I BACKGROUND

Research efforts in our laboratory and elsewhere continue to provide mounting evidence for the existence of so-called "parapsychological," "paraphysical," or "psychoenergetic" processes. These processes include:

(1) The acquisition and description, by mental means, of information blocked from ordinary perception by distance or shielding and generally believed to be secure against such access.

(2) The production of physical effects such as the perturbation of equipment or instrumentation that appear to be well shielded against, or otherwise inaccessible to, human influence.

II OBJECTIVE

The objectives of this program are to quantify the characteristics of, and to investigate the mechanisms responsible for, psychoenergetic processes.

III TASKS

The following tasks are under investigation at the present time.

- Role of feedback
- Quantify judging (coding)
- Resolution (cannister experiment)
- ELF model
  - -- Shielded rooms
  - -- Submarine experiment
- Submarine tracking
- Physical effects
  - -- Strain gauge
  - -- Random number generator
- Training

IV PROGRESS TO DATE

A. Role of Feedback

Theoretical considerations[1*] have indicated the possibility that in remote viewing post-experiment feedback may be an essential element for

*References are listed at the end of this report.

success. We have to date completed two series of experiments with experienced remote viewing subjects to determine the effects of withholding feedback. Both were of the standard type[2] (remote viewing of target locations within a few miles of SRI, demarcated by an individual sent to the site). One consisted of a series of 6 trials, all with no feedback as to the target sites; one consisted of a series of 7 trials, 3 with feedback, 3 without, and a final one with feedback. Both of these series failed to give a single successful outcome in the no-feedback condition, while providing good results in the feedback condition. This result offers strong evidence that feedback is an essential element for successful remote viewing, whether the reasons be psychological or physical.

The next appropriate series of experiments with these normally successful subjects is to intermix, on a random schedule, feedback and no-feedback trials, to eliminate any effect of psychological expectation that a subject might have with regard to a given trial being carried out without feedback. If we again find no success in trials without feedback, while the subjects continue to demonstrate successful remote viewing in those experiments with feedback, this would indicate that there was some substantive, perhaps physical, basis for the effect of feedback on the experiments.

B. Quantify Judging

One of the most successful psychoenergetic processes is the remote viewing of target locations demarcated by some means, such as the presence at the site of an individual known to the "viewer." Unfortunately, this process--which works so well--results in narrative description that is difficult to assess in a quantitative manner.

To objectify the analysis of a single response from a subject during a remote sensing experiment, it is necessary to quantify the target content in some discrete way. From an examination of the data base accumulated to date it appears that certain recurrent target attributes (dichotomies) are frequently sensed correctly by our subjects (e.g., whether the target is inside/outside, wet/dry, man-made/natural, etc.) If each of these attributes is assigned a binary digit--a "one" if the attribute is present at the target site, and a "zero" if it is absent--we can, then, characterize a site by a binary code. The evaluation process becomes a more objective one of matching subject-generated and site-team-generated binary codes.

We have to date sent two analysis teams into the field with representative transcripts to generate lists of appropriate dichotomies which would appear to be optimum for this task. One team has completed their study; the other is in progress. Upon completion these lists will be played back over the data base accumulated to date to determine whether such a procedure is useful.

C. Resolution

In our standard remote viewing work natural outdoor target scenes are used. For these targets resolution on the order of inches to feet is sufficient. As a first step toward determining the limits of resolution, ten remote viewing experiments, with 1/8 mile separation between subject and target, were carried out with objects sequestered in standard film cans, requiring resolution on the order of millimeters to centimeters. The target of the day was chosen by a random number process from the target pool that was prepared in advance by an independent experimenter. All experimenters involved in carrying out the experiment were kept blind both as to particular targets and to the contents of the target pool as a whole. The experiment, analyzed on the basis of standard blind judging procedures, was a success, indicating that the remote viewing channel permits at least millimeter resolution at 1/8 mile distances.

D. ELF Model

The ELF hypothesis suggests that psychoenergetic processes are carried by electromagnetic waves in the frequency region below 1 kHz. Experimental support for this hypothesis is claimed on the basis of lower-than-inverse-square attenuation, low bit rates, and ineffectiveness of ordinary electromagnetic shielding; factors (among others) apparently common to both ELF and psychoenergetic processes.

Experiments to test the ELF model were designed, based on the use of a submersible and the use of special shielded rooms. Two standard remote viewing experiments, both successful, have been carried out to date using a HYCO Company submersible. Given a subject at a depth of 170 m, and assuming brainwave-type frequencies (10 Hz), theoretical calculations indicate a minimum attenuation of 22 dB (3.4 dB surface loss, 18.6 dB sea water attenuation loss, for maximum transmission grazing incidence TM wave).

To continue experiments in this vein, negotiation for access to a deeper diving submersible is underway between the sponsor and the CNO's office (OPS 23). Arrangements have also been made for use of special shielded rooms at the Naval Ocean Systems Center, San Diego, California, and these experiments are in the planning stage.

E. Submarine Tracking

Arrangements have been made for a cooperative effort between SRI personnel and personnel at the Naval Ocean Systems Center for submarine tracking experiments. The initial experiments are to involve tracking on the basis of targeting on a cooperative target person on the submarine (as in the standard remote viewing experiments).

