

# EXPERIMENTS ON THE NATURE OF EXTRA-SENSORY PERCEPTION

## I.—REPETITIONS OF THE RHINE EXPERIMENTS<sup>1</sup>

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### INTRODUCTION

Acceptance or rejection of a new scientific discovery, assuming of course that the data presented in experimental reports are not inconsistent, is usually contingent upon successful repetitions of the phenomenon under the conditions stated in the experimental reports. The generalizations based upon the conditions of the experiments in question may themselves be open to criticism, but a scientific experiment at least should allow repetition of results with reasonable precision.

Inconsistencies in the experimental reports concerning the discovery and further elaboration of Extra-Sensory Perception have already been pointed out (2) (3) (4) (11). However, the criterion of repeatability of the ESP results has also been surrounded with qualifications to the extent that, if the qualifications are accepted, the publication of non-confirmatory results at this time might truly be considered superfluous. Nevertheless, the present writer wishes to present as the first paper in a series devoted to criticism of ESP: (1) the results of an extensive search for subjects with this hypothetical ability and (2) an evaluation of some of the qualifications to the criterion of repeatability which have been seriously proposed to account for results such as are presented here.

### EXPERIMENTAL METHODS

The general methods as presented in "A Handbook for Testing Extra-Sensory Perception" were followed in the present experiments. The specific methods utilized were: (1) Open Matching (OM), (2)

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<sup>1</sup> Communication No. 3, new series, from the Psychical Research Laboratory at Stanford University. This paper has been read and approved by the Stanford Committee on Psychical Research.

General or Undifferentiated ESP method (GESP), (3) Down Through (DT), and (4) Pure Telepathy (PT).<sup>2</sup>

The commercial variety of ESP cards was used with (OM), (GESP) and (DT) methods. New packs were used whenever the cards became soiled or bent. With the (OM) method, the cards were shuffled twice through an I-Deal mechanical shuffler and cut by the experimenter just before their use by the subject. For the (GESP) and (DT) methods, 10 separate decks of ESP cards were run twice through an I-Deal shuffler before the experimental session; the order of the cards in the deck was separately recorded and the decks were used in order. No cards were used in the (PT) work.

In the experiment with the (OM) method, all cards matched to each key symbol were recorded by frequency in each suit. The cards were turned over by the experimenter (the writer) after the subject had matched them to the key symbols, arranged in suits and recorded on a plain sheet of paper. In the other experiments, the commercial ESP record pad was used. In the case of the (GESP) work, the calls were separately recorded by an observer (the writer) as well as by the experimenters. In (DT) work, the experimenter (the writer) recorded the subject's calls and the subject recorded the card series. In the (PT) procedure, the subject's calls were recorded by an observer (the writer) and by the experimenter. The symbols chosen by the experimenter for sending were not recorded.

TABLE I  
THE DISTRIBUTION OF SUBJECTS, EXPERIMENTERS, AND DECKS  
ACCORDING TO ESP METHOD USED

<i>Method</i>	<i>Subjects</i>	<i>Experimenters</i>	<i>Total Decks</i>
Open Matching (OM)	100	1	1600
General ESP (GESP)	68	16	982
Down Through (DT)	33	3	382
Pure Telepathy (PT)	3	12	130
Totals	204	32	3094

The great majority of subjects and experimenters in these experiments were students in the elementary course in psychology, although anyone willing to devote the time to this experiment was tested. Data on the number of subjects, experimenters, and decks of cards guessed are presented in Table I.

<sup>2</sup> The version of the (PT) method described in Rhine's monograph (8) was repeated in this experiment. The (PT) method described in the Handbook (10) differs from the earlier method in that it advises independent recording.

## RESULTS

1. *Open Matching Method.* In the total of 1,600 packs matched in the Open Matching procedure, 7,936 hits were scored, 8,000 hits were expected by chance and the obtained deviation from chance expectancy was  $-64$ . According to the Table of Appendix A in (10), the standard deviation of the theoretical distribution is 81.6 for 1,600 runs, which yields a critical ratio ( $D/\sigma$ ) of .78. The odds, as given in the Table on Page 59 in (10), against getting this result by chance alone are 6-1, hence it may be concluded that the deviation was produced by chance factors.

