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|  | THE RELIABLE APPLICATION OF ESP  By REMI J. CADORET | | |  |
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|  | ABSTRACT: This article presents a new method to measure (and predict) the reliability of ESP performance before the trials are checked. The results of its first application are of borderline significance by the usual standards in psi research and the timely importance of the project warrants publication.  The author chose as the basis of his test the technique of locating concealed objects, using the automatisms or dissociated movements common to dowsing. Two types of target location were needed: one nearby for quick easy checking (this was called the index target), and the other more remote (which was called the test target). On the basis of the tests made with the index targets, the reliability of efforts to locate the test target was estimated and success was "predicted." The index target was a penny located under one of 25 square tiles arranged in a five-by-five matrix and the test target was a penny located in a similarly designed but larger plot, situated on the grounds of the author's residence. The trials intended for the plot of ground were carried out on a map with a five-by-five matrix similar in size and arrangement to the 25 tiles. Thus the performance for the subjects was essentially similar whether for the index target or the test target. A certain number of "diagnostic" trials were done on the index targets, followed by a limited number on the test targets in the same session. The results from the former were then used to estimate and predict the order of success expected on the latter.  The location-finding technique consisted of a two-step procedure. First the subject was instructed to choose the row in which he thought the coin lay, and after fixing upon a certain row, he was asked to indicate which square in the row he thought was the correct one.  The scoring of success was done, in the first two series, on both direct hits and near-hits, or displacement. The third series was scored for direct hits alone. The method used in making the predictions is described and its application to the third series is evaluated. In this series the index targets gave results of near significance and the prediction of the test targets based on them was significant.  Dr. Cadoret is a member of the staff of the Parapsychology Laboratory who is at present on leave for a term of service with the Medical Corps of the TJ. S. Air Force.—Ed. | | |  |

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I. A GENERAL SURVEY

WHILE there have been many practices used through the ages in which psi has been believed to play a part, there has not yet been any appreciable success in the reliable application of the ability to the solution of problems. This apparent neglect of a challenging area of inquiry stems from the elusive nature of psi itself rather than from the technical difficulties of extracting the required information from the data. The mathematics of information and communication systems is well able to deal with the latter problem. The major obstacle to the practical use of ESP at the present time is the unreliability of its operation, at least in a recognizable form, under controlled observation. I shall survey briefly in the first section of this paper some of the previous attempts to make a reliable application of the capacity.

Probably the earliest approach to a method of practical application of ESP was tried in the early years of the Duke ESP investigations, both at the Parapsychology Laboratory and in exploratory investigations with which the Laboratory was in contact. Essentially it was a way of concentrating the small amount of scattered ESP activity so that a reliable quantity of information could be garnered from the data. The general method was as follows: A standard deck of ESP cards was prepared, with each card individually enclosed in a sealed opaque envelope and with the envelopes numbered. The individual cards, arranged in different order from one run to another, were used in a series of card-calling tests of ESP in the usual manner and the calls were recorded. After a specified number of trials had been made with the deck of enclosed cards, the call records were analyzed and the call most often made for a given card was chosen the most likely target symbol. The purpose of the test was, of course, to see whether the set of predictions derived by this method would prove to have a higher score average than the original calls themselves from which the derivation was made. All of these efforts were exploratory, and they did not reach the point of a systematic and exhaustive research. However, the method as far as applied was not successful; that is, it did not represent an effective way of concentrating the thinly scattered ESP hits which the significance of the over-all results indicated were present in the original records.

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|  | It was recognized at the time also that there were psychological difficulties inherent in the experimental procedure that were not adequately met at that stage of exploration; for example, the fact that the subject was told the nature of the experiment and realized that he was repeating trials on the same target material without being given the usual report of his scores after each run. Possibly because of this, there was in general a reduced scoring level which afforded a less adequate test than was desirable. Also, the method offers no control over the type of ESP manifestation (such as displacement or psi missing).  About fifteen years ago, A. A. Foster (2) experimented with a more complex method of obtaining practical information through ESP. In this method, which is the only one ever to appear in print, a question was selected to which the answer was either *yes* or *no.* To indicate the answer, the subject was given a deck of red and black cards in opaque envelopes and was instructed to sort them into two piles; a black area which meant *true* and a red area which meant *false.* If the answer to the proposed question was *yes* and the subject knew the answer (either sensorially or through ESP), then the task was to sort all the black cards into the black disposition area and to avoid doing so if the answer was *no.* Essentially the task was to match by ESP two like colors if the answer was *yes* and two unlike colors to designate *no.* In theory the answer, and even the question, could remain unknown to the subject, to the experimenter, or to both. Whether the subject could determine the correct answer to the question by ESP as well as indicate the answer by further exercise of ESP was a problem which Foster tried to answer empirically.  Unfortunately Foster found no evidence that ESP was operating when he tried this method on Indian children who had demonstrated ESP ability in other tests. However, this system embodies a feature which later methods have sought after: it contains a built-in indicator of ESP activity since to demonstrate a *yes* or *no* response successfully, ESP must operate. But at the same time, it contains no control over the direction of the response to the proposed question. A subject might successfully indicate *no* to a question whose answer was *yes.* Foster himself realized this when he wrote that "the sign of the response may reflect, not verity but the inmost desire | |  |

