the observations, tolerates imperfect replicability as possibly indicative of as yet unidentified parameters, of an intrinsically statistical nature of the phenomena, or even of a basic flaw or incompleteness in the established physical models?

Whatever the attitude, it seems clear that, at this primitive stage of understanding, the specific experiments selected should be as clearly posed and conceptually simple as possible, with a minimum of reasonable alternative interpretations of any positive results. In addition, they should lend themselves logistically to rigorous, tightly controlled experimentation, and demonstrate sufficient positive yield to permit accumulation of a significant data base and its subsequent correlation with variable experimental conditions. Given these attributes, it would also seem best to focus on those studies which seem to have the greatest significance

in terms of basic understanding of the phenomenology, contradiction of established scientific models, and ultimate practical application.

In all of the zeal for quasi-scientific rigor, there may be some risk of over-sterilizing the experimentation. If the phenomena derive to any significant degree from conscious or subconscious processes of the human mind, it is important that such not be ignored or inhibited in the design and operation of the experiments. More specifically, it is probably essential to include the insights, interpretations, and intuitions of those who have dealt most effectively in such processes, including not only the academics and professional observers, but most particularly those who have demonstrated creative capabilities in the generation of the phenomena. It is quite possible that the difference between a sterile experiment and an effective one of equal rigor lies in the more aesthetic aspects of its ambience and feedback than in the elegance of its instrumentation, and the former need to be well-tuned to the human subjects who are asked to function as components of the experimental system.

On the basis of this sort of logic, our own program at Princeton has selected two classes of experiments for its principal foci.[1] The major portion of the program revolves about a number of table-top experiments in controlled, low-level psychokinesis, using relatively simple physical systems--mechanical, optical, thermal, electrical, atomic, etc.--each of

which involves a specific element or process that is vulnerable to disturbance, and which signifies such disturbance by a relatively large change in some feedback display for the subject. So, for example, our interferometer can indicate a disturbance of one of its optical plates of less than one-millionth of a centimeter by a perceptible change in an attractive pattern of luminous concentric circular fringes displayed before the subject. Using this display much like a biofeedback indicator, that subject can then experiment with his own conscious or subconscious strategies for achieving the desired disturbance of the system. Other experiments monitor the deviations in temperature of thermistors to one-thousandth of a degree with a progressive pattern of small colored lights; the variations in electrical noise from a solid-state diode interface with an illuminated digital display; or the development of the statistical deflections of 10,000 marbles cascading through an array of obstructing pins by direct visual and photographic observation.

It is far too early to claim any definitive results from these experiments. On numerous occasions we have seen effects that to the best of our understanding and control of the prevailing conditions are classically inexplicable, but these effects vary from experiment to experiment, from subject to subject, and alas, from day to day. Whether substantial increase in our data base will sort any of this out remains to be seen.

The minor portion of our program addresses certain aspects of the "remote perception" problem mentioned earlier. In this type of study, the subject attempts to perceive aspects of a randomly selected target scene in which a colleague in the experiment, termed the agent, is immersed at a given time. Typically the percipient records his impressions of the target on tape, by sketch, or by notes, which then are rank-ordered against a pool of alternative targets by independent judges. Our particular effort has been to replace the necessarily subjective human judging process which is inherently vulnerable to personal biases and interpretations, by a more analytical method for evaluation of the degree of information transfer in such perception efforts. Briefly, the strategy involves coding of both the targets and perceptions in terms of some thirty binary descriptions, e.g. outside/inside; dark/light; noisy/quiet; motion/none; water/none; etc., and allowing a variety of scoring and ranking algorithms to derive quantitative indices of the quality and quantity of the information transfer.

Again it is too early to make firm claims, but this method clearly holds promise of reducing the ambiguity in interpretation of this class of experiment, which has shown some of the highest yields of any controlled psychic studies. It should be added that our particular experiments have dealt primarily with the precognitive mode of remote perception, wherein the percipient completes his report substantially

before the target site is selected. We find the yield to be at least as high as for similar experiments performed in "real time," and we prefer this mode for two reasons. First, the logical impossibility of the task is heightened, forcing the subjects to abandon various unproductive strategies for the perception and rely more completely on "paranormal" mental process. Second, the contradiction with established physical conception of space/time is more stark, hence potentially more generally illuminating.

