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ESP Over Distance: Research on the ESP Channel

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ABSTRACT: Our literature survey and Experiment I indicated a decline in ESP scoring over distance. Experiments II and III reported here are essentially replications, except that instead of different persons displaying the targets in different locations, one person took them around the world. Target locations were New York, Paris, New Delhi, and Sydney; distance was varied from less than a mile to 10,500 miles. Subjects were blind to the distance for each session. Information given which could help subjects to scan the earth in search of the targets was varied from no information, to giving the direction of the route, to giving the names of the four cities. Subjective factors were measured. In Experiment II, 57 subjects did 912 runs; in Experiment III 70 subjects did 1,120 runs. ESP measures used were psi-hitting and psi-missing scores on direct hits and forward and backward displacements. Results were evaluated by canonical correlation and stepwise multiple regression analysis. A successive canonical analysis found that in Experiment II ESP was affected by distance on two measures, with chi squares significant at the .002 and .04 levels. One ESP measure which declined significantly in Experiment I, also did so in Experiment II; the decline was .70 units per 1,000 miles. There were no distance effects in Experiment III. The information given to subjects to reduce the ESP scanning area did not appear to influence results. ESP orientation seems to be based on associations between persons, rather than scanning. The mood of the person with the targets strongly affected the results, although the task was a clairvoyance one. Subject mood and position effects were also important.

INTRODUCTION

Sensory perception, which might appear to be a simple process, is actually a complex information system. Its two major parts are:

(a) Incoming stimuli, e.g., light waves reaching the retina. They are of course external to the organism. (b) The internal information processing system, with its many parts such as the physiological receptors and the neurological pathways in the brain.

Extrasensory perception is also an information system which may be divided into two corresponding parts: (a) The external reach to the stimulus object or person, and (b) the internal information processing system. With sensory perception we know what the external part of the system is. In extrasensory perception, the

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external part of the information system is largely unknown. We sometimes call it an X factor, or "channel." This term conforms to the language of information theory, but does not prejudice the nature of this channel. The internal information processing may well follow the normal psychology and physiology of the organism. It is the channel, extending outside the boundaries of the organism, which is the "para" of parapsychology. It is that part of ESP which has always excited the curiosity of philosophers and psychical researchers, with its implications for the nature of human personality and the universe around us.

In spite of the general consensus on the importance of the channel, there have been extremely few experiments devoted to it in parapsychology. Most research has dealt with the psychology and physiology of ESP or its relation to target material, but not with the channel. Perhaps it is the immensely radical "otherness" of the few known properties of the channel which makes most parapsychologists uncomfortable with it, as scientists are in general about psi processes. We feel that there should be a reassessment of research priorities in favor of work on the channel.

Our own efforts in connection with the problem of the channel factor include the following four projects:

1. A survey of relevant research papers in English, in which we found one property possibly attributable to the channel: attenuation of ESP information over distance (21).
2. Experiment I: A "blind" long distance experiment in which we balanced out many of the subjective factors which could obscure or mimic distance effects (24). We found a very slight but significant decline in ESP scoring over distance.
3. Experiment II: Reported here, in which the same person exposed the target cards at different distances. ESP orientation in territories unknown to the subjects (Ss) was also explored in this experiment.
4. Experiment III: Also reported here, which replicated Experiment II with a different person traveling with the target cards. It also explored further certain factors, notably selective field interactions, which were first encountered in Experiment II.

Our research on the ESP channel, then, began by investigating the relationship between ESP scores and distance, and came also to include two other factors related to the channel: ESP orientation and selective field interactions. We will consider each in turn.

Relationship between ESP and Distance

The decline or lack of decline of ESP over distance has long been debated in parapsychology and there is scarcely a topic which has been subject to more confusion. It was discovered relatively

early that ESP can overcome long distances. Early S.P.R. case collections (36) have cases of telepathy between England and Australia, for example. Usher and Burt (40) in 1909 demonstrated experimental ESP over considerable distances. The conclusion was reached that ESP can bridge distances around the world. From this, the further extrapolation was made that ESP is independent of distance. But if ESP can reach from London to Australia, this does not exclude the possibility that the amount of ESP information transmitted suffers some decline with distance. Very careful measurements are necessary in order to determine whether the level of ESP information decreases, increases, or remains the same when distance is varied.

As early as 1937 J.B. Rhine (27), and later others, recognized the possibility that subjective feelings, attitudes, and states could mimic distance effects in the test data. It was argued that people who are near to the targets might feel more confident that they could do the task, and by just that subjective factor alone might score better than those who are far away. The obvious answer to this very good argument is to do new experiments in which the Ss are kept blind in regard to distance; i.e., not knowing at which times the targets are far from them and at which times near; and in which the other subjective factors such as S fatigue or mood and position effects are balanced through experimental design or statistical methods. Experiment I was our first attempt to master these complexities.

Another source of confusion about distance and ESP has been of the logical kind. The statement that ESP is related to distance is a positive statement which needs a hard, empirical base to be accepted. It may appear that the contrary statement, that there is no distance effect, is less in need of proof, although of course this is not so. All known physical energies follow the energy expansion law which results in a decline in transmission over distance. If the ESP energy (or whatever we call it) does not follow that law, this will be an extraordinary break in the natural order. Prudence demands that we accept such a break only on the basis of hard evidence.

Is such hard evidence available? Our survey of the experimental literature published in English (21) found not a single experiment which could justify that claim, nor was there such a trend in the quantitative distance experiments as a group. On the contrary, the main trend was a decline. However, in our opinion the data were not good enough to enable us to accept or reject a distance effect because the designs of the experiments did not meet the objections raised by Rhine and others: they were not blind experiments and subjective states were not accounted for.

Belief among many parapsychologists that ESP is independent of distance is so strong that they demand harder evidence for a link between distance and ESP than for other findings. For example, the objection has been raised that Ss could ascertain our expectations for the experiment by means of ESP and on this basis could shape their attitudes and results. Exactly the same argument could be applied to any other parameter of an ESP experiment.

Perhaps one reason for the resistance to the possibility of a distance effect is the presumed metaphysical implications. We have repeatedly been asked whether the presence of a decline over distance indicates that ESP is carried by a physical energy, and whether the absence of such a decline indicates a non-physical energy, or the spiritual nature of ESP. We feel that it is not necessary to draw such conclusions from the presence or absence of a distance effect. Dobbs (5) proposed a physical theory of ESP where its independence from space seemed to be incorporated. We know that ESP is at home in this world and deals easily with objects in space such as the cardboard and dyes of ESP cards. Indeed, the energies carrying ESP might have some psychological properties, and at the same time have relationships with the physical world. It would be wrong to build theories of the ESP channel based only on one of its properties, such as attenuation with distance. Theory building requires encompassing all available pertinent data.

ESP Orientation

In a previous publication (24) we reviewed the literature on experiments and spontaneous cases to determine the minimal necessary cues for ESP orientation. We found that ESP seems to be able to locate a target person or objects in the target person's vicinity provided that either of these four cues is given:

1. *S* is acquainted with the target person.
2. *S* has secondhand acquaintance with the target person; e.g., knows somebody who knows him.
3. *S* is familiar with the environment in proximity to the target person.
4. *S* is given a psychometric (token) object; i.e., a thing the target person has been in contact with for some time.

Since this publication, we have thought further about the nature of the psi process. There have been many speculations about it in philosophical terms, but apparently they have had very little impact on the actual progress of parapsychological research. More research-oriented conceptualizations are necessary. We will briefly consider the three principal types of hypotheses on the workings

of ESP, restating them in terms which we hope will make clearer some of their possible implications for research in general and the distance experiments reported here in particular. For simplicity's sake we will consider clairvoyance only.

1. *Bombardment hypothesis.* *S*'s personality does not reach outside its own skin to make extrasensory contact with the environment, but responds to incoming stimuli in much the same way as it responds to incoming sound or light waves in forming perceptions. As in sensory perception, the object is supposed to be actively emitting psi signals. The channel is independent of *S* and outside his organism; he is just the receptor of the stimuli. There are several theories as to how this takes place; e.g., Vasiliev suggests that the stimuli are carried by gravitational waves (41).

2. *Radar hypothesis.* This is the direct opposite of the bombardment hypothesis. *S* alone is active in the process, reaching out, contacting the object which is to be known, and bringing back the information. Examples of this kind of hypothesis are Rhine's concept of the "reach of the mind" (28) and the type of theory favored by Rao (26). Here each individual would have his own channel. The analogy would be to a radar beam which reflects back information on the object to the radar station.

3. *Network hypothesis.* This places the emphasis on the activity of the channel itself. It presupposes a transindividual information system to which *S* simply has to establish contact through his own link to the "telephone central." In prescientific times such a system has been postulated. In the Upanishads it is called *akasha*, where everything is registered and available to the yogins' consciousness. Some Christian theologians, e.g., Oesterreich (20), have called it "participation in the omniscience of God." Modern speculative theories have used very different terminology, e.g., Myers' metemeric hypothesis (17), Murphy's transpersonal clairvoyance (16), Tyrrell's "elsewhere" theory (39), and Carington's psychon theory (2).

What bearing do these hypotheses have on ESP orientation under the conditions of our distance experiments? All three experiments have a clairvoyance design, in which Ss have psychometric objects (index cards) from a person or persons who expose the targets (picture postcards) in different locations around the world. In experiments II and III, this person is the traveler (*T*). Ss also have his photograph and a short personality and biographical description of him. The targets are randomized by *T* at the site and placed face down in columns on the floor. Ss are given four hours in which to get their impressions of the targets. *T* makes no

attempt to "send" the targets, but simply remains in the room with them. He could not act as an agent even unintentionally, since he would have no way of synchronizing his sending with the thirty or forty Ss for that session who would be starting at different times and working at different rates. And he had no cues about the Ss which could orient his ESP to them.

It looks as though under these circumstances ESP as conceived by the bombardment hypothesis would have no chance of coming through. While this type of explanation of ESP might be feasible in a telepathy experiment or in a clairvoyance test where *S* was very near to the targets, it could not explain clairvoyant transmission from a distance. If all persons and objects emit extrasensory stimuli the problem of selection of the proper stimulus is immense. There are three billion people alone from whom to select, and a far greater number of animals and objects. Even if there were only a thousand stimuli from which to choose, there would be considerable interference between them and "noise" in the information system. Selection from billions of stimuli seems to be an impossible task for clairvoyance.