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of the subject." A reliable method should not only contain a way to determine if ESP is operating but should also indicate the direction of the response to the particular question asked. A further requirement is that a method must offer some control over psi missing, consistent missing, displacement, and sundry other manifestations of ESP.

Most of the proposed methods of putting psi to practical use have been methodological or statistical innovations to control the direction and type of ESP manifestation in addition to concentrating the small amount of ESP present into reliable bits of information. I will present some of these developments even though experimental proof of their reliability is lacking to date. Their virtue lies in their theoretical implications and the glimpse they afford of the many problems of an elementary nature which we must solve to make practical ESP a reality.

One approach to controlling the direction of the response and the type of ESP manifestation was suggested by the proven uniformity of a subject's ESP performance shown during a given period of testing. Such uniformity has been demonstrated at many levels, from consistency of performance on tasks given at the same session (6) to the similarity of scoring within single runs as demonstrated by the decline effect. The possibility that consistency in performance both within the run and from run to run could be turned to dependable use was investigated at Duke about five years ago by S. J. Hallett (4). Hallett applied analyses of correlation and regression to various published data in which ESP was known to have occurred, and he found that it was perfectly feasible to use either random or systematic sampling of calls and runs to predict performance in the remaining data and thus identify the target cards with accuracy. He then tried to apply this general methodology to the reliable prediction of future events. In preliminary tests three groups of precognitive calls were made at one session by his subjects for targets to be selected in the future. Each call group was composed of trials distributed throughout the run in order to neutralize decline effects among the three groups; and from the performance on one group, hereafter called the *index trials,* Hallett hoped to be able to predict the rate of hitting on the other two groups and thence the identity of the targets themselves. Unfor-

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|  | tunately, in the several experiments tried, results did not exceed  chance; that is, no ESP was demonstrated.  At least this method offers an index of the amount of ESP present—whether it be direct-target hitting, displacement hitting, or one of the other manifestations of ESP—and hence, offers the possibility of identifying an unknown target, hereafter called the *test target,* assuming a similarity of performance between the calls used for the index trials and the remainder of the calls made against the test targets (whose identity is to be determined from the former).  However, one can count on similarity of performance with the index targets and the test targets to occur only under similar conditions. Some of these conditions we know, others we can guess at, and still others we can barely conceive of with our limited knowledge. It seems obvious that the type of ESP used must be constant. For example, if clairvoyance is used to identify the index targets and precognition is used by the subject in responding to the test targets, we should not be surprised to find little correlation between the two. But it should be possible, by manipulating experimental conditions, to keep the type of ESP used constant in the two parts of the test.  The type of target is another condition which we might consider should be constant. Insofar as possible, the index targets should be similar to the test targets as a check on the unconscious distortion to which both sets of targets are exposed.  A further measure to insure similarity in conditions, and hence in performance, was demonstrated in Hallett's technique of keeping the subject purposefully unaware of whether a particular call was being made for an index target or a test target. Presumably, in this way we eliminate conscious bias, and the subject orients himself toward the proper target unconsciously.  But even if conscious bias is eliminated, there is still no control on the possibly more powerful unconscious factors, whose presence the psychopathology occurring in our everyday lives amply demonstrates. Can we depend on the unconscious to orient itself correctly toward the proper target? This certainly seems to place a great amount of confidence in an entity which most psychiatrists assure | |  |

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us is both unscrupulous and undependable and out to get us, much like the devil of medieval days.

However, on theoretical grounds there is reason to believe that some confidence in the possibility of controlling unconscious bias may not be entirely misplaced. Very early in ESP investigations evidence was found which suggested that as a perceptual process, ESP is diametric in nature. By this is meant that ESP comprehends entire relationships in one action instead of piecing the relationship together from separate bits of information (7). For example, in a blind matching procedure in which the key cards are not known, subjects score about as well as they do in an open-matching procedure, in which the identity of the key cards is known, even though in the blind matching the ESP process apparently must ferret out more information. The reader can see how this applies to our situation: the diametric ESP process will theoretically be able to orient itself correctly toward the proper target with little further effort.

