

## The "Enemies" of Parapsychology

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**Abstract** — The author regards as "enemies" of parapsychological research (1) those critics who confuse parapsychology with popular superstition, (2) those parapsychologists who know all the pieces of evidence for the reality of psi effects but who lack the capacity to integrate and to evaluate that evidence as a whole, and (3) those professional psychics whose faltering attempts to apply psi for profit give the field a bad name. The author believes that parapsychology's urgent task is to bring mutual understanding between scientists and the public by exploring the obscure but real psi phenomena that give rise to popular superstition. He sees extrasensory perception and psychokinesis as evocable, operationally-defined psi phenomena. However, he rejects as a religious endeavor the search for logical proof of their reality and advocates, instead, a Bayesian summation of countervailing intuitive probabilities. The author rejects blind empiricism as a practical path to the utilization of psi. He offers several speculations regarding future discoveries in parapsychology, three of which are:

(1) Healing by self-hypnosis, as opposed to noncontact therapeutic touch, may be normal in an evolutionary sense.

(2) Psychoneuroimmunology and psi may play complementary roles.

(3) The principal future importance of parapsychology may be to allow scientific understanding of psi processes occurring within the human body.

### Definition

To minimize controversy, I shall write plainly, beginning with two definitions, so that you can know whom and what I am discussing.

By the word "parapsychology" I mean the scientific study of psychic or psi phenomena. By "enemies of parapsychology" I mean those sometimes friendly and usually well-meaning persons whose actions discourage the funding of parapsychological research; for I believe that today there are no barriers to progress in understanding psi phenomena except lack of money. In my judgment, we have proved that psi phenomena occur, and in the last two decades we have discovered how to do cumulative basic research.

### Satisfying the Professional Critics

The most formidable of the "enemies" of parapsychology are the professional critics who have made a career of misrepresenting and ridiculing the

field instead of acknowledging it as a legitimate area for investigation. The principal method of attack by these critics has been to blur or deny the distinction between the scientific and the popular approaches to psychic phenomena.

Perhaps the most egregious example of dedicated professional criticism of this field will be found in Chapter 9 of a report titled *Enhancing Human Performance* by the National Research Council, the principal operating agency of the U.S. National Academy of Sciences (Druckman & Swets, 1988). The flaws in that report have been discussed by Palmer, Honorton, and Utts (1989) and by McConnell and Clark (1991).

To the list of "enemies" of parapsychology I would have to add a few eminent scientists who, while they do not personally criticize the field, are willing to lend their names as sponsors of organized efforts to belittle this kind of research. Elsewhere, I have analyzed in detail these systematic attempts to denigrate parapsychology as a field of science (McConnell, 1987a).

The best way for parapsychologists to respond to the confusion between scientific parapsychology and popular superstition may be in two steps: (1) present the familiar idea that superstition is the attempt of uneducated people to deal with frightening events that they do not understand, and (2) explain that parapsychologists have found an important reality underlying popular occult beliefs. Thus, it becomes parapsychology's task to bring about a rapprochement between science and the public by exploring at a fundamental level those natural phenomena that give rise to popular occult superstitions.

### **The Prevalence of Psychic Experience**

Ordinary people who repeatedly observe extrasensory perception in themselves or in close friends cannot help but lose confidence in their scientific leaders who tell them that ESP is impossible. Of course, there are many other areas of science and technology that are alienating the nonscientist. These range from psychiatry in the courtroom to the radioactive and chemical contamination of our living space. However, among all such gaps between the pretensions of science and the reality of experience, psychic phenomena occupy a unique place, for they relate to our basic beliefs about ourselves in the universe.

It has been estimated that more than three-fourths of all Americans have occult beliefs of one kind or another. Many of these believers are of high socioeconomic status. One remembers, for example, how the wife of former U.S. President Reagan publicly confirmed that she guided the president's daily schedule by consulting an astrologer and saw nothing wrong with that. With occultism pandemic, it will be difficult to correct the occult beliefs of lay persons by education if our scientific leaders cannot draw a distinction between popular astrology and laboratory extrasensory perception.