If the radar hypothesis applied, we would expect Ss to scan the area where the targets were expected to be found until the "radar beam" happened to contact the target or target person, recognized as such by the orientation cues. The likelihood of success in locating the targets should depend upon the size of the scanning area. In Experiment I, Ss were given the exact addresses of the places where the targets would be exposed. If this information was usable, it should have reduced the scanning task immensely. In Experiment II, half of the Ss were given no information at all about where *T* would be setting out the cards. The other half were given maps where the direction of his travel was indicated by arrows; we estimated that this would cut down the scanning area to one-third of the 200,000,000 square miles of the earth's area. In Experiment III, we named the four cities where the targets would be exposed, but did not give the addresses. If scanning, as implied in the radar hypothesis, was necessary, then Ss in Experiment I would have the greatest advantage, followed by the Ss in Experiment III, then by Ss with the arrow cue in Experiment II and finally by those without the arrow cue in that experiment.

As an analogy to the network hypothesis, we could use the "addressing system" of a computer, where each "bit" of information is so localized that it can be retrieved by a particular command. Besides the command panel, there is a very complex system of intermediate links and the memory bank which stores the bits of information. Another analogy would be human memory. If the *S* can by ESP establish his link with the network, the problem of

interference from competing stimuli or bits of information should not apply. Cues on the geographical location of the targets may be utilizable in the "addressing system," but it is possible that the psychometric object or information about *T* might be sufficient.

The possible attenuation of ESP over distance in these experiments also has implications for the three hypotheses. Under the bombardment hypothesis we would expect no ESP transmission at all because of the enormous difficulty for *S* to select the proper stimulus. But if this problem were surmounted, we would expect a relatively large decline over distance, comparable to the decline of known physical energies. This is because the bombarding ESP stimuli should be emitted from the targets in all directions. They should be densest immediately around the targets, but should become further and further separated from each other as they travel outward over great distances. Thus *S* would have a greater chance of being reached by the ESP stimuli when he is close to the targets than he would when far away.

We cannot predict with certainty the kind of distance effect that would be expected from the radar and network hypotheses. There might be no distance effects at all. If there are any, they might be expected to be greater for the radar hypothesis, which involves a two-way trip from *S* to target and back, than for the network hypothesis. While it might appear that the network hypothesis is incompatible with a distance effect, there might be a slight decline under this hypothesis if the ESP information has to pass through extra "relay stations" when the target is further from the *S*.

Selective Field Interactions

Our third line of attack on the problem of the channel in these experiments is the investigation of selective field interactions between Ss and *T* and their effects on scoring. In Experiment I, a different person sat with the targets in each location. Results differed from location to location, even apart from the distance effects. For example, the high-scoring Ss scored significantly in the negative direction on backward displacements in New York and significantly in the positive direction on this measure in Los Angeles. We felt that these scoring differences might be due to the different personalities of the persons who sat with the targets. These persons, and the *T* who replaced them in Experiments II and III, made no attempts to reach or to send to the Ss. Ss had been instructed simply to reach them via ESP and then to turn to the target cards in the room.

It looks as though these Experiment I scoring patterns are instances of the "experimenter effect" found by West and Fisk (42)

in their correspondence test and by other researchers after them. Apparently the personality of the experimenter can affect scoring. Rosenthal (32) has described such effects in psychology, where, however, the effects appear to be due to communication between *S* and experimenter on a sensory basis. In our distance experiments, there were no opportunities for such contact except by extrasensory means.

We hoped to avoid such effects by replacing the three persons in the different locations with one *T* who would take the targets around the world. Thinking that his transient emotional states might relate to subject scoring in addition to any effects of his stable personality characteristics, we asked him to rate his mood for each ESP session. In what way could his mood affect the ESP process?

There are two main possibilities. One is that the effect could take place in the ESP channel. In that case *T*'s mood could affect scoring by (a) changing the noise level, in a process analogous to jamming a radio station; (b) affecting the signal strength, either by weakening it (interference) or strengthening it (amplification); or (c) introducing systematic dispersion of the channel activity, resulting in displacements.

The other possibility is that the effect takes place within *S*, who has encountered *T* and his mood by ESP. *S*'s internal information processing might be affected in one of two ways: (a) The filters, whose function it is to screen out irrelevant or threatening stimuli, might be opened if *S* finds *T*'s mood acceptable and closed if he finds it unacceptable; or (b), "gating" of the responses to awareness would largely favor psi-hitting if the contact is found acceptable, and psi-missing or blocking (chance scoring) if the contact is found unacceptable. A model and description of the filters and gating processes has been given elsewhere (22).

Our present experimental design does not permit us to make definite choices among these possibilities, although it does measure relevant *S* and channel characteristics at the same time. We might expect that if the effect of *T*'s mood is to shift scoring from psi-hitting to psi-missing or vice versa, the effect takes place in *S*'s internal processing of ESP. On the other hand, if it decreases scoring in either direction on direct hits but increases scoring on displacements, or if the amount, rather than the direction of scoring varies with *T*'s mood, the effect is likely to be on the channel activity.

Subjective Variables

The ESP scores we obtained in the experiments of course do not only reflect what is happening in the channel, but also what

is happening in *S*. His mood, feelings, attitudes, etc., are likely to affect the results. Certainly we cannot expect to learn much about the channel when these are not accounted for in the experimental design.

S's mood has proved to be important when measured in different ways in the experiments of Fisk and West (10), Woodruff and Dale (43), Nielsen (18), Nielsen and Freeman (19), Rogers (31), and Carpenter (3, 4). In Experiment I, we found that the dimensions of relaxation versus tension and anxiety versus freedom from anxiety were related to *S* scoring. In other exploratory experiments we found that the dimensions of elation versus depression and vitality versus tiredness were also relevant. Because of their theoretical importance, we also measured *S*'s attitudes and other variables specifically related to the ESP task, such as attention or absorption, preparation time, and liking for the task. Included here is the degree of closeness felt to *T*, a variable suggested as important by the work of Anderson and White with teacher-student relationships (1).

The mood and task-related variables had to be measured for each session, so that their effects could be separated from those of distance. We also measured more stable *S* characteristics, such as personality traits and previous ESP scoring, which Experiment I or theoretical considerations indicated might relate to the results, either on their own or in interaction with the mood variables. All of these subjective variables, whether stable or transient, are of considerable importance in themselves, in addition to their role in these experiments of removing influences on scoring which might contaminate the effects of the variables related to the channel.

THE DISTANCE EXPERIMENTS

Design

Experiments II and III followed basically the same design. The targets were displayed in four locations: New York City; Paris, France; New Delhi, India; and Sydney, Australia. *T* in Experiment II was Mr. Fred Rindge; the Experiment III *T* was Dr. Walter Houston Clark. *S*s participated in their homes across the U.S., and the distances measured were between each *S*'s home and the exact target location. The largest group of *S*s came from the New York area. Paris is approximately 3,600 miles from New York, New Delhi 7,300 miles and Sydney, 10,000 miles.

The route for each *T* was from New York through Paris and New Delhi to Sydney; he then retraced it on the way back to New York. He had one ESP session in each location en route to Sydney and repeated each session for the return journey, for a total of eight

sessions per experiment. Each individual *S*, however, took part in only four of these sessions, one in each location. This enabled us to balance the order of the sessions in each location for the *Ss*, so as to minimize the possibility that position or decline effects and the effects of distance might be confounded. *Ss* were randomly assigned to one or the other of the two sessions in each location, so that some *Ss* began (and ended) the experiment at each location. Although all *Ss* for a given session had the same target order, we believe that the danger of a "stacking effect" is minimal with an *N* of 800 targets per experiment.

Blind procedures were used: in neither experiment were *Ss* informed where the targets were for any given session. The Experiment II *Ss* did not even know what the four locations were. Half of them received world maps on which the outline of a broad arrow was traced; this arrow passed through much of the United States, western Europe, southwestern Asia, and Australia. The other half received maps without the arrow. For Experiment III, all *Ss* were given maps without arrows, but they were told which cities would be the target locations.

The ESP Test

A card-guessing test was used, with five different types of nature postcards as the targets. In Experiment II the postcards represented a hummingbird, a collie, a horse and colt, roses, and a sailboat. The Experiment III targets were: seagulls, a chipmunk, two dogs, a hibiscus blossom, and an autumn maple tree. They were selected to contrast with each other in color and form, and were pretested for equal potency for positive scoring on direct hits. In each session, *Ss* completed four runs of twenty-five trials each.

T randomized the targets for each session at the place where the targets would be displayed, using a random number book and a "closed deck" technique (equal numbers of each type of target in each run).² We did not prepare the random orders in advance in New York in order to eliminate the possibility that *Ss* might precognize the target orders from New York, instead of getting their impressions from the target location. This would blur any effects of distance on scoring. For the same reason, the *Ss*' ESP record sheets for each session were sent for scoring to a place near the target location for that session. Only the score for each run, and nothing which would identify the target order, was returned to us in New York. Target orders were retained at the places where they were scored.

² The randomization procedure may be obtained from the authors upon request.

After obtaining the random order, the *T* placed the 100 postcards face down in four columns on the floor of his hotel room. At the head of each column was a sign marked "Top" which also gave the run number, from one to four. At the top center was placed a sign reading "A.S.P.R. Experiment." *T* remained with the cards for four hours, during which he went about his business. *Ss* could begin the session at any time during the four hours. The hours were always the same for *Ss* (7:00 to 11:00 P.M., E.S.T.), so in Paris and New Delhi *T* sat with the cards at night.

In order to provide psychological closeness, *Ss* were given photographs of *T* and a short personality and biographical sketch of him, in glowing terms. They were also given four index cards, numbered from one to four, corresponding to the four columns of target cards. *T* had carried the index cards around for some time. *Ss* were instructed to hold the card numbered "one" while aiming for the first column, etc.

Subjects

Ss for these experiments were A.S.P.R. members who had volunteered in their membership questionnaire replies to take part in research. Participants in Experiment I had been selected through a preliminary test, which is described in the report on this experiment (24). This preliminary test was designed to approximate in stages the conditions of the distance experiment itself. These *Ss* were invited to take part in Experiment II, and most did so. The same preliminary test was also used to screen members who had volunteered for research in the intervening year. Those whose scores on direct hits or forward and backward displacements were at least six above or ten below chance expectation were also invited to join the experiment. A total of fifty-seven persons completed Experiment II.

Approximately two-thirds of these *Ss*—those who showed the greatest variance in their scoring—were invited to participate in Experiment III. Another preliminary test was given to new A.S.P.R. members who were interested in research. Those who had scored at least seven above or below chance on hits or displacements were also invited. Altogether, seventy persons completed Experiment III.

Subjective Factors

We tried to keep the tone of the instructions to *Ss* as encouraging as possible. As in Experiment I, we sent Orientation Sheets for each session, which were designed to keep up *Ss*' interest and confidence. We also corresponded personally with them, responding

to their comments on the Observation Sheets (to be described). They were invited to call us collect if anything was not clear. Ss in Experiment II were given copies of Louisa Rhine's *Hidden Channels of the Mind* in appreciation of their help. The Experiment III Ss had their choice of one of two books by Rosalind Heywood: *ESP: A Personal Memoir*, or *Beyond the Reach of Sense*.