Some of the methods proposed have really leaned quite heavily on the diametric principle. The Foster work made use of it. Most of Hallett's methods relied on it. For example, in one of Hallett's techniques, a subject was presented with a number of multiple-choice questions. To some of them the answers were known, and these served as controls on index targets. The answer sheet was concealed within an envelope, making the process essentially a complex blind-matching procedure. This latter method never came to experimental trial, so we are unable to judge its efficacy. Whether techniques like this presume too much on the diametric nature of ESP is a question for research to solve. However, recent work by Soal with Mrs. Stewart (especially the telepathy-in-conjunction tests, in which two agents took an essential part) has tended to confirm the diametric hypothesis (8), and it appears that practical methods utilizing the possible diametric nature of psi are heading in the right direction.

There is another way in which elimination of conscious orientation might be profitable; that is in minimizing the dual-task effect such as that reported by Hallett (3). In these tests the subject had to identify two aspects of the same target, the symbol and its position in the row. If the subject regards such a test as two separate tasks, different scoring may result on each, as has been noted in

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|  | both ESP and PK experiments. The cause of this may be tied up with conscious motives, but it is equally as likely that the unconscious is an important factor.  At any rate, the conviction arises from a study of these various methods that, given similar performance for both index and test targets (which is presuming a great deal), statistical techniques of measuring the ESP present in the index trials and determining the identity of the test targets are feasible. One further point to consider in the statistical determination of targets to be ascertained from the index trials is that different methods may be tried empirically and tailored to give optimum results. If we might paraphrase a Biblical quotation applicable here: By their fruits ye shall know them—not by their roots. This freedom of exploration should be valid as long as we judge the final results *objectively.*  So far, we have been discussing the harnessing of ESP and have really been talking around the basic problem, which is the guided production of a recognizable manifestation of ESP. There have been many experiments relating ESP to personality factors and numerous other variables, but all that these studies have really measured is differences in the way ESP manifests itself. How and when it occurs is still unknown. If we wish to predict the future reliably or even be able to locate underground water, we must learn to produce ESP. All of the methods described above failed in practice at least partly because they gave no evidence of psi. Until the production of ESP is on a more reliable basis, the following suggestions for approaching the problem are justified and might incidentally shed light on the fundamental nature of ESP. "Crash" programs leading to ESP production might include an ESP game to be tried on enthusiastic audiences such as school children. Another approach easily overlooked because of its obviousness is the use of already skilled personnel who might use ESP, such as dowsers, when they are adaptable or trainable to the particular task.  In some of the many measurable physiological processes, correlates with ESP performance might be discovered, thus making the reliable application of psi easier as well as providing fundamental information as to the conditions under which ESP occurs. It is rather surprising that this approach has not been more often followed in our physicalistically oriented age. |  |