If one grants the possibility that psi occurs, one may still remain unconvinced that psi is an important factor in the alienation of the lay public from science. If psi is weak and difficult to observe in the laboratory, how much of it

occurs spontaneously? I would like to propose a startling answer to this question.

On the one hand, it is agreed that scientists rarely knowingly experience spontaneous psi. In my own case, for example, I recall having experienced identifiable spontaneous ESP only once in my lifetime, and that was of a trivial and scarcely noticeable event.

On the other hand, after 40 years of conversations with persons who came to me because they were annoyed or frightened by their own psychic experiences, I am inclined to believe that spontaneous psi is commonplace among less analytic people in our society. Consequently, I suspect that scientists' neglect of psychic phenomena contributes significantly to the ever-growing gap between that small minority who believe that their views of reality are rationally based and the vast majority of our citizens who cannot distinguish between rationality and irrationality and who know only the reality of experience.

I shall have more to say later about the reality of experience. For the moment, however, I merely wish to acknowledge that we have no explanation for this seeming difference between thinkers and feelers as regards the experience of psi. Scientists would like to believe that this difference is simply a matter of who is more likely to deceive himself or herself, a scientist or lay person? However, it may also be true that scientists actually experience many instances of ESP which their training leads them to ignore. Or, what I believe is quite probable, there may be a generic difference in the psi ability of brains that emphasize analytic thinking and brains that emphasize feeling.

If blame must be placed somewhere for the persistence of antagonism between thinkers and feelers concerning the reality of psi phenomena, I believe it belongs on the scientists. Whether or not they privately indulge in a divinely-revealed religious belief, scientists, almost without exception, have declined to apply the methods of science to the relation of consciousness to the physical world.

If one does not believe in the reality of psi, this kind of talk will be regarded as fantasy. But if psi occurs, then urgent possibilities come into view. My point is simply this: Much hangs upon the question, "Do psi phenomena occur?" It is time that scientific orthodoxy should face this question honestly. Scientists who are concerned about popular antagonism toward science might do well to urge support of parapsychological research so that the public can know what to believe and what is false or uncertain, and so that the public's faith in the perspicacity of our scientific leaders will not suffer.

### **More Friendly Enemies**

I perceive as a unique and surprising class of "enemies" those parapsychologists who find themselves unable to make an overall evaluation of the evidence for psi phenomena. They agree that an anticipated but unexplained anomaly occurs repeatedly under specified laboratory conditions. Yet they say

that the evidence is inconclusive. If, after one hundred years of research in this field, prominent parapsychologists, for whatever reasons, take the position that we do not know if the phenomena occur, who can blame uninformed outsiders for relegating parapsychology to a back burner on the stove of scientific research? That, of course, is where many parapsychologists would like to keep it. Later in this paper I shall explain why I believe we can justly claim that there is no longer a reasonable basis for doubting the reality of at least some psi effects.

Still another class of enemies of parapsychology, in my opinion, are those lay persons who apply psi phenomena to make a living. These include those psychic healers, psychic finders, and future-tellers who advertise their services. These enemies seek publicity and compete with parapsychology for financial support even while they draw criticism upon parapsychology from our scientific leaders, who, for lack of interest, are unable to distinguish between scientific investigation and preparadigmatic application.

As adjunct to this class of enemy, I would list those foundation directors and private philanthropists who finance applied psi projects with insufficient understanding of science and no evident feeling for the experimental implications of what we have already learned in parapsychology. I shall speak later about the mutual importance of applied and pure research in parapsychology. First, however, I shall address the question of the adequacy of the proof of psi phenomena.

### **The Nature of Scientific Proof**

Psi is an anomaly because it is unexpected within the currently dominant worldview. But psi is more than an observational anomaly. It is evocable and operationally defined. Psi is the process in which consciousness directly gathers information from, or exerts a force upon, the world outside the human body without use of the body's sensorimotor mechanisms.