In preparation for this experiment, three pilot series have been attempted in which a subject is asked to track a demarcation team

travelling in the local area. (The subject was to identify which grid square on a Palo Alto map contained the team in one case; triangulation by bearing compass was tried in a second case; discrimination of football field yard marker lines in a third.) Although there is evidence that the remote viewing channel is activated (yielding correct descriptions of the target site), subjects have not yet been able to show evidence of tracking as opposed to acquisition. Further strategies will be tried to determine whether tracking is a useful attribute of the psychoenergetic channel. If a strategy is found on the basis of local experiments, then the experiment involving the submarine will be pursued.

F. Physical Effects

The study of human/machine interactions as a psychoenergetic process has posed great difficulties for serious investigators. Among these difficulties are the combined facts that the reported effects tend to be small, and that the local environment has rarely been monitored for causes other than the proposed psychoenergetic ones. In addition, one finds that the strongest effects are reported as occurring with the most controversial and/or suspect subjects. Out of this collection of questionable experimentation (and often poor reporting) emergy, however, a few provocative experimental results that suggest that further careful examination may be worthwhile and possibly rewarding. Two of these are experiments with strain gauges and with noise-driven random number generators.

1. Strain Gauge Experiments

As a result of technical contacts with Prof. John Hasted, Birkbeck College, University of London, during an Iceland Conference on Physics and Parapsychology, we have developed an interest in attempting to confirm his claim that he has observed inelastic and elastic deformations of metal bars by some kind of remote human interaction. During these experiments the subjects are reported to cause effects without any physical contact with the metal.

In an effort to replicate Prof. Hasted's results, we have constructed an electrically shielded enclosure having more than 135 dB RF attenuation from 10 kHz to 10 MHz and plexiglass sides (to shield against air currents). Within this enclosure is an experimental system of resistive strain gauges attached to a thin metal bar. These are wired as a temperature-compensating bridge and connected to battery-operated amplifiers and recording instruments. At present we can detect changes in the length of the bar on the order of 500 angstroms and applied transverse forces of approximately 100 mg. To date, we have been successful in isolating and correcting several sources of artifact, and have obtained hours of artifact-free baseline operation. All of the data will be magnetically recorded for later computer analysis, and a simple stripchart record will provide immediate feedback to the subject of any changes in the bar. We are encouraged with the progress of artifact isolation, and we shall shortly begin to task subjects to attempt to perturb the isolated metal bar.

2. Random Number Generator Experiments

Another class of experiments that have been extensively reported are those that involve alleged human/machine interaction with electronic random-number generators. In these experiments, digital electronic noise derived either from a thermal noise source or from the decay of a radioactive material is monitored while a subject is attempting to alter the statistical properties of the noise distribution. The usual protocol involves providing visual and audio feedback signals, proportional to various statistical parameters, to a subject who is asked in a biofeedback scenario to concentrate upon the feedback signals and to alter them in a prescribed way. To date, there have been 54 such experiments reported in the literature, of which 35 report statistically significant effects, while none of these studies show similar departures from randomness during control runs without intended influence.

We are presently in the development stage of a microprocessor-based random-number generator. We plan to use three fundamentally different sources of random events to derive the digital electronic noise signal. The first of these is a diode designed by R. H. Haitz,[3] that is completely understood from both the quantum mechanical and solid state construction point of view. A second fundamentally different source of random events is to be derived from the decay of a single-transition beta emitter. Lastly, the entire system can be checked against a pseudorandom shift register, that constitutes a third source of random events. The device design has been completed, and construction is about to begin.

We propose to use this instrument first to attempt to confirm the existence of the claimed phenomenon, and, if it is confirmed, to begin to investigate theoretical implications with regard to various modes of human/machine interaction.

In addition to the possible use of sensitive instrumentation as targets for active perturbation efforts in, for example, a communication link, such study offers the potential for determining the use of such instrumentation as passive detectors of remote viewing phenomena "instrusion detection").

G. Training

We have begun a series of communication experiments involving the transmission, from one laboratory to another, of simple shapes (e.g., T, O, Δ), which also are of different colors for each shape. Data are being gathered to determine whether this type of testing can be developed into a training program. The series was designed to determine whether a gradient series of perception tasks that mimic the known development of ordinary perception would be useful in the development of paranormal perception. The decision to follow such a protocol was derived from data indicating that the laws of paranormal perception are congruent with, rather than skew to, the laws that govern ordinary perception, especially under conditions of subliminal presentation.

With this hypothesis, subjects were asked to differentiate among simple remote color card targets first on the basis of the dichotomy dull/bright, then with regard to shape, and only finally with regard to color, a progression noted in the development of ordinary vision.

Numerous data were gathered with two subjects who were experienced remote viewers. Analysis of the data, which shows learning in both cases, provides initial support for the hypothesis that progress in paranormal perception can be made on the basis of training drills designed from what is known about ordinary perception. Further data are to be collected.

REFERENCES

1. O. Costa de Beauregard, "The Einstein Paradox," Proc. 1977 IEEE International Conference on Cybernetics and Society (Technical Session on Research in Psychoenergetics), Washington, DC (September 20, 1977).

2. H.E. Puthoff and R. Targ, "A Perceptual Channel for Information Transfer over Kilometer Distances: Historical Perspective and Recent Research," Proc. IEEE, Vol. 64, pp. 329-354 (March 1976).

3. R.H. Haitz, "Controlled Noise Generation with Avalanche Diodes," IEEE Trans. on Electron Devices, p. 198 (April 1965).