The importance of "tuning in" or preparing oneself for the ESP sessions was stressed in the instructions (see 24, p. 45). Ss were encouraged to use whatever methods appealed to them or which they had found effective in the past in lifting their minds from everyday concerns. A relaxed body and alert mind were recommended. For Experiment III, we sent Ss paperback editions of Steichen's photographic exhibit *The Family of Man*, suggesting that they could focus on any of the photographs in their preparation.

After each session, Ss completed Observation Sheets, which were intended to assess their subjective states during the ESP session. (The Observation Sheet for Experiment III is given in Appendix I.) Ss were first asked about their preparation. Then they filled out nine-point psychological scales, which measured task-related variables (Scales 1, 2, 3, 5, 9, and 10), and mood variables (Scales 4, 6, 7, and 8). A check on the extreme "positive" end of each scale was scored as "9" and a check on the extreme "negative" end was scored as "1." Scales 9 and 10 were introduced in Experiment III; otherwise the Observation Sheets were the same for both experiments. Finally, the Observation Sheets asked if anything unusually disturbing or particularly good had happened recently. The mood ratings were included in the analysis in their original state and a second time under a quadratic transformation which enabled us to measure possible curvilinear effects of mood.

Mr. Rindge, T in Experiment II, kept a diary of his feelings during the sessions. On his return, we asked him to use this diary in rating his mood for each session on a single nine-point scale. K.O. and a co-worker, M. Nester, also rated T's mood for each session on the same scale, using his diary report. The average of their three ratings was assigned as his mood score for a given session. For Experiment III, Dr. Clark completed after each session the same four mood scales used by Ss. We were then able to measure interaction effects between S and T ratings on each of the four scales.

The Observation Sheets measured S characteristics which would be expected to vary from session to session. We also felt that certain more enduring personality patterns might be related to scoring in a distance ESP experiment. The Rosenzweig Picture-Frustration Study (RPFs), a measure of habitual reactions to frustration (33), was given in Experiment II. Three scoring categories of this test

were used: Obstacle Dominance, which measures concern with frustrating obstacles; the GCR, which measures group conformity; and Intropunitive Need Persistence, a measure of readiness to resolve frustrating situations by one's own action.

In both Experiments II and III, the Eysenck Personality Inventory (EPI), Form A, was given (8). This measures the degree of introversion or extraversion; orientation toward the inner world or to the world around one. It also gives a measure of the degree of neuroticism, a quality which does not correlate with introversion/extraversion. Eysenck (7) has found that extraverts and introverts have different optimal arousal levels for performance, and suggested that this might also be true for ESP achievement. We therefore included in the analysis the interactions between each S's Extraversion score and his score on two mood scales which we thought would measure arousal: the Elation and Vitality scales.

Measures of each S's previous scoring on hits and forward and backward displacements were also included in both experiments together with a measure which categorized S by his previous scoring on hits and by whether or not he had participated in the previous experiment. In Experiment III we introduced a new questionnaire which was completed by S after the experiment. It included two nine-point scales measuring the degree of his liking for the experiment and for the T. It also included our adaptation of the Time Metaphor Test (11).³

Finally, four measures of possible position effects were used in these experiments. These included the number of the session itself, the session number for the S, whether the session was the first or the second in the location, and the run number.

METHODS OF EVALUATION

Stepwise Multiple Regression Analysis

Data from the two experiments were analyzed separately. The principal statistical procedure used was stepwise multiple regression analysis (SMRA). This complex procedure, which deals with all of the variables simultaneously, is described by Morrison (13). A full discussion of SMRA is also given in the report on Experiment I

³ We asked Ss to rate on nine-point scales the appropriateness of six images of time. Three were "static": a vast expanse of sky; a string of beads; a quiet, motionless ocean. Three were "dynamic": a fast-moving weaving shuttle; a dashing waterfall; a galloping horseman. Since Ss rated the beads and horseman images in ways apparently unrelated to the other static or dynamic images, we eliminated those scales. Each S's Time Metaphor score was the sum of his ratings on the "dynamic" scales, minus the sum of his ratings on the "static" scales.

(24, pp. 22-24). Briefly, the computer takes each of the dependent (ESP) variables separately. The independent (non-ESP) predictor variables enter the analysis one by one (in steps) in order of the strength of their relationship with the dependent variable. Each entering independent variable is adjusted to eliminate any overlap in its association with ESP with the association of the previously entered independent variables. The procedure can be adjusted to permit all of a designated group of independent variables to enter before allowing any of the rest of the independent variables to enter. We wished all of the variables whose effects might be confounded with those of distance to enter the analysis before distance. The only variables which could be so confounded were those that, like distance, changed once per session: *S* and *T* moods, position effects (except run number) and the task-related variables. All of these variables entered the analysis before distance and the rest of the variables were permitted to enter. Thus, the relation of distance and these other variables to ESP was adjusted to eliminate overlap with the relationship to ESP of the variables entered first.⁴

ESP or Dependent Variables

In Experiment I, we wished to use a "wide net" for catching any ESP effects which might appear in our data. In ESP tests which are perceived to be difficult, such as some earlier distance experiments, ESP tends to be displaced or turned into psi-missing. Our concept of ESP as it related to such measures is of one information flow which becomes differentiated into psi-hitting, psi-missing, displacements, etc., by the gating function of *S*'s internal information processing system. Experiment I used four different combinations of psi-hitting and psi-missing for each of these ESP measures: direct hits, forward displacements, and backward displacements.⁵ In Experiments II and III, we used instead the following six basic ESP measures:

- (1) Psi-missing, direct hits.
- (2) Psi-hitting, direct hits.

⁴ SMRA enables us to deal with the complexities of a multivariate experiment, and eliminates the difficulties resulting from intercorrelations between the independent variables. It does not, however, yield measures of the association between ESP and independent variables which can be assigned exact *P* values (6, 25).

⁵ In Experiment II, we also used three of these four combinations (absolute value, deviations without signs, and ESP quotients) for each of the ESP measures. The ESP quotient is a measure designed by Foster (29, pp. 419-420). They gave results comparable to those obtained by the psi-hitting and psi-missing scores alone for each measure, so they were dropped from Experiment III. To simplify presentation, results with these additional measures in Experiment II will not be reported, except for results with the distance variable, where exact comparisons with Experiment I are important.

- (3) Psi-missing, backward displacements.
- (4) Psi-hitting, backward displacements.
- (5) Psi-missing, forward displacements.
- (6) Psi-hitting, forward displacements.

The scoring unit is the run. Psi-hitting and psi-missing are separated in the following way: the scoring deviation for each run in the positive direction is the psi-hitting score for that run, and the scoring deviation for that same run in the negative direction is the psi-missing score. For example, a run with six direct hits would be scored "1" for psi-hitting and "0" for psi-missing on direct hits. A run with three direct hits would be scored "0" for psi-hitting and "2" for psi-missing on direct hits.

Non-ESP or Independent Variables

The independent variables in these experiments are all factors we have measured which may influence the ESP results. They are listed below by categories.

Distance variable:

- (1) Actual distance in miles between each *S*'s home and each target location.

ESP orientation variable:

- (2) Directional cue (Experiment II only). Whether or not *S* was given the arrow cue to *T*'s route.

Position variables:

- (3) Whether the session was the first or second in the location.
- (4) Number of the session (1-8).
- (5) Number of the session for *S* (1-4).
- (6) Number of the run in the session (1-4).

T mood variables:

- (7) Mood (Experiment II only).
- (8) Relaxation (Experiment III only).
- (9) Elation (Experiment III only).
- (10) Vitality (Experiment III only).
- (11) Freedom from anxiety (Experiment III only).

S mood variables:

- (12) Relaxation.
- (13) Elation.
- (14) Vitality.
- (15) Freedom from anxiety.

S task-related variables:

- (16) Number of minutes spent preparing for the session.
- (17) Feeling of preparedness.
- (18) Ease of task.
- (19) Feeling of closeness to *T* and cards.
- (20) Absorption.
- (21) Feeling about task (Experiment III only).
- (22) Motivation to score (Experiment III only).

Stable S characteristics:

- (23) EPI extraversion score.
- (24) EPI neuroticism score.
- (25) RPFS obstacle dominance score (Experiment II only).
- (26) RPFS group conformity ratio (Experiment II only).
- (27) RPFS need persistence (intropunitive) score (Experiment II only).
- (28) Number of direct hits in pretest or New York session of previous experiment.
- (29) Number of backward displacements in pretest or New York session of previous experiment.
- (30) Number of forward displacements in pretest or New York session of previous experiment.
- (31) *S* group; four categories: old *Ss*, previous scoring (#28 above) positive; old *Ss*, previous scoring negative; new *Ss*, previous scoring positive; and new *Ss*, previous scoring negative.
- (32) Feeling about experiment (Experiment III only).
- (33) Feeling about *T* (Experiment III only).
- (34) Time Metaphor score (Experiment III only).
- (35) Sex.

We also used variables derived from those listed above.* All of these derivatives are mood variables:

- (36) *S* elation/extraversion interaction.
- (37) *S* vitality/extraversion interaction.
- (38) *S* relaxation, curvilinear (Experiment III and one of two SMRA's in Experiment II).

*The derived independent variables were computed in the SMRA process. For this it was necessary that the independent variables from which they were derived enter the analysis first. Therefore some exceptions had to be made to the rule that all variables except distance which change from session to session must be entered before any of the other variables are permitted to enter. The extraversion variable enters the analysis with the first group while all of the derived variables, even though they change from session to session, enter with the last group.

- (39) *S* elation, curvilinear (Experiment III and one of two SMRA's in Experiment II).
- (40) *S* vitality, curvilinear (Experiment III and one of two SMRA's in Experiment II).
- (41) *S* freedom from anxiety, curvilinear (Experiment III and one of two SMRA's in Experiment II).
- (42) Relaxation, *S/T* interaction (Experiment III only).
- (43) Elation, *S/T* interaction (Experiment III only).
- (44) Vitality, *S/T* interaction (Experiment III only).
- (45) Freedom from anxiety, *S/T* interaction (Experiment III only).

Thus, in Experiment II we had twenty-six original independent variables, and two derived variables in one analysis and six in another, for totals of twenty-eight and thirty-two. In Experiment III, there were thirty original and ten derived independent variables, for a total of forty.