One cannot by logic prove the occurrence of an anomalous operationally-defined phenomenon. More specifically, one can never prove by logic that an unrecognized counter explanation based upon familiar principles does not exist for any experiment seeming to show psi. To put it briefly, one cannot logically prove nonexistence. I shall come back later to the question of how psi might be proven to occur.

A perfect experiment would be one that, when reported in the literature, would be accepted as undeniable proof of the occurrence of psi. The only kind of undeniable written proof is logical proof. Since we cannot prove psi's occurrence by logic, a perfect experiment will not be found in the literature, now or at any future time.

Nevertheless, before they will agree to the unqualified statement that psi phenomena occur, some parapsychologists and most critics of parapsychology demand the impossible, perfect experiment. Or, if it is not quite perfect, it must at least be "repeatable upon demand."

"Repeatability upon demand" falls under the idea of "predictability"; for one cannot have the former without the latter. In science, "predictability" usually requires or implies "theory," and "theory" is a form of "understanding."

Thus, we have four slightly different, but in some circumstances more or less equivalent, terms: "repeatability upon demand," "predictability," "theory," and "understanding."

None of these four conditions is required for proof of the occurrence of a phenomenon. Astronomers did not have to understand supernovae to be sure they existed. All that was needed was sufficient observation.

### The Observation of ESP

How do we know when there has been sufficient observation to establish the reality of a phenomenon? Even in astronomy this is not a logical question, but a matter for informed judgment.

As to extrasensory perception, there have been spontaneous cases reported throughout history among all races and cultures, and they are still being reported today. These cases involve both reputed psychics and ordinary people. It would be unscientific to ignore this evidence. Moreover, by statistical inference we have reason to believe that for many ordinary people minor instances of ESP occur at least several times a month. These instances can be identified with confidence only in those unusual cases when the facts are so convoluted that coincidence is not a reasonable counter hypothesis and where the surrounding circumstances accidentally conspire to eliminate logical inference as an explanation. These conditions are so rare that the actual number of psychic incidents must be much higher than the number recognizable by a parapsychologist.

Recent and historical records of spontaneous psi make a strong *prima facie* case for its reality. Nevertheless, one might excuse the skeptics if the matter rested there, as it did before the founding in England of the Society for Psychical Research. In the last one hundred years and especially in the last fifty, in the laboratory we have observed the extrasensory perception of symbols on hidden cards, of pictures concealed at a distance, and of thoughts existing only in someone's consciousness. We have detected ESP in persons in a normal wakeful state, or in hypnotic trance, or dissociated in the Ganzfeld condition, or dreaming in sleep. We have found laboratory evidence of ESP regardless of sex, age, intelligence, race, and mental health.

There have been more than a thousand psi experiments reported in peer-reviewed journals — some of them so carefully done as to be ridiculously meticulous (Honorton, 1987; McConnell, 1983b; McConnell and Clark, 1987). It has been shown by meta-analyses in the last five years that the overall success rate in psi experiments cannot be explained by the selection of favorable results for publication and that success is statistically unrelated to quality of experiment.

Taken separately, any one observation of ESP may have little to contribute to evidential proof. Taken together, the totality of observations is, in my judgment, conclusive. I believe that the day will come when, looking backward, historians will ask, "How could Twentieth Century scientists have been so blind as to reject psi?"

### **Countervailing Probabilities**

A crucial question is, of course, how can a multitude of unrelated observations be combined to tell whether psi occurs? Many years ago I outlined a conceptual answer to this question (McConnell, 1977). My ideas were not particularly original, but they were carefully organized, and they have never been disputed. Briefly summarized, my line of argument was this: To decide whether a phenomenon such as ESP is real, one must subjectively formulate, compare, and choose between two opposing independent probabilities, one of which seems to say that ESP occurs, while the other denies it.

