

## RESPONSE TO RAY HYMAN'S REPORT

of September 11, 1995

"Evaluation of Program on Anomalous Mental Phenomena"

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September 15, 1995

Ray Hyman's report of September 11, 1995, written partially in response to my report of September 1, 1995 elucidates the issues on which he and I agree and disagree. I basically concur with his assessment of where we agree and disagree, but there are three issues he raises with regard to the scientific status of parapsychology to which I would like to respond.

**1. "Only parapsychology, among the fields of inquiry claiming scientific status, lacks a cumulative database (p. 6)."**

It is simply not true that parapsychology lacks a cumulative database. In fact, the accumulated database is truly impressive for a science that has had so few resources. While critics are fond of relating, as Professor Hyman does in his report, that there has been "more than a century of parapsychological research (p. 7)" psychologist Sybo Schouten (1993, p. 316) has noted that the total human and financial resources devoted to parapsychology since 1882 is at best equivalent to the expenditures devoted to fewer than two months of research in conventional psychology in the United States.

On pages 4 and 5 of their September 29, 1994 SAIC final report, May, Luke and James summarize four reports that do precisely what Professor Hyman claims is not done in parapsychology; they put forth the accumulated evidence for anomalous cognition in a variety of formats. Rather than dismissing the former experiments, parapsychologists build on them. As in any area of science, it is of course the most recent experiments that receive the most attention, but that does not mean that the field would divorce itself from past work. Quite to the contrary, past experimental results and methodological weaknesses are used to design better and more efficient experiments.

As an example of the normal progress of inquiry expected in any area of science, the autoganzfeld experiments currently conducted by parapsychologists did not simply spring out of thin air. The original ganzfeld experiments followed from Honorton's observation at Maimonides Medical Center, that anomalous cognition seemed to work well in dreams. He investigated ways in which a similar state could be achieved in normal waking hours, and found the ganzfeld regime in another area of psychology. The automated ganzfeld followed from a critical evaluation of the earlier ganzfeld experiments, and a set of conditions agreed upon by Honorton and Professor Hyman. The current use of dynamic targets in autoganzfeld experiments follows from the observation that they were more successful than static targets in the initial experiments. The investigation of entropy at SAIC follows from this observation as well. This is just one example of how current experiments are built from past results.

**2. "Only parapsychology claims to be a science on the basis of phenomena (or a phenomenon) whose presence can be detected only by rejecting a null hypothesis (p. 8)."**

While it is true that parapsychology has not figured out all the answers, it does not differ from normal science in this regard. It is the norm of scientific progress to make observations first, and then to attempt to explain them. Before quantum mechanics was developed there were a number of anomalies observed in physics that could not be explained. There are many observations in physics and in the social and medical sciences that can be observed, either statistically or deterministically, but which cannot be explained.

As a more recent example, consider the impact of electromagnetic fields on health. An article in *Science* (Vol. 269, 18 August 1995, p. 911) reported that "After spending nearly a decade reviewing the literature on electromagnetic fields (EMFs), a panel of the National Council on Radiation Protection and Measurements (NCRP) has produced a draft report concluding that some health effects linked to EMFs such as cancer and immune deficiencies appear real and warrant steps to reduce EMF exposure... Biologists have failed to pinpoint a convincing mechanism of action." In other words, a statistical effect has been convincingly established and it is now the responsibility of science to attempt to establish its mechanism, just as in parapsychology.

As yet another example, consider learning and memory, which have long been studied in psychology. We know they exist, but brain researchers are just beginning to understand how they work by using sophisticated brain imaging techniques. Psychologists do not understand these simple human capabilities, and they certainly do not understand other observable

human phenomena such as what causes people to fall in love. Yet, no one would deny the existence of these phenomena just because we do not understand them.

In any area involving the natural variability inherent in humans, science progresses by first observing a statistical difference and then attempting to explain it. At this stage, I believe parapsychology has convincingly demonstrated that an effect is present, and future research attempts should be directed at finding an explanation. In this regard parapsychology is on par with scientific questions like the impact of electromagnetic fields on health, or the cross-cultural differences in memory that have been observed by psychologists.

**3. "Parapsychology is the only field of scientific inquiry that does not have even one exemplar that can be assigned to students with the expectation that they will observe the original results (p. 18)."**

I disagree with this statement for two reasons. First, I can name other phenomena for which students could not be expected to do a simple experiment and observe a result, such as the connection between taking aspirin and preventing heart attacks or the connection between smoking and getting lung cancer. What differentiates these phenomena from simple experiments like splitting light with a prism is that the effects are statistical in nature and are not expected to occur every single time. Not everyone who smokes gets lung cancer, but we can predict the proportion who will. Not everyone who attempts anomalous cognition will be successful, but I think we can predict the proportion of time success should be achieved.

Since I believe the probability of success has been established in the autoganzfeld experiments, I would offer them as the exemplar Professor Hyman requests. The problem is that to be relatively assured of a successful outcome requires several hundred trials, and no student has the resources to commit to this experiment. As I have repeatedly tried to explain to Professor Hyman and others, when dealing with a small to medium effect it takes hundreds or sometimes thousands of trials to establish "statistical significance." In fact, the Physicians Health Study that initially established the link between taking aspirin and reducing heart attacks studied over 22,000 men. Had it been conducted on only 2,200 men with the same reduction in heart attacks, it would not have achieved statistical significance. Should students be required to recruit 22,000 participants and conduct such an experiment before we believe the connection between aspirin and heart attacks is real?

Despite Professor Hyman's continued protests about parapsychology lacking repeatability, I have never seen a skeptic attempt to perform an experiment with enough trials to even come close to insuring success. The parapsychologists who have recently been willing to take on this challenge have indeed found success in their experiments, as described in my original report.

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## REFERENCE

SCHOUTEN, SYBO (1993). "Are we making progress?" In *Psi Research Methodology: A Re-examination, Proceedings of an International Conference, Oct 29-30, 1988*, edited by L. Coly and J. McMahon, NY: Parapsychology Foundation, Inc., pgs. 295-322.

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