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| Whatever the approach used to solve the enigma of volitional ESP control, we may be sure that much more effort will be needed, to judge by progress so far. Although the reliable use of ESP involves so many unknowns, the goal is worth the trials, both for utilitarian reasons as well as for the more intangible benefits which follow human self-discovery.  In these days when the prevailing philosophy is to use force to obtain one's ends, it may seem incredibly naive to suggest that the ultimate weapon might prove to be knowledge and understanding of the basic motives and plans of our fellow-men. With psi suitably controlled we may have a means of penetrating the manifold barriers which separate us from each other, whether these be natural barriers of space and time or those which our societies and politics impose upon us.  II. A PILOT STIII. A PILOT STUDY OF A METHOD OF LOCATING SPATIAL  EVENTS BY ESP  Dowsing for hidden substances may represent a successful application of ESP to a practical problem of everyday living. The water dowser's claim of ability to produce results whether through phenomenal ESP ability, shrewd use of sensory aids (such as topography), or just because of the ubiquity of sub-surface water, is too well known to require further comment here. Discovery of the location of other minerals is an important area of human endeavor, which occupies hundreds of people in constant search for hidden wealth which is too often concealed by an indifferent nature with barely a clue to its whereabouts. The successful application of ESP on a firm scientific basis to facilitate such searches would mark an epoch.  As a starting point we can state in general terms that the need exists for an ESP method which can be applied to the solution of problems whose answer is some locus in space. This paper will detail the development of one such method, describe its testing in a simulated problem of location, and further witness its shortcomings as well as its minor triumphs.  One approach to this problem was suggested by the work of Fisk (1, 5) in Great Britain with what are called Clock Cards. On these cards is printed the face of a clock whose single hand points | |
| |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  |  | |  | |  | *The Reliable Application of ESP* | 211 |  | |  |  | |  | |  | to one of the twelve hours. These investigations have demonstrated that in addition to direct target hour hits, calls tended to center about the target hour. This phenomenon could represent an association in the subjects' minds between neighboring numbers—a type of consistent missing; or, giving it a different interpretation, it could represent a general awareness of the target locus (regardless of its association with an hour of the day) with the misses being of such a nature that they could more appropriately be measured in some unit of distance. Thus displacement in the form of geometric distance between a response and the target may be another manifestation of ESP. If there is a reliable tendency for calls that miss the target to have nevertheless some geometric relationship to a target point, then an efficient method of statistically determining unknown target loci could be developed by using the information contained in each call.  First, I shall present experimental evidence supporting the following hypothesis: that calls directed to a target point in space can be arranged in distinct geometric relationship by ESP. For example, this may be manifested by a piling-up of hits about the target, similar to the British experiment with Clock Cards, or it may show itself in displacement indicated by constancy of distance or direction from the target. Then, proceeding on the basis of preliminary experiments which supported this hypothesis, I shall present a method of statistically approximating the locus of an unknown target, a method which was developed in part from some of the methods mentioned in Part I of this paper.  The experiments about to be described were carried out during the summer of 1954 as an outgrowth of an interest in dowsing. The target was a penny which was concealed under one of 25 squares arranged in five rows and five columns; that is, in a five-by-five matrix. In Series 1 the squares in the matrix were all covered by thick paper folded once for greater opaqueness. These papers were about four inches square so that a penny was well covered, though I do not pretend that sensory cues were impossible. In the subsequent two series the squares were of 25 opaque plastic tiles with recessed backs which concealed the target penny without being tilted. The target square within the five-by-five matrix was determined always by use of a table of random numbers. While the | |  | |  | 212  subject was out of the room, the experimenter selected the target square, concealed the penny there, and at the same time touched and slightly moved most or all of the remaining squares so that a discerning subject could not tell the target by noting the one square that had been moved. For the first two series the squares were located on the floor or on a table; for the final, third, series they were on a card table and were placed approximately one-quarter of an inch apart. When the subject returned to the room to make his call, there was no conversation until the call was made and recorded; then the subject was usually shown where the penny really was and the target locus was recorded by the experimenter. While the subject was making his call, the experimenter looked away from the squares to minimize sensory cues, or went into an adjoining room during the selection.  To simulate a dowsing situation a motor automatism was used by the subject to make his call. Miss Sarah Springer, one of the subjects, suggested the use of a pendulum, which was made out of a heavy antique button suspended from a short length of string. The experimenter suggested to each subject that he stand at one side of the matrix and "will" the pendulum to swing toward the row containing the target penny. The same process was repeated on an adjacent side of the matrix to determine which column the penny was in, and thus two "fixes" were made to find out which of the 25 squares concealed the penny. I had the opportunity of introducing about a dozen and a half people to the use of the pendulum and found that most had no trouble getting it to move automatically, although it did not always tell the truth with equal facility.  For the greater part of the tests the writer served as experimenter, but when the experimenter took a turn as subject, his wife became the experimenter. Throughout all the tests an easy informality was the rule, though at no time was precision in method sacrificed.  Since the experimental procedure consumed so much time, only 16 to 20 calls were made by a subject during a session in Series 1. In Series 2 sessions were of standard length, 16 calls, except where otherwise noted. In all there were three series.  Series 1 comprised 138 calls. The stopping point was purely arbitrary and a halt was called because I was more motivated to try | |  | |  |  |  |  | | |

to analyze data than to collect more. The outlook for good results seemed poor since the data contained only three direct hits (with mean chance expectation 5.5); and I was anxious to see if there were, nevertheless, some secondary effects present in the results in the form of "near misses" or partial hits.

The evaluation of displacement measured in terms of distance between the call and the target squares can be solved in several ways but the following method was finally chosen for its relative simplicity. {1} If the side of one square in the five-by-five matrix is considered as one unit of length, and distances between any two squares are measured from the two centers, then we obtain the various distance values shown in Table 1. Ci to Ce represent the six types of call positions possible in a five-by-five matrix, and distances are measured from each of these points to the random target point. Thus for every call made, a distance value can be found by consulting Table 1 and reading off the distance in units between the call and the target point. By this method it is possible to assess the distance factor directly.

Given a number of calls, one can determine the theoretical mean and the variance by the formulae given with Table 1, and hence their combined significance.

Since this is a new method of evaluation, I decided to check its results empirically by a control. To construct the control series, calls which had been made were matched to targets for which they were not intended but which occurred in the same session. This was accomplished by regularly comparing the calls in the first half of a session and the targets occurring in the latter half of a session, and vice versa.

By this method of analysis the total experimental data in Series 1 were found to be very close to chance, but a routine check for chronological decline within the session revealed a suggestive decline pattern in which most of the above-chance performance was confined to the first half of the session. The control data, on the other hand, showed nothing significant. This information is contained in Table 2.