We may begin as follows. For each observation of a supposed psychic phenomenon such as ESP we must estimate a subjective probability that the observation was the result of chance and/or observational mistakes. In making this estimate, we must lay aside all belief as to whether ESP does or does not occur. For a laboratory experiment this subjective counterexplanatory probability (mnemonic: SCEP) might be thought of as the customary null-hypothesis chance probability, plus estimated probabilities of fraud and of honest mistakes of all kinds. For example, if we judge an experiment to have been well done by a trustworthy experimenter, we might arrive at a subjective counterexplanatory probability as large as one in ten, even though the calculated chance probability was as small as one in ten thousand.

By itself, a counterexplanatory probability of one in ten for a single experiment is not very interesting. However, when such probabilities for all independent observations are multiplied together, the resulting overall subjective probability can be extremely small. This overall probability might be thought of as the reciprocal of the betting odds favoring ESP based upon all of the direct evidence. This is the first of the two probabilities that must be weighed against each other.

Of course, one must also take into account the indirect evidence. This can be represented by a second probability, the subjective antecedent probability (mnemonic: SAP) that ESP might be a real effect. This second probability is antecedent in the sense that it is derived from generalized experience and belief, including one's exposure to the opinions of others, rather than from ad hoc study of the phenomenon. Among educated people in our culture, the antecedent probability of ESP is usually quite small because it is based largely upon two things: (1) the generally adverse opinions of scientists, most of whom have not studied the evidence (McConnell & Clark, 1991), and (2) assumptions about the nature of ESP that are not supported by the laboratory evidence. If one adopts the prevailing negative opinion among scientists and if one has unreal expectations of how ESP would manifest itself if it were to

occur, one can defend a vanishingly small subjective antecedent probability for the reality of ESP. This might be thought of as the reciprocal of the betting odds *against* ESP based upon the *indirect* evidence.

By comparing the subjective counterexplanatory probability and the subjective antecedent probability, one can make a subjective decision as to the reality of ESP. This is not a logical decision but rather, the kind of practical judgment each of us makes every day in our lives. I want to emphasize that this kind of weighing of countervailing probabilities is something we do every time we choose any course of action and that our fortunes and our very lives often depend upon it. On the other hand, only theologians and mathematicians depend upon logical proofs, and their conclusions are always implied by their starting assumptions.

It is a strange fact that very few competent scientists have used the countervailing probability approach to parapsychology. It is strange because the mere existence of these two tiny contradictory probabilities demands attention. If an examination using the above principles were widely undertaken, I believe that scientists, generally, would find themselves agreeing that both extrasensory perception and psychokinesis have been shown to occur within the epistemological framework of Western science.

I do not expect skeptical scientists to sit down and numerically estimate intuitive probabilities. That is not the way scientists work. What I would expect is that all true scientists would regard parapsychology with an open mind — remembering that we understand nothing about consciousness as a property of physical matter, and that quantum mechanics has taught us that we cannot trust intuition to tell us the limits of reality. Also, I would expect true scientists to suspend judgment on the impressions they may have gained from the news media and from proponents such as me as well as from the professional critics of parapsychology.

That much I would expect of all scientists. I would hope for more from a few scientists who were curious about the role of consciousness in the universe, who were not overwhelmed by the need to publish or perish in their own specialty, and who were competent in elementary physics, psychology, and statistics. I would hope that these few scientists would look first at a careful selection of original experimental papers from the peer-reviewed journals of parapsychology and then — led by their captured imaginations — would look at the entire field of evidence, and would thereafter form a subjective judgment as to the probable reality of psi phenomena.'

This is the method of evaluation that I used some forty years ago when I bet my professional career on the proposition that, beyond all reasonable doubt, psi phenomena do occur.

### **Pure Versus Applied Research**

I promised earlier to discuss the relative need for pure and applied research in parapsychology. Let me say to begin with that I am not opposed to seeking immediate practical applications of psi. The question is one of the relationship

and relative importance of these two kinds of research. To illuminate this statement, may I turn to another field?