Canonical Correlation

Experiment I showed the value of using a "wide net" of many dependent variables to catch ESP effects. It was the displacement measures in that experiment which related to distance. Nevertheless, it is difficult to get a unified picture of the experimental results with so many intercorrelated ESP variables. We decided to use the method of canonical correlation in the next two experiments to condense the ESP effects into fewer measures. Canonical correlation is described by Morrison (13), and a fuller discussion of the rationale for combining ESP measures is given by Turner and Osia (38).

Canonical correlation takes all of the six ESP variables and relates them to all of the (original) independent variables, in order to find the weighted combinations of ESP variables that have the greatest association with the independent variables. The weights may have positive or negative signs. Six new canonical ESP variables are produced. The first canonical ESP variable is composed of the original ESP variables in proportions which give the maximum association with the independent variables. The second canonical ESP variable starts with the residuals of the association with the independent variables and combines the original ESP variables in such proportion as to account for the greatest possible share of this residual association. The third canonical ESP variable does the same with the residual association not accounted for by the first two canonical ESP variables, and so on. In both experiments, it was found that the first four canonical ESP variables had many

significant relationships with particular independent variables, and that the last two were relatively unrelated.

Data from the two experiments were analyzed separately. SMRA's were performed using the canonical ESP variables and then using the original ESP variables. A special procedure, using successive canonical analyses, was used for the distance variable and will be described in detail in the section on distance effects.

RESULTS

The analysis and presentation of our results must necessarily follow the experimental design: a multivariable approach measuring variables in seven problem areas simultaneously. The more simple single variable methods are not applicable because they cannot segregate the effects of different variables which may be confounded with one another. The results of such a complex experiment can be adequately described only by multivariable statistics. We will try to simplify the findings in each section and refer the reader for the necessary details to the tables. We will also try to keep the presentation at a level that a person not trained in statistics can follow with ease.

First we will give an overview of the relative strengths of association with ESP of the different types of independent variables. For this we will use the SMRA of the canonical ESP variables. Then we will report the results of other evaluations of the different categories of independent variables in the following order:

- (1) Distance effects.
- (2) Effects pertinent to the ESP orientation system.
- (3) Position effects.
- (4) Effects of *T*'s mood.
- (5) *S* moods and mood interactions.
- (6) Task-related variables.
- (7) Personality and previous scoring variables.

Within each section hierarchical levels of analysis will be presented. We will start with the most general analyses, those using the canonical variables, to get the overall effect. Then we will turn to the SMRA of psi-hitting and psi-missing on direct hits and displacements to learn the direction and source of the effects.

SMRA of the Canonical ESP Variables

The total ESP deviations for Experiments II and III were not significant. However, there were many associations between the independent variables and the ESP measures. Table 1 shows the

Table 1.

STEPWISE MULTIPLE REGRESSION ANALYSIS OF THE CANONICAL ESP VARIABLES
SIGNIFICANT F RATIOS

Independent Variables	Experiment II		Experiment III	
	Canonical ESP Variable	F Ratio	Canonical ESP Variable	F Ratio
Distance	II III	10.6*** 4.1*		
Session Order in Location	II III IV	4.0* 6.9*** 5.2***		
Session Number	IV	4.7*	III	13.5***
S Session Number	IV	9.3***	IV	7.1*** 4.2*
T Mood ^a	I V	8.7*** 4.6*		
T Relaxation ^b			I III	14.8*** 9.0***
T Elation ^b			I IV	6.0** 4.4*
T Vitality ^b			III III	5.6** 11.4***
T Freedom from Anxiety ^b				
S Relaxation	I IV	7.1*** 3.9*	II	19.0***
S Elation	I	6.3***	III	4.4*
S Vitality	II	4.2*	II	7.1***
S Freedom from Anxiety	I II III IV	8.9*** 5.4** 6.3** 6.3**	IV I IV	4.4* 4.0* 4.0*
S Elation (Curvilinear)			IV	5.7**
S Vitality (Curvilinear)	I	5.4**		
S Freedom from Anxiety (Curvilinear)	III	3.8*		
Elation S/T Interaction ^b			I	5.0*
S Elation/Extraversion Interaction			III	6.0**
S Vitality/Extraversion Interaction	II	4.2*	IV	8.0***
Preparation Time			I V	9.1*** 6.1**
Feeling of Preparedness			I	7.4***
Ease of Task			II IV	5.4** 4.2*
Feeling of Closeness			I	7.5***
Absorption	II	9.6***	II	10.4***
Feeling about Task ^b			I	5.2**

Table 1 (continued)

Independent Variables	Experiment II		Experiment III	
	Canonical ESP Variable	F Ratio	Canonical ESP Variable	F Ratio
Extraversion			II	5.5**
Neuroticism			III	6.7***
Pretest Hits	IV	8.5***	I	5.2**
Pretest Backward Displacements	III	7.4***	IV	4.6*
Pretest Forward Displacements	I	4.4*	III	3.8*
Time Metaphor ^b			II	4.4*
Sex	I	6.5**	II	6.0**

* $P = .05$. ** $P = .025$. *** $P = .01$. **** $P = .001$.^aExperiment II only. ^bExperiment III only.

relative strength of association of the different groups of independent variables (and single variables within the group) with ESP expressed as the canonical variables. The effect of distance in Experiment II was the strongest single effect. There was no distance effect in Experiment III, so out of our three experiments, two showed distance effects and one did not. Position effects, such as that of session order, were significant in all three experiments. These have been earmarks of ESP since the early days of scientific parapsychology (30).

T's mood was very strongly associated with ESP in both Experiments II and III. (It was not measured in Experiment I.) Here again we have consistency. The moods of *S*s were associated with ESP in all three experiments, one of our strongest and most reliable effects. The dimensions of Relaxation and Freedom from Anxiety were especially important. The task-related variables, with the exception of the Absorption scale, gave fewer effects with less consistency from experiment to experiment. The personality and ESP pretest variables were also less effective, as were the variables derived from the original mood scales. So we have four categories of independent variables which have consistently related to various measures of ESP over two or more experiments: distance, position effects, the *T* mood, and *S* mood.

Distance Effects

In Experiment I, there were significant deviations on our displacement measures for the two United States target locations, but not for the Tasmania location. In Experiments II and III the

deviations from chance for the different target locations are relatively small and do not present such an orderly pattern. However, these deviations for the locations are by no means our principal measure of the distance effect. They represent a hopeless confounding of many subjective and objective variables, which can only be disentangled through multivariable statistics.

Table 1 shows that for Experiment II distance was very significantly related to the second canonical ESP variable and was also related to the third canonical variable. There were no distance effects in Experiment III. Because of our special interest in the distance problem, we wished to make a further analysis of the distance effects in Experiment II. So we computed a new set of six canonical ESP variables, entering all of the independent variables which changed from session to session except distance (and the curvilinear components of the *S* Relaxation and Elation scales, which bore no relation to ESP in the earlier analysis). Essentially, this is the same procedure which yielded the canonical ESP variables in Table 1, except that only these eighteen selected independent variables are included. This analysis produced not only the six canonical ESP variables, but also canonical correlation coefficients, which expressed the relation of all of the independent variables taken together with each of the canonical ESP variables. Column 2 of Table 2 gives these canonical correlation coefficients. Next we computed a new set of canonical ESP variables, including

Table 2

CANONICAL CORRELATION COEFFICIENTS IN SUCCESSIVE ANALYSIS

Canonical ESP Variables	Variables which Change from Session to Session Included	Distance Added	Distance (Squared) Added
I	.2005	.2027	.2058
II	.1589	.1745	.1756
III	.1298	.1586	.1588
IV	.1129	.1213	.1262
V	.1100	.1100	.1100
VI	.0673	.0767	.0770

in the analysis the eighteen independent variables just used, and also the distance variable. Again, this gives us canonical correlation coefficients for each of the canonical ESP variables, expressing the new relationship between all of the independent variables used and the canonical ESP variables. The significance of the increase

in the canonical correlation coefficients when distance is added (the increase from columns 2 to 3) can be measured by an appropriate chi-square test. The increment in the coefficient of the second canonical variable was highly significant ($P = .002$). The coefficient of the third canonical variable also increased significantly ($P = .04$). This confirms the effect shown in the SMRA of the canonical ESP variables. In addition, the P values for these chi squares are marginal P values; i.e., they represent the actual probability of such effects occurring by chance alone. It may be noted that these P values are close to those given by the F ratios for the same variables in Table 1.

In the last column of Table 2 we have the canonical correlation coefficients of the six canonical ESP variables which were computed in a new analysis using the eighteen original independent variables, distance, and distance squared. We had measured distance from point to point around the surface of the globe. Squaring this gives a rough proportional approximation of the distance between the same points measured directly through⁷ the earth. In no case were the increments in the canonical coefficients significant after distance squared is added. Apparently the quadratic (curvilinear) component of decline was very small in Experiment II.

The questions remain: does scoring increase or decline with distance? Which of the original ESP measures are affected? Table 3

Table 3
DISTANCE AND POSITION VARIABLES
STEPWISE MULTIPLE REGRESSION ANALYSIS OF THE ORIGINAL ESP VARIABLES
SIGNIFICANT F RATIOS

Variable and Experiment	Direct Hits		Backward Displacements		Forward Displacements	
	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting
Distance						
Experiment II			4.2*		-9.0***	
Session Order in Location						
Experiment II	-10.7***	6.8***				
Session Number						
Experiment II		-4.9*				
Experiment III			-7.6***			
Session Number						
Experiment III			5.1*	-6.3**		

* $P = .05$. ** $P = .025$. *** $P = .01$. **** $P = .001$.

⁷ A formula for converting circumferential distance into distance through the earth may be obtained from the authors on request.

shows two significant F ratios for the distance variable in Experiment II.⁸ There is a highly significant decline with distance in psi-missing on forward displacements, and a smaller incline with distance on psi-missing on backward displacements. Experiment I produced two significant relationships with distance, both expressing declines. Both were in forward displacement measures: an F ratio of 5.3 ($P = .02$) for the absolute number of forward displacements, and an F ratio of 4.1 ($P = .05$) for the ESP quotient. As explained earlier, we had performed SMRA's with the Experiment II data on nine of the ESP measures used in the first experiment, as well as with the psi-hitting and psi-missing data reported in the tables. There was only one measure which was significantly affected by distance in both Experiment I and Experiment II: the ESP quotient of forward displacements. In Experiment II, this measure declined with distance, with an F ratio of 10.1 ($P = .002$). Figure 1 gives the regression lines of the ESP quotients for the two experiments, showing the decline in scoring on this measure over increasing distance.