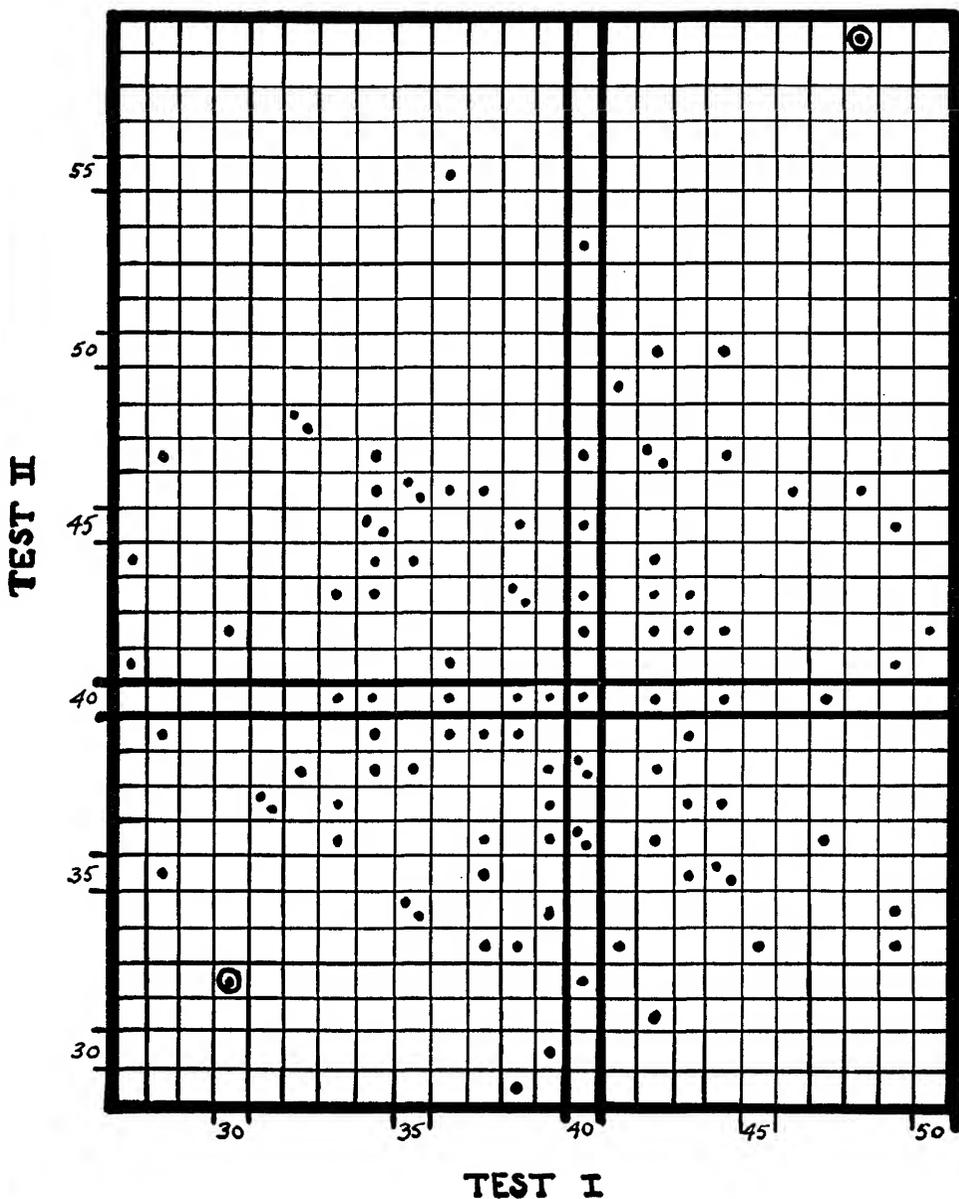
The 1,600 packs reported here were collected in two sessions. At one experimental session, the subject matched eight packs of cards and repeated this procedure at a second session at a later time. By means of a correlational technique, it is possible to decide whether or not subjects demonstrate an extra-chance consistency in scoring within the total chance scoring of the whole experiment. Figure I presents the scatter plot for this correlation. Each dot represents the score of a single subject on Tests I and II. The Pearsonian  $r$  is  $-.0004 \pm .0675$ , indicating nothing but chance consistency. The extreme cases encircled in the figure have been reported in a previous paper (5).

2. *General Extra-Sensory Perception Method.* For the total of 982 packs collected by this method, the obtained number of hits was 4,987, the expected number 4,910 and the difference was  $+77$ . The standard deviation computed was 63.91 and the critical ratio, 1.20. Of the 68 subjects and 16 experimenters tested with this method, not one demonstrated anything but chance performance.

3. *Down Through Method.* The 382 packs guessed by 33 subjects with the Down Through method yielded a total of 1,852 hits where the expected number was 1,910. The standard deviation is 39.78 and the critical ratio is 1.46, indicating odds of 15-1 against the chance explanation of the results. No individual subject or experimenter obtained extra-chance results.

4. *Pure Telepathy Method.* In the 130 packs guessed with the Pure Telepathy methods, a total of 767 hits was scored. The expected number by chance was 650 and the difference was  $+117$ . The standard deviation for 130 packs is 23.26 and the critical ratio is 5.02, yielding odds of approximately 3,383,000 to 1 against the chance explanation of these results. Since these are the only extra-chance data in the present experiment, they merit further analysis.