THEORY

Next to the evasiveness of the phenomena under controlled experimentation, the second greatest frustration in the study of psychic processes has been the absence of viable theoretical models with which to begin the traditional dialogue between theory and experiment on which all scientific progress eventually depends. For perhaps naive reasons, early hypotheses tended to presume wavelike propagation of psychic effects, usually in the electromagnetic modes, but many experimental results have raised serious doubts that such models are tenable. Only recently has the attention of a significant number of theoretical physicists been drawn anew to this task, with the result that broader and more elegant representations are now being attempted which hold higher hope of accommodating the diverse and bizarre phenomena characteristic of this field.

Attempts at theoretical explication can proceed from any of several levels of presumption as to the fundamentality of the effects observed. For example, one may presume that:

a) the effects observed are illusory, e.g. artifacts of poor experimentation;

b) the effects can be assigned to known physical processes, not deliberately precipitated by the subject (e.g. heat transfer, vibration, aerochemistry, etc.);

c) the effects are deliberately precipitated by the subject, but involve only known physical and physiological processes (e.g. electromagnetic radiation from brain circuitry or intercardial potentials);

d) the effects are deliberately precipitated by the subject, but can be accommodated within existing physical formalism only after identification of heretofore unrecognized modes of energy/information transfer;

e) the effects cannot be handled within existing physical formalism (e.g. the fundamental laws need further generalization, perhaps similar to the evolution of classical mechanics into quantum mechanics, or into special and general relativity);

f) the effects, although observable under controlled conditions, cannot be handled within a scientific paradigm (e.g. they are intrinsically irreplicable).

Obviously the subtlety of the model required, and the breadth of its significance increase markedly as one proceeds through this hierarchy of possibilities.

Present theories of psychic phenomena tend to cluster into four or five broad groups which can only be described here in the most superficial terms. As mentioned, the first serious models dealt in terms of electromagnetic waves, usually in the very low frequency bands,[12] some versions of which proposed modulation of the earth's magnetic field, or of prevalent electrostatic fields of the ambient environment. Other types of geophysical waves have since been considered, such as geoseismic waves, infrasonic waves, and barometric fluctuations,[13] but all of these now seem to be fundamentally inadequate to deal with certain classes of psychic phenomena, most particularly precognition.

More recent efforts have involved applications of the formalisms of various other categories of physical mechanics, for example:

a) statistical mechanics and statistical thermodynamics, whereby the subtle interplay of the thermodynamic concept of entropy with information theory is allowed to take on a broader implication in terms of the role of human consciousness in influencing random processes[14];

b) hyperspace theories, whereby the basic laws of physics are recast and re-solved in more than the four coordinates of normal experience (3 space, 1 time), and the consequent new terms are applied to the representation of paranormal effects[15];

c) quantum mechanics, whose inherently probabilistic approach lends itself to representation of phenomena that depart significantly from strictly deterministic sequences of cause and effect[16-18];

d) holographic inversions, whereby all of reality is regarded as deployed in an infinite syllabus of amplitude/frequency information, and the brain is hypothesized to function as a Fourier transform device to provide the familiar space/time localized imagery.[19]

Although none of these has yet produced anything approaching a satisfactory theoretical model, each probably has something to contribute to our conceptualization of the phenomenological processes addressed. For example, their application in various forms to the anecdotal experimental evidence assembled to date leads me to speculate that the following rather drastic possibilities may be worthy of more detailed examination:

1) The phenomena may be inherently statistical, rather than directly causal, and we may be observing them "on the margin," i.e. the observed phenomena may represent marginal changes from normal behavior, on a very grand scale, and with fluctuation times which tax human observational capability.

2) Human consciousness may have an information-ordering capability that can be projected into an external system as well as received from it.

3) Quantum mechanics may be more than a system of physical mechanics; it may be a fundamental statement about human consciousness and perception processes, and the empirical pillars of this formalism, such as the uncertainty principle, the exclusion principle, the indistinguishability principle, and the wave/particle dualities may be more laws of consciousness than laws of nature.

4) Psychic processes may be inherently holistic, and thus the ultimate model may need to integrate both the scientific and the aesthetic aspects in order to identify the sources of the phenomena. That is, psychic processes may be manifestations of the intersection of the analytical scientific world with the creative aesthetic, and thus to represent them effectively, it may be necessary to balance insights of both perspectives, without sacrificing the integrity of either.

Clearly, any of these intuitions would have to be developed in far more philosophical and analytical detail before a trenchant theoretical model could emerge, but at this primitive stage it is probably healthy to consider a few such radical possibilities, along with more prosaic explications.