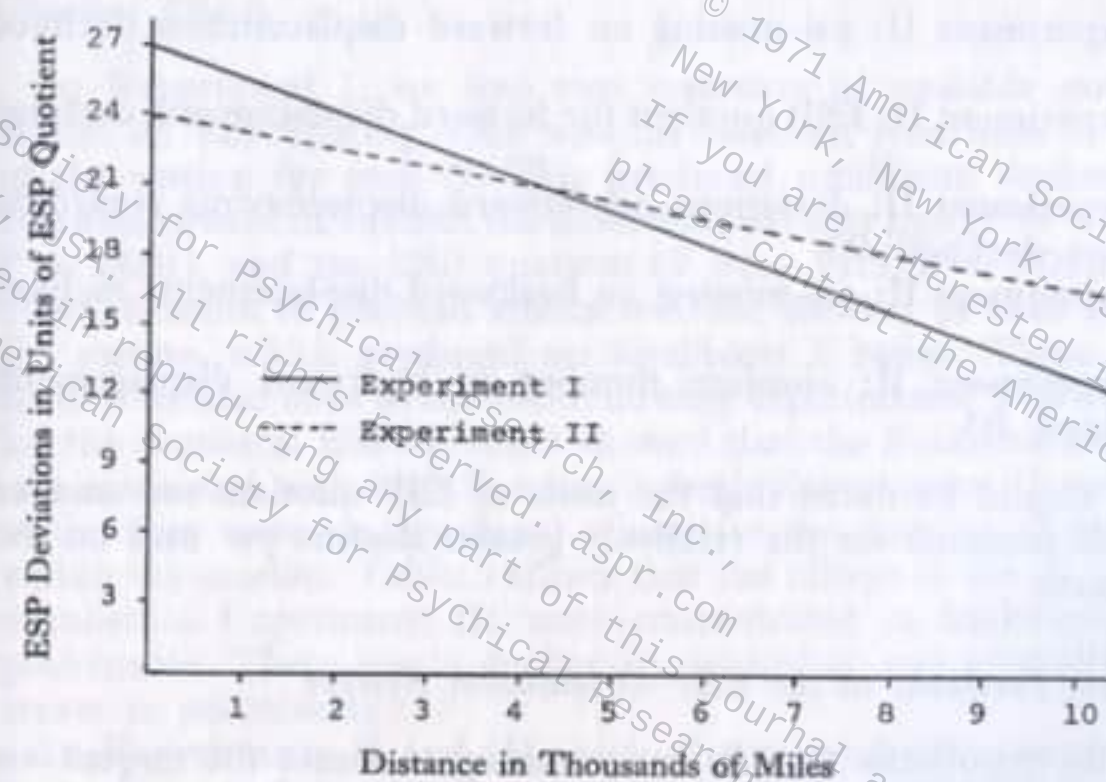


Fig. 1. Regression of the distance variable and the ESP quotient of forward displacements.

⁸ F ratios do not have algebraic signs, but we have derived the direction of the relationships from the beta statistic, which is given in the SMRA along with the F ratios, and have added minus signs to indicate the negative relationships.

There are two further ESP measures which were significantly affected by distance in Experiment II, but not in Experiment I. The absolute number of backward displacement hits declined ($F = -5.0$, $P = .02$), as did the deviations without regard to sign on forward displacements ($F = -5.8$, $P = .02$). Thus, six out of the seven ESP measures which were significantly related to distance in the two experiments showed a decline with increasing distance, and one an incline. Unlike the canonical ESP variables, these measures are intercorrelated. It appears likely that one positive relationship, psi-missing on backward displacements, was an artifact of the stronger negative relationship between distance and psi-missing on forward displacements. These two ESP measures correlate $-.14$ ($n = 912$). Of course the other measures in Experiment II which decline with distance are also correlated, but positively, with psi-missing on forward displacements.

The average change in each scoring unit per 1,000 miles was:

Experiment I: absolute number of forward displacements declined .04.

Experiment I: ESP quotient for forward displacements declined 1.7.

Experiment II: psi-missing on forward displacements declined .04.

Experiment II: ESP quotient for forward displacements declined .70.

Experiment II: deviations on forward displacements regardless of sign declined .03.

Experiment II: psi-missing on backward displacements inclined .03.

Experiment II: absolute number of backward displacements declined .05.

It should be noted that the units of ESP quotient are smaller, which accounts for the relatively greater decline per unit on this measure.

Effects Pertinent to the ESP Orientation System

The hypothesis that Ss use scanning to locate the targets was tested in Experiment II by giving half of the Ss a directional cue to T's route (an arrow on their world maps) and half no cue. None of the canonical or the original ESP variables were related to this directional cue in the SMRA's.

The amount of information given to Ss about T's possible locations was also varied from experiment to experiment. Ss were given the exact addresses in Experiment I, no information or only

the arrow in Experiment II, and the names of the four cities in Experiment III. Were the results in any way proportional to the scanning areas?

It is very difficult to compare the overall results across experiments when somewhat different designs and evaluations have been introduced. Experiments II and III were the most similar. Perhaps our best indication of ESP effectiveness in the experiments is the strength of association between ESP measures and the more important independent variables. There was roughly the same strength of association between S moods in Experiments II and III and also in the two mood scales which were used in Experiment I. T's mood, measured in the last two experiments, also seemed to have the same strength of effect. There were strong position effects in all three experiments. Overall comparisons between the three experiments show small variations in the proportion of significant associations, etc., but nothing at all proportionate to the differences in scanning areas. It appears that information given to Ss about the location of the target is not of central importance to their ability to locate the targets.

Position Effects

In Experiment I, we had two measures of possible position effects on ESP scoring. One was the number, from one to four, of the session for each S. This produced significant declines on two measures of direct hits: the deviations without sign ($F = -16.6$, $P = .0001$), and the ESP quotient ($F = -11.5$, $P = .001$). The other measure of position effects was the number of each run in the session, which produced no significant F ratios. These measures were also used in the two following experiments. The SMRA for the canonical ESP variables showed that the S session number was associated with high F ratios in both Experiments II and III, while there were no significant effects for the number of the run within the session. Table 3 shows that the effects of the S session number in Experiment III were concentrated in backward displacements. There was a decline in psi-hitting and a smaller increase in psi-missing.

In Experiments II and III, each S was randomly assigned to four of the eight sessions so that one session might be the first for one S, the second for another, etc. In these two experiments the target location, and thus the distance, varied from session to session (rather than from run to run within the session, as in Experiment I). It was therefore most important to measure adequately position effects related to the session. In Experiments II and III we added two measures which are related more to the order

of the session for *T* than for *Ss*. One is the order of the session in its location: whether this session is on the initial or return trip. This was significantly related to three of the canonical ESP variables in Experiment II (Table 1), but to none in Experiment III. Table 3 shows that in Experiment II this measure was associated with a highly significant decline in psi-missing on direct hits, with a concomitant increase in psi-hitting. The other new measure of position effects was the number of the session itself, from one to eight. This related to the canonical ESP variables in both experiments. The SMRA for the original ESP variables gives one significant *F* ratio for the session number in each experiment: both are negative (decline) effects. Apparently we add useful information when, in addition to measuring position effects in the usual way (*S* session number), we include these new measures.

Effects of *T*'s Mood

T's mood was measured by one scale in Experiment II and four mood scales in Experiment III. Our main analysis, the SMRA with canonical ESP variables, showed a strong influence of *T*'s mood in both experiments (Table 1). Although these mood ratings varied more from session to session in Experiment II than in Experiment III, the effect of this variation was somewhat stronger in Experiment III. The Relaxation scale was particularly important, producing an *F* ratio of 14.8, one of the largest in the whole experiment. Freedom from Anxiety appeared to be the second strongest mood component; Elation and Vitality being slightly, but noticeably related to ESP. Although *T*'s mood strongly influenced the clairvoyant activity of *Ss*, the interaction (degree of overlap) between his moods and theirs was not important. This was measured in Experiment III and resulted in only one barely significant *F* ratio with the canonical ESP variables: this was for the interaction on the Elation scales.

Table 4 shows the relationships between *T*'s mood and the original ESP variables. In Experiment II the significant effect was concentrated in a strong positive relationship with psi-missing on backward displacements. In Experiment III Elation is positively, and Freedom from Anxiety negatively, related to the same ESP measure. In addition, there is a more straightforward association with direct hits, with Relaxation related negatively to psi-missing and Elation related positively to psi-hitting. Our overall impression is that these mood effects are quite noticeable and strong in relation to the whole information flow of ESP as indicated by the canonical ESP variables. But they are related to the individual ESP measures in a complex manner which we do not as yet fully understand.

Table 4
TRAVELER MOOD VARIABLES
STEPWISE MULTIPLE REGRESSION ANALYSIS OF THE ORIGINAL ESP VARIABLES
SIGNIFICANT *F* RATIOS

Variable and Experiment	Direct Hits		Backward Displacements		Forward Displacements	
	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting
Mood ^a						
Experiment II						
Relaxation ^b			10.9****			
Experiment III						
Elation ^b	—9.9***					
Experiment III						
Vitality ^b		5.9**	5.3**			
Experiment III						
Freedom from Anxiety ^b						
Experiment III			—5.5**	4.2*		
Elation <i>S/T</i> Interaction ^b						
Experiment III				—3.9*		

P* = .05. *P* = .025. ****P* = .01. *****P* = .001.

^aExperiment II only. ^bExperiment III only.

We had two occasions (unplanned) to observe strong effects of *T*'s mood on small samples of data from Experiment III. In the first session, *T* had allowed too little time for randomization of the targets, and barely made the deadline for setting them out. He felt quite upset, and registered this accordingly on the mood scales. After an hour he had calmed down, and he then registered his new mood. The five *Ss* who did the ESP test during the first hour had total deviations of -21 ($CR = 2.34$, $P = .02$). The rest of the *Ss* for that session, who worked during his calm mood, produced an insignificant positive deviation of $+3$. The second accident occurred in India, when *T* overslept, after setting out the targets in advance. Upon awakening he was initially upset and registered a negative mood, but he then calmed down and recorded a better mood. The nine *Ss* who worked during his sleep produced suggestive negative scoring (deviation -23 , $CR = 1.92$, $P = .06$). Only two *Ss* worked during his negative mood; they produced an insignificant negative deviation (-1). *Ss* who worked during his positive mood produced a deviation of -19 , also insignificant. These results suggest that if *T*'s mood is strongly affected, the effect on *Ss*' scoring is strong and uncomplicated, i.e., producing

psi-missing on direct hits. Of course, these are unanticipated results and should be interpreted with great caution. The negative scores produced during *T*'s sleep surprised us because we assumed that his mood then was neutral.⁸ The saying goes: "Who sleeps sins not." But perhaps there was some subconscious awareness that he was missing his duty, producing an effect like that of a negative mood on *S* scoring.