SCATTER-DIAGRAM OF TOTAL HITS PER TEST



TEST I

Fig. 1

The PT method as used in the present experiment introduced several unsatisfactory points of methodology in conducting ESP experiments. First, the experimenter or sender was allowed to choose the symbols to be sent without reference to a pack of shuffled cards. According to Goodfellow's recent findings with respect to patterns of choices (1), this method does not eliminate the possibility that similar "mental habits" or preferences in choosing between subject and experimenter may have produced a spuriously large number of coincidences when the results were compared with theoretical values which are based upon the assumption of complete randomization of material to be "sent." Second, in recording the results of the experiment, he (the "sender") was required to record the subject's calls only and to indicate a hit by merely checking the called symbol when it matched the symbol on which he was concentrating. Kellogg (4) has presented a critique of both points indicating that results obtained with this method are certainly questionable as evidence for telepathy. Since the actual order of the symbols chosen by the sender is not known, the data, as they stand, do not lend themselves to any kind of analysis or interpretation. They are merely experimental curiosities.

#### DISCUSSION

The results of the present experiment are certainly negative with respect to ESP in 204 subjects, 32 experimenters, and 3,094 packs of cards. The only extra-chance result was obtained under poorly controlled conditions. Some attempt, however, should be made to evaluate negative results in the light of certain hypotheses in ESP research which would, if accepted, explain away non-confirmations of the ESP theory.

The first qualification to the criterion of repeatability of the ESP experiments has to do with the assertion that only a few people can obtain extra-chance results when acting as subjects in ESP experiments. Certainly individual differences are the rule in other psychological abilities; why not in ESP? The incidence of good ESP subjects has been estimated at 1 out of 5 persons tested (8, p. 106), yet in the present experiment not a single subject capable of maintaining an extra-chance average under controlled conditions was found. It may be concluded that the 1 in 5 generalization does not fit these facts.

The second qualification is embodied in recent research findings (6) (7) that only some experimenters can produce extra-chance results with some subjects. This finding applies not only to the

telepathy experiments in which the experimenter takes an active part as "sender" but also to the Down Through and other clairvoyance methods in which he acts only as shuffler and recorder. None of our 32 experimenters were able to obtain extra-chance scores with the subjects they tested when conditions were adequately controlled.

Finally, the hypothesis of impermanence of ESP ability (7, p. 158) is perhaps the most important barrier to meaningful repetition of the ESP results. According to this hypothesis, even if a subject who at one time had shown evidence of ESP ability by his extra-sensory scoring had been tested in the present group and had obtained results at the chance level, the failure of the ability to manifest itself should be looked upon as a temporary loss of the ability.

The facts on which these hypotheses are based seem to the present writer to be amenable to other interpretations. Specifically, the role of the experimenter and the experimental conditions needs to be more fully elaborated before accepting the above hypotheses as anything other than easy rationalizations for "chance" results obtained under what appear objectively to be the same conditions as those which produced "extra-chance" results. Non-ESP factors capable of producing spurious evidence for ESP will be discussed more fully in following papers.

#### CONCLUSIONS

It is difficult to draw conclusions from negative results such as are reported in this paper. The writer believes, however, that the following summary statements may be made:

- (1) The results of a relatively extensive search, conducted with several ESP methods, for individuals who are capable of obtaining the extra-chance scores in card-guessing were entirely negative when these methods were completely controlled for source of error.
- (2) The Pure Telepathy method, as used originally by Rhine, yielded extra-chance results in this experiment. The conditions under which the data were collected, however, preclude analysis of the nature of these extra-chance scores.

#### REFERENCES

1. Goodfellow, L. D. A psychological interpretation of the results of the Zenith radio experiments in telepathy. *J. Exper. Psychol.*, 1938, 23:601-632.

2. Gulliksen, H. O. Extra-sensory perception—what is it? *Am. J. Sociol.*, 1938, 43:623-632.
3. Kellogg, C. E. Dr. J. B. Rhine and extra-sensory perception. *J. Abnorm. (soc.) Psychol.*, 1930, 31:190-193.
4. Kellogg, C. E. New evidence (?) for extra-sensory perception. *Sci. Mon.*, N. Y., 1937, 45:331-341.
5. Kennedy, J. L. The visual cues from the backs of the ESP cards. *J. Psychol.*, 1938, 6:149-153.
6. MacFarland, J. D. Discrimination shown between experimenters by subjects. *J. Parapsychol.*, 1938, 2:160-170.
7. Pratt, J. G., and Price, M.M. The experimenter-subject relationship in tests for ESP. *J. Parapsychol.*, 1938, 2:84-94.
8. Rhine, J. B. Extra-sensory perception. Boston: Boston Soc. Psychic. Res., 1934.
9. Rhine, J. B. New frontiers of the mind. New York: Farrar and Rinehart, 1937.
10. Stuart, C. E., and Pratt, J. G. A handbook for testing extra-sensory perception. New York: Farrar and Rinehart, 1937.
11. Wolfe, D. L. A review of the work on extra-sensory perception. *Am. J. Psychiat.*, 1938, 94:943-955.