{1} For the evolution and refinement of the method of evaluation I am indebted to the efforts of Mr. Malcolm Turner and Drs. J. A. Greenwood and T.N.E. Greville. For the derivation of the formulae in Table 1, I wish to thank Dr. Greenwood.

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| 214 | *The Journal of Parapsychology*  Table 1  METHOD OF DISTANCE EVALUATION |  |
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|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  | d a c f i | a | Cz a c f | c a C 8 a c |  | |  | a b d g j | b | a b d g | d b a b d |  | |  | c d e h 1 | d | c d e h | e d c d e |  | |  | f g h k m | g | f g h k | h g f g h |  | |  | i j 1 m n | j | i j 1 m | 1 j i j 1 |  | |  | b a b d g | d | b a b d | e d c d e |  | |  | a €4 a c f | c | a CB a c | d b a b d |  | |  | b a b d g | d | b a b d | c a C« a c |  | |  | d c d e h | e | d c d e | d b a b d |  | |  | g f g h k | h | g f g h | e d c d e |  | |  |  |  |  |  |  | | |  |
|  |  | |  |
|  | Distance Values | |  |
|  | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  | Ci- e =0.0000 | h=3.6056 |  | |  | a =1.0000 | 1=4.0000 |  | |  | b =1.4142 | j =4. 1231 |  | |  | c =2.0000 | k=4.2426 |  | |  | d =2.2361 | 1=4.4721 |  | |  | e =2.8284 | m = S.OOOO |  | |  | f =3.0000 | n=5.6569 |  | |  | g =3.1623 |  |  | |  |  |  |  | | |  |
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|  | **KEY: Ci\_6=6 basic call positions, a to n=the distances from the center of each call position to the  center of calls in the matrix, using the shortest distance between centers as the unit of measure.**  **EVALUATION: M=Expected Mean; V=Variance; fCi.»=frequency of basic call positions in an ex-  periment.**  **M=3.1736 fCi+2.7210 fC»+2.5662 fCs+2.2213 fC4+2.0S06 fCs+1.8744 fC«  V=1.9283 fCi+1.5962 fCa+1.4146 fCs+1.0658 fC4+0.7950 fCB+0.4866 fCe  CR = Observed sum of distance values — *M ..* ------------------------\_\_------------------- --------\_^ normality**  VV approaches  The decline was revealed more strikingly by the following analysis in which the data were divided into chronological halves by session, as above, and further broken down into two groups of calls: (1) those scoring hits or near misses (distance value of less than 2.0); and (2) all other calls (distance value of 2.0 and above). This means of dividing the distances into two groups was selected arbitrarily as one of convenience without regard to the results of the evaluations. From this breakdown a four-place contingency | |  |

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|  | *The Reliable Application of ESP*  Table 2  GENERAL RESULTS AND SESSION DECLINE ANALYSIS FOR SERIES 1  EXPERIMENTAL DATA | 215 |  |
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|  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  |  | Expected  Total  Distance | Observed  Total  Distance | Dev.\* | CR | P |  | |  | First half session . . | 161 4373 | 142.9304 | +18 5069 | 2 08 | 038 |  | |  |  |  |  |  |  |  |  | |  | Second half session. . . | 167.7444 | 169.2273 | - 1.4829 | -.15 | .50 |  | |  | Total ............ | 329.1817 | 312.1577 | +17.024 | 1 32 | .19 |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | |  |
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|  | (1st half vs. 2nd half) = 1.55; P=\* . 12  CONTROL DATA | |  |
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|  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  | First half session ..... | 161.4373 | 157.7645 | + 3.6728 | .41 | .50 |  | |  |  |  |  |  |  |  |  | |  | Second half session . . . | 167.7444 | 157.3305 | +10.4139 | 1.12 | .26 |  | |  | Total ............ | 329.1817 | 315.0950 | +14.0867 | 1.09 | .28 |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | |  |
|  |  | |  |
|  | (1st half vs. 2nd half) = .52; P= .50  **"The + sign before the deviation merely i ndicates that the calls tended to be nearer the target than chance  expectation and vice versa.**  table was made which revealed a highly significant difference between the first and second halves of the session. Table 3 gives this result and also shows that there was no such difference in the control group.  These results were so encouraging that I decided to proceed with Series 2 after adding two methodological safeguards: the plastic tiles mentioned above to minimize sensory cues, and sessions with a predetermined number of calls (16 when I was testing or being tested, with the exception that when my wife served as subject there were eight).  Series *2* was stopped when it was approximately equal in size to Series 1. The results were in the predicted direction but they can be considered only suggestive. The results appear in Tables 4 and 5, while Tables 6 and *7* summarize these first two series combined.  Although the combined results for Series 1 and 2 are only slightly above mean chance expectation, there seems to be ample evidence of a chronological decline. An additional fact we can note | |  |