CONCLUSION

Let us close by returning to the basic questions which undeniably underlie our attention to this topic. Namely, are psychic phenomena real; and, if so, should they be

studied? The latter question begs a sequence of others, i.e. can such phenomena be studied systematically; would the knowledge derived from such study be significant; would that knowledge be useful; etc.? The honest response to all of these is that at present we simply do not know. The jury is still out--or more accurately, it has not even left yet; adequate evidence has not yet been presented to it. At this phase, therefore, everyone is entitled to his own informal and considered opinions on such questions, and is equally entitled to the tolerance of others toward those opinions.

But to the much broader, and indeed even more significant question: "do we have the right to inquire?", as a scientist and an academic I must make much firmer response, and if need be, defense. The fundamental requisites of scientific methodology: dispassionate rigor; humility in the face of observations; limitation on extrapolation of results; and openness of mind apply to any sincere scholarly endeavor, including psychic research. When these criteria are met, the results should be heard openly and fairly.

And these criteria are equally appropriate to the process of criticism. When they are honored, that criticism can play a healthy and constructive role. But when the criticism lacks any of these; when it is tainted by categorical rejection, guilt by association, or sloppy logic, it should be at least as suspect as the object of its attack.

I have spoken to you thus not as an advocate of psychic phenomena as valid science, but as an advocate of the right--indeed the obligation--of science to inquire into this field, with the same diligence, patience, integrity, openness, and tolerance--in both its study and in its criticism--that have characterized its noblest achievements of the past.

As recorders, transmitters, and interpreters of such activities for the public benefit, you have the same right, and--if you will permit me--the same obligation, to maintain that same high tone.

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REFERENCES

1. Jahn, Robert G. Psychic process, energy transfer, and things that go bump in the night. Princeton Alumni Weekly, 1978, 79, S1-S-12.

2. Evans, Christopher. Interview Carl Sargent. OMNI, 1979, 2, 81-82, 106-107.

3. Puthoff, H. and Targ, R. A. A perceptual channel for information transfer over kilometer distances: historical perspective and recent research. Proc. IEEE, 1976, 64 (3), 329-354.

4. Dunne, B. J. and Bisaha, J. P. Precognitive remote viewing in the Chicago area. Journal of Parapsychology, 1979, 43, (1), 17-30.

5. Schmidt, H. A PK test with electronic equipment. Journal of Parapsychology, 1970, 34, (3), 175-181.

6. Hasted, J. B. Paranormal metal bending. In The Iceland Papers, A. Puharich, ed. Amherst, Wisconsin: Essentia Research Associates, 1979.

7. Roll, W. G. The Poltergeist. Garden City, N. Y.: Nelson Doubleday, 1972.

8. Honorton, C. Psi and internal attention states: information retrieval in ganzfeld. In Psi and State of Awareness, Shapen, B. and Coly, L., eds., New York: Parapsychology Foundation, Inc., 1978.

9. Sondow, N. Effects of associations and feedback on psi in the ganzfeld. Journal of the Society for Psychical Research, 1979, 73, 123-150.

10. Stevenson, I. Twenty Cases Suggestive of Reincarnation. Virginia: University Press of Virginia, 1974.

11. Kelly, E. Kanthamani, H. Child, J. L., and Young, F. W. On the relation between visual and esp confusion structures in an exceptional esp subject. Journal of the American Society for Psychical Research, 1975, 69, 1-32.

12. Ryzl, M. A model for parapsychological communication. Journal of Parapsychology, 1966, 30, Mar., 18-31.

13. Persinger, M. A. Geophysical models for parapsychological experiences. Psychoenergetic Systems, 1975, 1.

14. Puthoff, H. and Targ, R. Physics, entropy, and psychokinesis. Chapter in Quantum Physics and Parapsychology, L. Oteri, ed. New York: Parapsychological Foundation, 1975.

15. Private communications.

16. Oteri, L. ed. Quantum Physics and Parapsychology. New York: Parapsychological Foundation, 1975.

17. Whiteman, J. H. M. Quantum theory and parapsychology. Journal of the American Society for Psychical Research, 1973, 67, 341-360.

18. Walker, E. H. Consciousness and quantum theory. Chapter in Psychic Exploration, E. D. Mitchell, ed. New York: Putnam, 1974.

19. Pribram, K. H. A progress report on the scientific understanding of paranormal phenomena. In Brain/Mind and Parapsychology: Proc. of an International Conference held in Montreal, Canada, August 1978, Shapen, B. and Coly, L., eds., New York: Parapsychology Foundation, Inc., 1979.