Before the science of chemistry began, physicians for several thousand years had practiced medicine with a certain degree of success. Nevertheless, what has happened in the last century in this field has dwarfed in importance all that went before, and has done so because basic research gave us scientific understanding.

A comparable situation exists with regard to psychic phenomena. Throughout the ages, psychic persons have offered inspiration and practical assistance to their fellow humans. Nevertheless, after millenia of applied psi we know next to nothing scientific about these phenomena beyond the fact of their occurrence. Moreover, the ethical teachings of Christ and other celebrated psychics are largely disregarded by the governing elites of the Western world on the ground that revealed religion contains many contradictions and has no basis in science. The need for understanding human nature has never been greater than today, but, if we believe that a direct search for clinically beneficial psi effects will lead to dependable control and to cultural acceptance, I think we are deluding ourselves.

The search for psi applications can, however, be useful if it points the way for basic research. Moreover, if it is carried out as a discipline within the tradition of Western science, it may yield some level of empirical understanding. Even so, brute-force empirical research in science is well known to be uncertain and painfully slow.

### Speculations

In closing, let me give my own partial vision of the role of experimental parapsychology as it may affect the future. I shall restrict myself mainly to the topics of healing and health.

From study of the relevant literature it became evident to me about a decade ago that consciousness can affect the body through psychokinesis. To some parapsychologists this has been obvious for a much longer time; while to others it is still not obvious at all. Moreover, not only can each of us affect our own body in this way, but some persons, who have a special gift for healing, can appreciably affect the body of another person directly by prayer, or suggestion, or whatever you may choose to call it.

I shall close by offering six speculations, of whose truth I am more or less convinced, and that may or may not become established after further research.

1. I am convinced by experiments already in the literature that psychokinesis is the essence of hypnosis and, hence by parsimony, that what theologians call "prayer" is actually psychokinesis (McConnell, 1983a, pp. 154-177).
2. I have no doubt that in the future, even as today, a few people using psychokinesis will experience dramatic healings by themselves or with the help of others, but evidence from the study of the placebo effect sug-

gests that these beneficial effects will be only contingently available and will be available only to a minority unless we achieve basic scientific understanding of the underlying mental phenomena.

3. I would guess that healing by self-hypnosis is a normal process but that the healing of another person by hypnosis, as in the noncontact "laying on of hands", is abnormal in an evolutionary sense. In the same vein, I infer that one of the challenges in future parapsychology will be to develop techniques by which each of us can accept such external psychokinetic influences as we desire and can reject or defend ourselves against the psychic evil intentions of others.
4. Since I believe in the reality of psychokinesis, I think it almost certain that there is a psi component to what orthodox scientists gingerly call "behavioral medicine." Psychoneuroimmunology has to do with brain-body mechanisms of healing. The accompanying consciousness-brain relationship is in the province of parapsychology (Braud, 1990; McConnell, 1987b, 1987c).
5. I would urge that we consider the possibility that the technical importance of parapsychology will derive from the fact that it is devoted to the study of psychokinesis and extrasensory perception outside the body, where one can hope to separate variables and to perform simple experiments to discover the scientific nature of psi, but that the ultimate utility of parapsychology will lie in the understanding it will give of the psi processes that occur *within* the human body.
6. And finally, I am not alone when I hope that great social benefit will someday follow from parapsychology's relevance to the question, "What are we?" Do our individual boundaries lie somewhere beyond our skin? How do we relate to our fellow human beings, and what are our natural obligations to one another?