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| 216 | *The Journal of Parapsychology*  Table 3  ANALYSES OF SESSION DECLINE IN SERIES 1 | | |  |
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|  | EXPERIMENTAL DATA  Distances Distances  <2.0 ^2.0 Total | | | |  |
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|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  | First half |  |  |  |  | |  | session | 36 | 33 | 69 |  | |  | Second half  session | 16 | 53 | 69 |  | |  |  |  |  |  |  | | | | |  |
|  |  | | | |  |
|  | Total | 52 | 86 | 138 |  |
|  |  | | | |  |
|  | X {2} =12.34(l d.f.);P=.0005  CONTROL DATA  Distances Distances | | | |  |
|  | First half  session  Second half  session  Total | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  | <2.0 ^2.0 | | Total  69  69 |  | |  | 21 | 48 |  | |  | 24 | 45 |  | |  | 45 93 | | 138 |  | |  |  |  |  |  | | | |  |
|  |  | | | |  |
|  | X {2} =.30 (insignificant) | | | |  |
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|  | is that most of the decline was contributed by displacement since the number of direct target hits in each half-session is small: first half *=* 5 hits; second half = 3 hits. When the decline effect in the experimental data as shown in Table 7 is re-evaluated entirely on the "misses" or the trials which would reveal any ESP displacement effect, the level of significance does not change appreciably (X {2} = 10.19, 1 d.f.; P = .0014). Of interest is the significant above-chance performance confined to the first half of a session. This finding of a distance relationship to the target due to ESP led to the further development of an unproved statistical method for concentrating slight ESP effects for reliable use. It came about in the following way.  After Series 1 was completed, I attempted to analyze the data by a different method. This was to measure the distance on the five-by-five area from call to target in two perpendicular axes (in reality the distance the subject was off in row and column de- | | | |  |

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| *The Reliable Application of ESP* 217  Table 4  GENERAL RESULTS AND SESSION DECLINE ANALYSIS FOR SERIES 2  EXPERIMENTAL DATA |  |
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|  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  |  | Expected  Total  Distance | Observed  Total  Distance | Dev. | CR | P |  | |  | First half session . . . | 141.0045 | 122.7222 | +18.2823 | 2.16 | .031 |  | |  |  |  |  |  |  |  |  | |  | Second half session . . . | 142.0542 | 145.6547 | - 4.6005 | -.54 | ~.50 |  | |  | Total ............ | 283.0587 | 269.3769 | +13.6818 | 1.14 | .25 |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |
|  |  |  |
|  | **CRd** (1st half session vs. 2nd half) = 1.90; P= .057  CONTROL DATA |  |
|  |  |  |
|  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  | First half session . . . | 141.0045 | 144.6653 | - 3 6608 | .43 | ~.50 |  | |  |  |  |  |  |  |  |  | |  | Second half session. . . | 142.1542 | 133.2988 | + 8.7554 | 1.02 | .31 |  | |  | Total ............ | 283.0587 | 277.9641 | + 5 0946 | .42 | ~.50 |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |
|  |  |  |
|  | (1st half session vs. 2nd half) = l .03; P= .31  termination—the two fixes, or determinations, on the target locus) and perform a standard correlation operation on the pairs of values so obtained. Since then I have learned that conclusions drawn from *v {?} s* so computed are of dubious validity inasmuch as the values of the two distances used are not normally distributed.  However, a certain amount of interesting information was found in Series 1 and confirmed in Series 2. Although the calls in the second half of the session were farther from the target locus, they were consistently closer in one axis than in the other in such a way that they gave a large negative *r.* Thus the correlation analysis measured not only distance from the target but also, as Dr. Karlis Osis first pointed out, a combination of distance and direction. After Series 2, I decided to use this approach to develop the method of concentration of ESP effect.  From a control performance on targets which could be immediately checked (index trials) I planned to obtain an index, *r,* as described above. At the same time these index calls were made, calls were to be directed against a test target point. The project was to discover whether, with a similarity of performance during |  |