S Moods and Mood Interactions

S moods were measured the same way in both experiments. The SMRA of the canonical ESP variables (Table 1) shows significant effects for all four mood scales in both experiments. Relaxation gives the strongest effects. *T*'s Relaxation scores had also affected *S*'s clairvoyance scoring more than the other mood components. Apparently we are dealing here with a strong perennial variable which has been suggested from the beginnings of psychical research (and which also gave results in Experiment I). Freedom from Anxiety is more important in Experiment II than in Experiment III, where Vitality is stronger.

Table 5 shows again the importance of the *S* mood variables. Here, too, we have great variations among different measures. The exception is the relationship between Relaxation and forward displacements, which is the same in both experiments: positive with psi-missing and negative with psi-hitting. In Experiment I the absolute number of forward displacements related positively to the Relaxation scale ($F = 6.7$, $P = .01$) and negatively to the Freedom from Anxiety scale ($F = 6.0$, $P = .02$). We believe that the data indicate the importance of *S* mood variables to the basic ESP process, although there is little stability in its relation to the gating process.

We explored the possibility of curvilinear relationships between *S* mood and ESP in the SMRA for the canonical ESP variables in both experiments. Table 1 shows that these relationships are very few and are much weaker than the linear relationships with the same mood scales, with the possible exception of the Elation scale in Experiment III. In the SMRA with the original ESP variables, the curvilinear relationships with the *S* moods were included only for Experiment III. Table 5 shows only one relationship, with the Elation scale, which is not strong and could likely be caused by chance.

The interaction between *S* Vitality and Extraversion related to ESP in both experiments in the SMRA of the canonical ESP

⁸ To be on the safe side in coding the data, we assigned to *S*s who worked during his sleep the average mood ratings for *T* over the entire experiment.

Table 5.

SUBJECT MOOD VARIABLES
STEPWISE MULTIPLE REGRESSION ANALYSIS OF THE ORIGINAL ESP VARIABLES
SIGNIFICANT F RATIOS

Variable and Experiment	Direct Hits		Backward Displacements		Forward Displacements	
	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting
Relaxation Experiment II					9.0***	-4.0*
Experiment III					13.4****	-3.9*
Elation Experiment II					5.0*	4.4*
Experiment III			-6.3**	5.3**		
Vitality Experiment II		4.1*				
Experiment III				-6.7***	4.8*	
Freedom from Anxiety Experiment II	6.8***	-5.1*		4.6*	-5.1*	
Experiment III		4.9*		-4.2*		
Elation (Curvilinear)* Experiment III						-3.8*
Elation/Extraversion Interaction Experiment III			4.1*			
Vitality/Extraversion Interaction Experiment III			-5.2**	4.2*		

* $P = .05$. ** $P = .025$. *** $P = .01$. **** $P = .001$.

*Experiment III only.

variables, while the Elation/Extraversion interaction produced an effect only in Experiment III. In Table 5, we see that the Vitality/Extraversion interaction relates to backward displacements in Experiment III in a way consistent with Eysenck's hypothesis that extraverts perform better under greater arousal: it increases psi-hitting and decreases psi-missing. The Elation/Extraversion interaction increases psi-missing on backward displacements in Experiment III. Our impression is that these interaction effects are real, but comparatively slight.

Task-Related Variables

In both Experiments II and III, the Observation Sheets contained the same five measures related to the ESP task. Two addi-

tional task-related scales were used in Experiment III. The SMRA with the canonical ESP variables showed the strongest association in both experiments between the Absorption scale (attention to the task) and ESP. The amount of time spent preparing for the experiment was associated with ESP in Experiment III but not in Experiment II, despite the fact that Ss spent slightly more time on the average preparing for Experiment II (30 minutes) than for Experiment III (28 minutes). Ss' feelings of being prepared or unprepared for the experiment also related to ESP in Experiment III but not in Experiment II; the same is true for Ss' feeling of the ease or difficulty of the ESP task, which was strongly related in Experiment III, and for Ss' feelings of closeness or lack of closeness to T and his pictures. The scale for Feeling about Task, measuring the degree of enjoyment or irritation with it, was introduced in Experiment III and also showed some relation to the canonical ESP variables. The other new scale, measuring motivation to score well, did not relate. Perhaps we asked our question too bluntly.

We do not know why the task-related variables affected scoring in Experiment III and not in Experiment II. The most obvious difference between the two experiments is the different personalities of the Ts. Table 6 shows the same difference between the experiments, with no clear trend in the gating of the ESP measures. Even the Absorption scale gives different results from one experiment to another.

The Ease of Task scale was introduced in Experiment I as a check on the possibility that Ss might become aware through ESP of the distance between themselves and the targets, and that they might react to that awareness by feeling that the more distant targets were more difficult to reach. If that were true, and this feeling of difficulty affected scoring, the result would be confounded with the results of distance itself. In Experiment I the Ease of Task variable did not correlate significantly with distance. However, Experiments II and III produced identical significant correlations between distance and Ease of Task: $-.12$ ($P = .05$). Ss apparently felt the task to be more difficult with increasing distance. In Experiment II there was a significant relationship between ESP and distance, but not between ESP and Ease of Task. In Experiment III, Ease of Task but not distance is related to ESP scoring.

Personality and Previous Scoring

Eysenck's Personality Inventory (8) was used for both experiments. In Table 1, we see that the Extraversion scale, and to a lesser degree the Neuroticism scale are associated with canonical

Table 6
TASK-RELATED VARIABLES
STEPWISE MULTIPLE REGRESSION ANALYSIS OF THE ORIGINAL ESP VARIABLES
SIGNIFICANT F RATIOS

Variable and Experiment	Direct Hits		Backward Displacements		Forward Displacements	
	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting
Preparation Time Experiment III	5.4**	—5.3**				
Feeling of Preparedness Experiment III			—5.7**			
Ease of Task Experiment III		—6.1**		—4.3*	—7.1***	4.7*
Feeling of Closeness Experiment III				7.1***		
Absorption Experiment II			3.8*	—4.1*		
Feeling about Task Experiment III					—13.7****	5.1*
Task Experiment III	—6.1**				4.3*	—5.4*

* $P = .05$. ** $P = .025$. *** $P = .01$. **** $P = .001$.
*Experiment III only.

ESP variables in Experiment III. Neither related to scoring in Experiment II. It appears that Extraversion is the more important of the two scales for ESP scoring. The interaction between the Extraversion scores and the S mood variables measuring arousal, especially the Vitality scale, affected scoring about as much as did the Extraversion scale alone. Table 7 shows that the effect of the Extraversion scale in Experiment III was to increase psi-hitting in forward displacements.

The Obstacle Dominance scale of the Rosenzweig Picture-Frustration Study (33) was important to scoring in the Osis-Fahler distance experiment (23). It produced one slight positive regression, with an F ratio of 4.1 with the η for backward displacements in Experiment I. The Group Conformity Ratio produced no significant results in Experiment I, but the Intropunitive Need Persistence scale was related to the ESP quotient of forward displacements ($F = 6.9$, $P = .01$). None of these scales from the Picture-Frustration Study related significantly to ESP scoring in Experiment II, so it was dropped from Experiment III.

Table 7

PERSONALITY AND PREVIOUS SCORING
STEPWISE MULTIPLE REGRESSION ANALYSIS OF THE ORIGINAL ESP VARIABLES
SIGNIFICANT F RATIOS

Variable and Experiment	Direct Hits		Backward Displacements		Forward Displacements	
	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting	Psi-Missing	Psi-Hitting
Extraversion						
Experiment III					8.4***	
Pretest Hits						
Experiment II					-5.2**	
Pretest Backward Displacements						
Experiment II	3.8*	-9.1***				
Pretest Forward Displacements						
Experiment III	-3.9*	3.8*			-4.0*	
Time Metaphor*						
Experiment III					3.8*	
Feeling about T*						
Experiment III			7.2***			

*P = .05. **P = .025. ***P = .01. ****P = .001.

*Experiment III only.

Our greatly shortened version of the Time Metaphor test (II), introduced in Experiment III, produced one significant relationship with a canonical ESP variable (Table 1) and a slight positive effect on psi-missing for forward displacements. S sex related to one canonical variable in Experiment II but not in Experiment III; it had no significant effects on the original ESP variables in either experiment, so we do not know whether it was men or women who scored better on that canonical ESP variable. It looks as though S sex is in any case not an important variable. It did produce three significant F ratios in Experiment I, two indicating better scoring by men, and one by women.

Our two measures of the feeling of Ss about the experiment and about T, introduced in Experiment III, apparently did not affect ESP scoring. Neither related to the canonical ESP variables. Feeling about T was, however, associated with an increase in psi-missing on backward displacements (Table 7).

Effects of Alcohol

The Observation Sheets completed by Ss after each session asked about any stimulants taken three hours or less before the

experiment. In Experiment I, small amounts of alcohol did not affect scoring, but qualitative data indicated that larger amounts were more effective. Alcohol consumption *per se* did not affect scoring in Experiment II, but we have no data there about the amount. In Experiment III, reports of the use of alcohol immediately before the experiment were put in three categories according to amount used: "light," "moderate," and "no amount given" (there were no reports of "heavy" drinking). The fourteen sessions in the "moderate" category had a significant positive deviation of 40 on direct hits ($CR = 2.53, P = .01$).

Discussion

Technology and advances in research methodology can open up new problem areas not previously available for research. For example, the development of the telescope made possible research on a whole range of problems in astronomy. Multivariate research design, multivariable statistics, and computers have made it theoretically possible to separate the effects of distance from other effects which might be confounded with them. We have tried to adapt these procedures so as to gain the maximum information on our research problems, although doing so necessitates new statistical conceptualizations and sacrifices some of the clarity of the statistical procedures used in the precomputer age. This is the price we have had to pay for making the problems of the ESP channel accessible to research.

As stated before, we believe that S receives one flow of ESP information which is then differentiated into psi-hitting, psi-missing, displacements, etc., by the gating function of his internal information processing system. Experiments I, II, and III, as well as our research on ESP and changed states of consciousness (22), have led us to the conclusion that it is the total flow of ESP information, rather than any specific measure of ESP, which is related in a stable way to the independent variables. For example, S relaxation was important in all three distance experiments, but we cannot predict from them which specific ESP measure might be affected by S relaxation in a future experiment. On the other hand, we believe it is very likely that S relaxation will relate to one or more ESP measures in a future experiment. Such general patterns of association make it appropriate to use canonical correlation to combine the ESP measures.

Although our conclusion as to the effects of S relaxation on ESP is not as specific as many parapsychologists would wish, it appears that we have expected too much in looking for tight and stable

relationships between any one ESP measure and the independent variables. Such relationships sometimes occur and then are not replicated later. It appears that the subjective and situational variables shift the gating and filtering mechanisms so rapidly that stable relationships will escape our attention unless we sacrifice specificity and are satisfied with the more general statements of association. Only the future will show whether this is correct, but it seems a reasonable assumption at the present stage of research into problems of such complexity.