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### Footnote

'Some parapsychological papers published since 1980 that should be of interest to skeptical scientists are: Alcock (1987); Bem and Honorton (in press); Braud (1990); Braud and Schlitz (1990); Dunne, Nelson, and Jahn (1988); Honorton (1985, 1987); Honorton et al. (1990); Honorton and Ferrari (1989); Honorton, Ferrari, and Bem (1992); Hyman and Honorton (1986); Jahn (1982); Jahn and Dunne (1986); May, Humphrey, and Hubbard (1980); McConnell (1983b, 1989); McConnell and Clark, (1987, 1990); Palmer, Honor-

ton, and Utts (1989); Radin (1988, 1990); Radin and Ferrari (1991); Radin and Nelson (1989); Rao and Palmer (1987); Schlitz and Gruber (1980, 1981); Schlitz and Honorton (1992); Schmidt (1981); Schmidt, Morris, and Rudolph (1986); Utts (1991). Included here are papers by Alcock and Hyman, two of the most virulent critics of parapsychology in modern times. Papers listed with an asterisk after the date are meta-analyses especially useful for surveying the field. Regarding meta-analyses in general, see Rosenthal (1986). Another 24 papers of substantial evidential significance published between 1965 and 1979 have been listed by McConnell (1983a, pp. 311-323).

## References

- Alcock, J. E. (1987). Parapsychology: Science of the anomalous or search for the soul? *Behavioral and Brain Sciences*, 10, 553-565.
- Bem, D. J. & Honorton, C. (in press). Does psi exist? Replicable evidence for an anomalous process of information transfer. *Psychological Bulletin*.
- Braud, W. G. (1990). Distant mental influence on rate of hemolysis of human red blood cells. *Journal of the American Society for Psychical Research*, 84, 1-24.
- Braud, W. G., & Schlitz, M. (1989). A methodology for the objective study of transpersonal imagery. *Journal of Scientific Exploration*, 3, 43-63.
- Druckman, D., & Swets, J. A. (eds.). (1989). *Enhancing Human Behavior*. Washington, DC: National Academy Press.
- Dunne, B. J., Nelson, R. D., & Jahn, R. G. (1988). Operator-related anomalies in a random mechanical cascade. *Journal of Scientific Exploration*, 2, 155-179.
- Honorton, C. (1985). Meta-analysis of psi Ganzfeld research: A response to Hyman. *Journal of Parapsychology*, 49, 51-91.
- Honorton, C. (1987). Precognition and real-time ESP performance in a computer task with an exceptional subject. *Journal of Parapsychology*, 51, 291-320.
- Honorton, C., Berger, R. E., Varvoglis, M. P., Quant, M., Derr, P., Schechter, E. I., & Ferrari, D. C. (1990). Psi communication in the Ganzfeld: Experiments with an automated testing system and a comparison with a meta-analysis of earlier studies. *Journal of Parapsychology*, 54, 99-139.
- Honorton, C., & Ferrari, D. C. (1989). "Future telling": A meta-analysis of forced-choice precognition experiments, 1935-1987. *Journal of Parapsychology*, 53, 281-308.
- Honorton, C., Ferrari, D. C., & Bem, D. J. (1990). Extraversion and ESP performance: A meta-analysis and a new confirmation. pp. 35-38 in L.A. Henkel and G.R. Schmeidler (eds.). *Research in Parapsychology*, 1990, Metuchen, N.J.: Scarecrow Press (1992).
- Hyman, R., & Honorton, C. (1986). A joint communique: The psi Ganzfeld controversy. *Journal of Parapsychology*, 50, 351-364.
- Jahn, R. G. (1982). The persistent paradox of psychic phenomena: An engineering perspective. *Proceedings of the Institute of Electrical and Electronics Engineers*, 70, 136-170.
- Jahn, R. G., & Dunne, B. J. (1986). On the quantum mechanics of consciousness, with application to anomalous phenomena. *Foundations of Physics*, 16, 721-772.
- May, E. C., Humphrey, B. S., & Hubbard, G. S. (1980). *Electronic System Perturbation Techniques*. (Final Report, 30 September 1980). Menlo Park, CA: SRI International.
- McConnell, R. A. (1977). The resolution of conflicting beliefs about the ESP evidence. *Journal of Parapsychology*, 41, 198-214. (Reprinted as chap. 16 in R. A. McConnell [Ed.] *Encounters with Parapsychology*. Pittsburgh, PA: Editor, 1982.)
- McConnell, R. A. (1983a). *Introduction to Parapsychology in the Context of Science*. Pittsburgh, PA: Author.
- McConnell, R. A. (1983b). Wishing with dice revisited. In R. A. McConnell (Ed.), *Parapsychology and Self-Deception in Science*. (pp. 29-53). Pittsburgh, PA: Editor.
- McConnell, R. A. (1987a). Forces of darkness. In R. A. McConnell (Ed.), *Parapsychology in Retrospect: My Search for the Unicorn* (pp. 180-206). Pittsburgh, PA: Editor.
- McConnell, R. A. (1987b). Unintended psychokinesis. In R. A. McConnell (Ed.), *Parapsychology in Retrospect: My Search for the Unicorn* (pp. 95-105). Pittsburgh, PA: Editor.