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| --- | --- | --- | --- | --- |
|  | | | |  |
|  | Table 5  ANALYSES OF SESSION DECLINE IN SERIES 2 | | | |  |
|  |  | | | |  |
|  | EXPERIMENTAL DATA  Distances Distances  <2.0 ^2.0 Total | | | |  |
|  |  | | | |  |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  | First half |  |  |  |  | |  | session | 22 | 36 | 58 |  | |  | Second half  session | 17 | 41 | 58 |  | |  |  |  |  |  |  | | | | |  |
|  |  | | | |  |
|  | Total | 39 | 77 | 116 |  |
|  |  | | | |  |
|  | .97 (insignificant) | | | |  |
|  |  | | | |  |
|  | CONTROL DATA  Distances Distances  <2.0 ^2.0 | | | Total |  |
|  |  | | | |  |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  | First half |  |  |  |  | |  | session | 18 | 40 | 58 |  | |  | Second half  session | 19 | 39 | 58 |  | |  |  |  |  |  |  | | | | |  |
|  |  | | | |  |
|  | Total 37 79 116 | | | |  |
|  |  | | | |  |
|  | X {2} = .04 (insignificant) | | | |  |
|  |  | | | |  |
|  | the session, and a knowledge of the *r* from the index calls, it would be possible to assign probable loci to the unknown point to a reliable degree.  The following procedure was used assigning these loci in accordance with principles and conjectures already enumerated in Part I of this paper. A subject would make a number of calls carried out in a short series so as to minimize decline effects. Six calls were set as the number which would represent an adequate sample for an index of ESP and, at the same time, assure a constant performance by virtue of the chronological shortness of the series. It was decided arbitrarily that four of these six calls would be directed toward index targets and the other two would be directed against the test targets to be indicated or inferred. Whether calls were to be for index or test targets was determined by a random process based on a closed deck of cards shuffled before the start of a session. Before a call was made, the experimenter, but not the subject, knew | | | |  |

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| *The Reliable Application of ESP* **219**  Table 6  TOTAL RESULTS AND SESSION DECLINE ANALYSIS IN SERIES 1 AND 2  EXPERIMENTAL DATA |  |
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|  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  |  | Expected  Total  Distance | Observed  Total  Distance | Dev. | CR | P |  | |  | First half session ..... | 302.4418 | 265.6526 | +36.7892 | 2.99 | .0028 |  | |  |  |  |  |  |  |  |  | |  | Second half session . . . | 309.7986 | 315.8820 | - 6.0834 | -.48 | ~.50 |  | |  | Total ........... | 612.2404 | 581 5346 | +30 7058 | 1 74 | 082 |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |
|  |  |  |
|  | (1st half session vs. 2nd half) = 2.43; P= .015  CONTROL DATA |  |
|  |  |  |
|  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  | First half session ..... | 302.4418 | 302.4298 | + .0120 | .00 | 1.0 |  | |  |  |  |  |  |  |  |  | |  | Second half session . . . | 309.7986 | 290.6293 | +19.1693 | 1.52 | .13 |  | |  | Total ............ | 612.2404 | 593.0591 | +19.1813 | 1.09 | .28 |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |
|  |  |  |
|  | (1st half session vs. 2nd half) = 1.09; P= .28  the class of target for which the calls were intended. As soon as a call on an index target was completed, the experimenter told the subject the result.  The problem of supplying a similar target for the trials to test the application of ESP—a target that could readily be checked and still provide a challenging problem—was met in this manner: The back yard of our home contained a level plot of grass about 80 feet square enclosed by bushes, hedges, and fences, with a scattering of trees over it. This area was divided into a five-by-five matrix containing 25 squares, each about 16 feet on a side. In one of these squares a penny was surreptitiously buried by my father-in-law, who took no further part in the experiments and, of course, told no one where the penny was. The target locus was selected from a table of random numbers. The subjects' task was to locate this penny in the back yard. On this final series the penny was hidden a total of ten different times in the back yard, making ten separate tests.  At first I proposed hiding the index targets within the back yard too, but since this would have proven inconvenient and seemed |  |

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| 220 *The Journal of Parapsychology*  **Table** 7  ANALYSES OF SESSION DECLINE IN SERIES 1 AND 2 | | | |  |
|  |  | | | |  |
|  | EXPERIMENTAL DATA  Distances Distances  <2.0 ^2.0 Total | | | |  |
|  |  | | | |  |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  | First halt |  |  |  |  | |  | session | 58 | 69 | 127 |  | |  | Second half  session | 33 | 94 | 127 |  | |  |  |  |  |  |  | | | | |  |
|  |  | | | |  |
|  | Total | 91 | 163 | 254 |  |
|  |  | | | |  |
|  | X\*-10.70(l d.f.);P=.0011  CONTROL DATA  Distances Distances | | | |  |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  | First half  session  Second half  session | <2.0 ^2.0 | | Total  127  127 |  | |  | 39 | 88 |  | |  | 43 | 84 |  | |  |  |  |  |  |  | | | | |  |
|  |  | | | |  |
|  | Total 82 172 254  X {2} =.29 (insignificant) | | | |  |
|  |  | | | |  |
|  | theoretically undesirable (from the fact that there would be several pennies at once within the matrix), I decided to have the subjects dowse from a map. Accordingly, a scale map of the back yard area was made which was large enough to cover a card table. It was appropriately divided into a five-by-five matrix. Each square on the map was the size of the plastic tiles used above in Series *2* to cover the target penny. To provide a subject with an index target, a penny was placed under one of the twenty-five tiles, as with Series 2, and the map was placed over the matrix of tiles so that the penny lay under the appropriate square on the map. By this procedure sensory cues were further minimized and a readily checked set of index trials was provided. When calls were made for the back yard test target, *no* penny was under the map.  Three to eight different people took part in each test. After all available people had tried six calls, an index of performance, the *r* mentioned above, was computed and from this a scatter diagram of | | | |  |