Distance Effects

Our previous findings in the literature survey (21) and Experiment I (24) that ESP attenuates with distance were confirmed in Experiment II but not in Experiment III. One of the two ESP measures which was related to distance in Experiment I, the ESP quotient of forward displacements, provided the strongest decline effect in Experiment II. The other ESP measure was not affected by distance in Experiment II, but there were decline effects in two measures closely related to it. Of course our main reliance in Experiment II is on the increments in the canonical correlation coefficient when the distance variable is added. This procedure produced significant results for two of the canonical ESP variables, results which are not subject to the limitations of SMRA findings.

Concluding from Experiments I and II that there does seem to be an attenuation of ESP scoring over distance, how do we account for the lack of such an effect in Experiment III? Our best guess is that the psychological scales did not fully measure *T*'s mood. We asked him to describe in writing his reactions to the four cities. New York rated low: "New York has no special interest for me since I visit it so often." He had mixed feelings about Paris and New Delhi. About Sydney, he wrote: "I liked Sydney the best of all because of the friendliness of the people, the cleanliness of the city, and maybe because it was so much like America that I felt at home." While in Australia he visited a former student, which was a joyful event. It looks as if there was something of an inverse relationship between *T* mood and distance in this experiment. Our interpretation that this obscured the distance effect is, of course, post hoc.

Ruderfer (34) has raised the question whether ESP goes around the surface of the earth or directly through it in reaching the target locations. Our analysis in Experiment II of the increment in the canonical correlation coefficient indicates that it is the distance around, rather than through the earth which is important. But one experiment will not settle the issue. In a private communi-

cation, Ruderfer has also suggested that other trajectories, such as those observed for magnetic lines, should be explored. Turner (21) has derived a formula by which non-linear relationships between our distance measures and ESP could be traced. Our present experimental data contain so much error variance (noise) that we are not able to study these interesting possibilities. We feel that an increase in the sensitivity of the experiment is the only way to solve the problem.

ESP Orientation

Vasiliev (41) tested the hypothesis that knowing the direction in which to look for the ESP information source will improve scoring. He found no such effect, nor did we for *Ss* who were given the arrow cue in Experiment II. We are also confident that ESP efficiency is not directly proportional to scanning area: there are no major differences in overall scoring across the three experiments. This somewhat undercuts the radar hypothesis. Since we believe that clairvoyance over all but the shortest distances is ruled out by the bombardment hypothesis, we seem to be left with some kind of network theory. Although this involves the maximal assumption, it alone seems to be able to accommodate the finding that ESP can locate distant clairvoyant targets without regard to scanning area. Of course, further empirical concepts will be needed to better discriminate between the three hypotheses.

Position Effects

Each of our three position variables related to session proved to be important; the principal effects were a decline in scoring. On the other hand, no decline effects from run to run within a single session were found in any of the three experiments. Our findings that *S* session number affects scoring are in line with the extensive earlier work on the decline of ESP scoring over time. Results from our two additional position measures related to session, session number, and session order in location, indicate that the session order for *T* or for the experimenters should also be taken into account.

T Mood Effects

The influence of *T*'s mood on scoring is one of the strongest findings of the experiments. Here we have the paradox of a clairvoyance experiment influenced by what appears to be unintentional telepathy. *Ss*' task, once they "found" *T*, required no further

interaction with him. Still, *T*'s influence is clearly there. We have already described how such effects could occur, either in the channel itself (by changing the noise level, or the signal strength, or by introducing systematic dispersion or displacements), or in *S*'s internal information processing system (affecting the filters or gating processes). If the effect of *T*'s mood is to shift scoring from direct hits to displacements or to change the amount rather than the direction of scoring, it is likely to take place in the channel. If the effect is to shift scoring from psi-hitting to psi-missing or vice versa, it will apparently take place in *S*'s internal gating system.

The effects of *T*'s mood in the two experiments are confined to direct hits and backward displacements, the two types of measures not affected by distance in Experiments I and II. The tendency for direct hits is that a "better" mood increases psi-hitting and decreases psi-missing; the trend for backward displacements is in the opposite direction, with Freedom from Anxiety the exception. Our tentative impression is that gating is more affected by *T*'s mood than the amount of psi information.

There is some other evidence for this kind of effect on *S*'s gating processes. In her work on two types of telepathy Schmeidler (35) found that if the agent did not "send" the targets, but simply wished *S* success or failure, the scores differed accordingly. The relationship was complex: for "incompatible" agent/*S* pairs, the agent's wish for failure resulted in high positive scoring for *S*. Schmeidler's interpretation was that the agent affected the center of *S*'s brain which governs unconscious motivation. We think it more likely that the effect was due to *S*'s emotional reaction to the disagreeable wish, rather than to a direct action by the agent on *S*'s brain processes. Schmeidler's correlation analysis supports this interpretation of her findings.

Feather and Brier (9) found in two experiments that *Ss* scored differently in precognition tests if the experimenter, rather than an assistant, did the scoring. *Ss* were told that half of their runs would be checked by the experimenter and half by an assistant, and were asked to predict who would score which runs. The runs scored by the experimenter showed a positive deviation for those runs *Ss* predicted would be scored by the experimenter and a negative deviation for the runs *Ss* predicted would be scored by the assistant. The positive and negative deviations were of about the same magnitude. There was no trend for the runs scored by the assistant. Here again, it is the gating function to psi-hitting and psi-missing that is affected.

We plan to study further the effect we found with *T*'s mood. An experiment in progress at the A.S.P.R. features two persons sitting with the clairvoyance targets. *Ss* will focus their attention

on one of these persons, from whom they have psychometric objects and pictures, but will not be aware of the presence of the other person. Scoring will be correlated with mood ratings from the two persons. This will test whether the *T* mood effect is strictly dependent on the addressing procedure (with "closed" channel analogous to a shielded wire), or whether it is similar to an "open" field interference effect. Other approaches to the problem would be to investigate whether *Ss* score differently with psychometric objects carried during a "good" mood than with psychometric objects carried during a "bad" mood, or to test whether the moods of persons involved in any other way in the experiment (and control persons) affect *S* scoring. Tart (37) has given a good discussion of the possibilities for psi interference. We feel that the problems raised by our findings on *T*'s mood are ready for experimental attack.

S Mood Effects

Ss moods are another set of variables which persistently influenced scoring in all three experiments, although the influence is very complex and unstable. Only Relaxation produced similar effects in Experiments II and III; patterns for the other *S* mood variables changed from year to year. Unlike *T* moods, which predominantly affected psi-missing, *S* moods mainly influenced psi-hitting.

Rogers (31) and Carpenter (3, 4) found that the variance of ESP scoring increased with "better" moods. Our measure of deviations without regard to sign, used in Experiments I and II, is basically similar to their variance measure. It produced only one significant *F* ratio, so their findings were not confirmed in those experiments. Despite the strong linear relationships we found between *S* moods and ESP, we did not find the curvilinear component of the relationships to be significant. The interactions between *S* and *T* moods in Experiment III were also not important, so this kind of interaction apparently was not a source of the *T* mood effects. We feel confident in stating that the linear relationships between *S* mood and ESP were highly important in our experiments, and the curvilinear and interaction relationships were not.

Task-Related Variables

Here we consider the diverse group of scales from the Observation Sheet which relate to *Ss*' encounter with the experimental task. The Absorption scale was the only measure which proved to be important in both experiments. It measures attention to the

task, a basic variable in the psychology of sensory perception which has been neglected in ESP research. It is not intended to measure willfully imposed attention ("concentration," a variable explored by us in another research project (22) and found not to relate to ESP). The Absorption scale is aimed at spontaneous attention, arising from a deeper motivation than the conscious direction of attention. It is interesting that Absorption does not relate to direct hits, to which willful concentration would be turned, but instead strongly affects both forward and backward displacements in their hitting and missing aspects. One of the two scales introduced in Experiment III was intended to measure conscious motivation to score well: it gave no results. The other new scale, Feeling about Task, had some relationship to ESP. Again it appears that spontaneous depth processes are more important to ESP than conscious motivation and concentration of attention.

Ss' Preparation Time and Feeling of Preparedness did not affect scoring in Experiment II and did not increase it in Experiment III. This may indicate that a longer and fuller preparation enhanced spontaneity in some Ss and inhibited it in others.

The Ease of Task scale was one of the most important for our experimental design. It was our check for the possibility that Ss might learn by extrasensory means which sessions were in distant locations and therefore experience these sessions as difficult, producing effects on scoring which could be confounded with the distance effects. In Experiments II and III, although not in Experiment I, Ease of Task correlated negatively with Distance, indicating that the more distant targets were felt to be slightly more difficult to reach. Ease of Task is not related to ESP in Experiment II, but is strongly related in Experiment III. The largest effect on an original ESP variable is the negative relationship with psi-missing on forward displacements, the ESP variable most affected by distance in Experiment II. Could this have obscured the distance effect in Experiment III? Although Ease of Task enters the SMRA before distance, it is possible that the scale did not fully measure the degree of increased difficulty Ss felt when the distance to the targets was increased. Any ESP awareness of distance is likely to take place on the subconscious level, and psychological measures of even conscious feelings are never perfect. Replication will be needed to settle the issue.

Personality and Previous Scoring

These stable variables, measured once per experiment, had much less relationship to ESP than the transient variables discussed above. It looks as though personality traits, by themselves,

are not good predictors of ESP scoring. In the 1940's attempts were made to obtain star subjects by finding which traits discriminated between high and low scorers. These attempts appear to have been too optimistic. It seems better to ask: what kind of personality, in what kind of social and environmental situation, and in what mood or state of mind, would do what kind of ESP task well? We are truly forced into a multivariate approach. An example of this kind of approach is Schmeidler's experiments (35) where the Rorschach was used to predict, not high scorers, but pairs of percipients and agents whose dynamics would interact in such a way as to produce high ESP scores.

In Experiments II and III, we tested Eysenck's proposal that introversion and extraversion by themselves might be less significant for ESP than their interactions with Ss' arousal levels. The interaction between the Extraversion scale and Vitality affected ESP in both experiments; the interaction with Elation produced results only in Experiment III. The strongest of these effects is the relationship between S Vitality/Extraversion and ESP in Experiment III. This association is not stronger than that found for the Extraversion scale itself, and is somewhat weaker than the results from the S mood variables in that experiment. Perhaps we need to extend Eysenck's hypothesis to ask in what kind of mood do extraverts and introverts score best at these arousal levels, and with what T mood? Perhaps the sex difference also has to be taken into account. In our experiments, which were primarily concerned with the channel, we could not develop adequate multivariate approaches to these kinds of problems, although we have made a beginning by including the interactions between Extraversion and measures of arousal.