- McConnell, R. A. (1987c). Self-psychokinesis. In R. A. McConnell (Ed.), *Parapsychology in Retrospect: My Search for the Unicorn* (pp. 106-121). Pittsburgh, PA: Editor.
- McConnell, R. A. (1989). Psychokinetic data structure. *Journal of the American Society for Psychological Research*, 83, 217-226.
- McConnell, R. A., & Clark, T. K. (1987). Anomalous fall of dice. In R. A. McConnell (Ed.), *Parapsychology in Retrospect: My Search for the Unicorn*. (pp. 56-88). Pittsburgh, PA: Editor.
- McConnell, R. A., & Clark, T. K. (1991). National Academy of Sciences opinion on parapsychology. *Journal of the American Society for Psychological Research*, 85, 333-365.
- Palmer, J. A., Honorton, C., & Utts, J. (1989). Reply to the National Research Council study on parapsychology. *Journal of the American Society for Psychological Research*, 83, 31-49.
- Radin, D. I. (1988). Effects of a priori probability on psi perception: Does precognition predict actual or probable futures? *Journal of Parapsychology*, 52, 187-212.
- Radin, D. I. (1990). Testing the plausibility of psi-mediated computer system failures. *Journal of Parapsychology*, 54, 1-20.
- Radin, D. I., & Ferrari, D. C. (1991). Effects of consciousness on the fall of dice: A meta-analysis. *Journal of Scientific Exploration*, 5, 61-83.
- Radin, D. I., & Nelson, R. D. (1989). Evidence for consciousness-related anomalies in random physical systems. *Foundations of Physics*, 19, 1499-1514.
- Radin, D. & Utts, J. (1989). Experiments investigating the influence of intention on random and pseudo-random events. *Journal of Scientific Exploration*, 3, 65-79.
- Rao, K. R., & Palmer, J. (1987). The anomaly called psi: Recent research and criticism. *Behavioral and Brain Sciences*, 10, 539-551.
- Rosenthal, Robert. (1986). Meta-analytic procedures and the nature of replication: The Ganzfeld debate. *Journal of Parapsychology*, 50, 315-336.
- Schlitz, M. & Gruber, E. (1980). Transcontinental remote viewing. *Journal of Parapsychology*, 44, 305-317.
- Schlitz, M. & Gruber, E. (1981). Transcontinental remote viewing: A rejudging. *Journal of Parapsychology*, 45, 233-237.
- Schlitz, M. J. & Honorton, C. (1992). Ganzfeld psi performance within an artistically gifted population. *Journal of the American Society for Psychological Research*, 86, 83-98.
- Schmidt, H. (1981). PK tests with pre-recorded and pre-inspected seed numbers. *Journal of Parapsychology*, 45, 87-98.
- Schmidt, H. (1985). Addition effects for PK on prerecorded targets. *Journal of Parapsychology*, 49, 229-244.
- Schmidt, H., Morris, R., & Rudolph, L. (1986). Channeling evidence for a PK effect to independent observers. *Journal of Parapsychology*, 50, 1-15.
- Utts, Jessica. (1991). Replication and meta-analysis in parapsychology. *Statistical Science*, 6, 363-403.