The Rosenzweig Picture Frustration Study (33), a powerful predictor in the Osis and Fahler study (23), gave almost no effects in Experiments I and II and so was discontinued. S sex was also unimportant. We can again speculate that these variables might give results when combined with transient and situational variables. In the case of the two scales introduced in Experiment III to measure Ss' feelings about T and the experiment, the same considerations apply. In addition, Ss might have felt obligated to answer the questions politely. The mean ratings on these scales were much higher than the mean rating for the Feeling of Closeness scale, which was worded so that Ss could check the negative end of the scale without inhibitions.

The Time Metaphor test was introduced in Experiment III as a variable which might influence gating toward displacements. When used in the pretest for that experiment, Ss in the "dynamic" category scored positively on forward displacements, the effect

falling just short of significance. In Experiment III, there was a slight positive relation between "dynamic" scoring on this test and psi-missing on forward displacements. This personality dimension seems to account for a small part of the tendency of Ss to score on forward displacements.

Pretest scoring was used to select Ss, but we found that high scoring on a measure in the pretest did not carry over into increased psi-hitting on that measure in the experiment. On the contrary, the significant relationships between pretest scoring and experimental scoring which occurred were all between different measures; e.g., between backward displacements and direct hits. The tendency to score on one measure rather than another seems to be due less to enduring traits in the individual than to shifting subjective and situational factors.

SUMMARY AND OUTLOOK

Very broadly defined channel characteristics have been the delight of philosophers, who seem to be able to enlist them in support of the particular philosophy they hold, be it monistic or dualistic. At the same time, research has suffered from the lack of empirically testable concepts of the ESP channel. Recent work has begun to meet this need; besides our own efforts, the work of Tart (37), Murphy (14, 15, 16), Marsh (12), and Schneidler (35) has helped to clarify thinking on the channel and provided testable hypotheses and pertinent results. The channel is open for research.

We found some evidence for attenuation of ESP information over distance in two out of three experiments. In terms of the ESP quotient of forward displacements, the attenuation appears to be somewhere between .7 to 1.7 units per thousand miles under comparable conditions. The size of the scanning area seemed to be rather unimportant to ESP success. The few cues given for ESP orientation or addressing appeared to be sufficient. Whether fewer cues would suffice has still to be explored. We also found that the encounter between personalities, expressed in the T mood effect, influenced scoring. S moods and position effects continued to be important.

We have begun to explore these areas with the methodology of the 1960's. In the 1970's we need to build further, replicating and expanding the channel research with new methodological advances. We feel that the personality of man and the structure of the universe cannot be fully understood apart from the ESP channel.

REFERENCES

1. ANDERSON, M. L., AND WHITE, R. A. "A Survey of Work on ESP and Teacher-Pupil Attitudes." *Journal of Parapsychology*, Vol. 22, December, 1958, 246-268.
2. GARINGTON, W. *Matter, Mind and Meaning*. New Haven: Yale University Press, 1949.
3. CARPENTER, J. C. "Scoring Effects within the Run." *Journal of Parapsychology*, Vol. 30, June, 1966, 73-83.
4. ———. "Further Study on a Mood Adjective Check List and ESP Run-Score Variance." *Journal of Parapsychology*, Vol. 33, March, 1969, 48-56.
5. DOBBS, H. A. C. "Time and Extrasensory Perception." *Proc. S.P.R.*, Vol. 54, 1965, 249-361.
6. DRAPER, N. R., AND SMITH, H. *Applied Regression*. New York: Wiley, 1966.
7. EYSENCK, H. J. "Personality and Extra-Sensory Perception." *Journal S.P.R.*, Vol. 44, June, 1967, 55-71.
8. EYSENCK, H. J., AND EYSENCK, S. B. G. "Eysenck Personality Inventory, Form A." San Diego, California: Educational and Industrial Testing Service, 1965.
9. FEATHER, S. R., AND BRIER, R. "The Possible Effect of the Checker in Precognition Tests." *Journal of Parapsychology*, Vol. 32, September, 1968, 167-175.
10. FISK, G. W., AND WEST, D. J. "ESP and Mood: Report of a 'Mass' Experiment." *Journal S.P.R.*, Vol. 38, September, 1956, 320-329.
11. KNAPP, R. H., AND GARBUTT, J. T. "Time Imagery and the Achievement Motive." *Journal of Personality*, Vol. 26, September, 1958, 426-434.
12. MARSH, M. C. *Linkage in Extra-Sensory Perception*. Unpublished Ph.D. thesis, Grahamstown, South Africa: Rhodes University, 1958.
13. MORRISON, D. F. *Multivariate Statistical Methods*. New York: McGraw-Hill, 1967.
14. MURPHY, G. "Lawfulness Versus Caprice: Is There a 'Law of Psychic Phenomena?'" *Journal A.S.P.R.*, Vol. 58, October, 1964, 238-249.
15. ———. "Direct Contacts with Past and Future: Retro-cognition and Precognition." *Journal A.S.P.R.*, Vol. 61, January, 1967, 3-23.
16. ———. "Are There any Solid Facts in Psychical Research?" *Journal A.S.P.R.*, Vol. 64, January, 1970, 3-17.
17. MYERS, F. W. H. *Human Personality and its Survival of Bodily Death*. New York: Longmans, Green, 1903. (2 vols.)

18. NIELSEN, W. "Mental States Associated with Success in Precognition." *Journal of Parapsychology*, Vol. 20, June, 1956, 96-109.
19. NIELSEN, W., AND FREEMAN, J. "Consistency of Relationship Between ESP and Emotional Variables." *Journal of Parapsychology*, Vol. 29, June, 1965, 75-88.
20. OESTERREICH, T. K. *Die Philosophische Bedeutung der Mediumistischen Phänomene*. Stuttgart, 1924.
21. OSIS, K. "ESP Over Distance: A Survey of Experiments Published in English." With an Appendix by M. E. Turner, Jr., "A Statistical Model for Examining the Relation between ESP and Distance." *Journal A.S.P.R.*, Vol. 59, January, 1965, 22-46.
22. OSIS, K., AND BOKERT, E. "ESP and Changed States of Consciousness Induced by Meditation." *Journal A.S.P.R.*, Vol. 65, January, 1971, 17-65.
23. OSIS, K., AND FAHLER, J. "Space and Time Variables in ESP." *Journal A.S.P.R.*, Vol. 59, April, 1965, 130-145.
24. OSIS, K., AND TURNER, M. E., JR. "Distance and ESP: A Transcontinental Experiment." *Proc. A.S.P.R.*, Vol. 27, 1968.
25. POPE, P. T., AND WEBSTER, J. T. "The Use of an F-Statistic in Stepwise Regression Procedures." Paper presented at Spring, 1970, Meeting of Eastern North American Region, Biometric Society, Chapel Hill, North Carolina.
26. RAO, K. R. *Experimental Parapsychology*. Springfield, Illinois: Thomas, 1966.
27. RHINE, J. B. "The Effect of Distance in ESP Tests." *Journal of Parapsychology*, Vol. 1, September, 1937, 172-184.
28. ———. *The Reach of the Mind*. New York: William Sloane Associates, 1947.
29. RHINE, J. B., AND OTHERS. *Extra-Sensory Perception after Sixty Years*. New York: Henry Holt, 1940.
30. RHINE, J. B., AND PRATT, J. G. *Parapsychology: Frontier Science of the Mind*. Springfield, Illinois: Thomas, 1957.
31. ROGERS, D. P. "Negative and Positive Affect and ESP Run-Score Variance." *Journal of Parapsychology*, Vol. 30, September, 1966, 151-159.
32. ROSENTHAL, R. *Experimenter Effects in Behavioral Research*. New York: Appleton-Century-Crofts, 1966.
33. ROSENZWEIG, S., FLEMING, E. E., AND CLARKE, H. J. "Revised Scoring Manual for the Rosenzweig Picture-Frustration Study." *Journal of Psychology*, Vol. 24, October, 1947, 165-208.
34. RUDERFER, M. "Note on the Effect of Distance on ESP." *Journal A.S.P.R.*, Vol. 63, April, 1969, 197-201.

35. SCHMEIDLER, G. R. "Evidence for Two Kinds of Telepathy." *International Journal of Parapsychology*, Vol. 3, Summer, 1961, 5-48.
36. SIDGWICK, E. M. *Phantasms of the Living*. New Hyde Park, New York: University Books, 1962.
37. TART, C. T. "Learning to Use Psi." Unpublished manuscript.
38. TURNER, M. E., JR., AND OSIS, K. "A Probability Model for Symbol-Calling Experiments." *Journal A.S.P.R.*, Vol. 64, July, 1970, 303-312.
39. TYRRELL, G. N. M. *The Personality of Man*. Baltimore: Penguin Books, 1947.
40. USHER, F. L., AND BURT, F. P. "Thought Transference." *Annals of Psychical Science*, Vol. 8, 1909, 561-600.
41. VASILIEV, L. L. *Experiments in Mental Suggestion*. Church Crookham, Hampshire, England: Institute for the Study of Mental Images, 1963.
42. WEST, D. J., AND FISK, G. W. "A Dual ESP Experiment with Clock Cards." *Journal S.P.R.*, Vol. 37, November-December, 1953, 185-197.
43. WOODRUFF, J. L., AND DALE, L. A. "Subject and Experimenter Attitudes in Relation to ESP Scoring." *Journal A.S.P.R.*, Vol. 44, July, 1950, 87-112.

The Chester F. Carlson Research Laboratory**A.S.P.R.****5 West 73rd Street****New York, N. Y. 10023****APPENDIX I****Observation Sheet**

(Please fill in right after the session)

- A. Time spent in preparing yourself for the experiment: _____ minutes (approximately)
- B. Stimulants taken within 3 hours:
Coffee, Tea, or Cola drink _____ Alcohol _____
- C. Stimulating Procedures:
Walk _____ Rhythmic exercises _____ Warm bath _____ Playing instrument _____
Listening to music _____ Reading _____ Family of Man _____
Meditation _____ Prayer _____ Self hypnosis _____ Other _____
- D. If you prepared yourself, what did you do? _____
- E. How did you feel during the session? Below are 10 psychological scales. Please place your checkmark on the line according to the instructions given on the special instruction sheet. Be sure that you place one checkmark somewhere along each of the 10 lines. Each scale is important and should be rated by you:

- F. Did anything unusually disturbing or upsetting happen to you lately? _____

G. Did anything particularly good or wonderful happen in your life lately? —

(Please use the other side for any additional comments)