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| --- | --- | --- |
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|  | possible target loci was made, utilizing the calls made for the test target, as described in Appendix I. Although, as noted above, the r is fundamentally unsound, I should emphasize at this point that any method that works is valid enough for *predictive* purposes as long as we judge the results of the prediction by valid statistical methods.  In our case, the evaluation of the results was done in this way: Before the experimenter was told the location of the back yard penny he picked its most probable location, next most likely location, etc., from the scatter diagram. In such a case, if the experimenter's first choice is correct, then the probability in that experiment is 1/25; if the experimenter's sixth choice is correct, then the probability is 6/25, etc. In case of ties, if *n* squares had an equal or larger number of marks and one of them was the target, the P of that test would be n/25. As an approximation, Fisher's method of combining probabilities may be used to evaluate any number of such experiments. For the first four times the penny was hidden, the *r* method of prediction was used and the results were in a positive direction, though not significantly so. The P values for these first four tasks were: 2/25, 3/25, 25/25, and 5/25 with a combined probability of approximately .18.  At this time I visited the Parapsychology Laboratory at Duke University, presented the results to date, and received a number of valuable suggestions some of which have already been mentioned in the preceding paragraphs. In addition, two important points were brought up: (1) the need for an objective way to select from the scatter diagram the probable target locus, the next most likely, etc.; (2) the necessity of clarifying and simplifying the predictive method, preferably by means other than the correlation coefficient. Since we were interested primarily in distance and possibly angle from a target, I followed a suggestion made by Mr. Malcolm Turner and created two separate indices of performance: distance and direction from the target. This new predictive method is described in detail in Appendix II.  While at Duke, I had the members of the Laboratory staff take part in a fifth test, and I evaluated the results according to this new predictive method. The result was a second place hit on the back yard penny with a P value of 2/25. This was very encouraging, | |  |

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|  | and I decided to double the series to 10 such tests. This number was conveniently reached just at the time of my induction into the Armed Forces. For these last five tests, three members of my immediate family participated as subjects. At a session each subject made 18 calls: six calls using the button pendulum previously described, six using a pair of roller-bearing dowsing rods, and six in which the subject called target squares on miniature maps of the back yard area which were prepared beforehand and concealed in envelopes.  The purpose of this change in methodology was both to add variety to the testing and to see if certain techniques favored similar performance on index and test targets. The overall results of the 10 tests carried out with the attempt at applying the results for the location of the test targets are presented in Table 8.  Table 8  GENERAL RESULTS OF INDEX TRIALS OF FINAL SERIES AND OF ATTEMPTED  APPLICATION TO TEST TARGETS | |  |
|  |  | |  |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  | **Test** | **Index Trials** | **Direct Hits** | **Probability for Test Target Location** |  | |  | **1 ....................** | **16** | **1** | **2/25** |  | |  | **2 ............** | **24** | **2** | **3/25** |  | |  | **3 ...................** | **12** | **1** | **25/25** |  | |  | **4 ....................** | **24** | **3** | **5/25** |  | |  | **5 ....................** | **36** | **1** | **2/25** |  | |  | **6 ....................** | **36** | **2** | **20/25** |  | |  | **7 ..................** | **36** | **5** | **1/25** |  | |  | **8 .............** | **36** | **2** | **6/25** |  | |  | **9 ....................** | **36** | **0** | **5/25** |  | |  | **10 ................** | **36** | **2** | **2/25** |  | |  |  |  |  |  |  | |  | **Total ...............** | **292** | **19** |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | | |  |
|  |  | |  |
|  | Dev.= +7.32;SD = +3.35  CR = 2.19; P= .029 | Combination of  probabilities by  Fisher's method:  P=.018 |  |
|  |  | |  |
|  | The index-test performance (that is, calls made for index targets which were immediately checked) contains evidence of ESP that is almost significant, judging from the direct hits alone. An evaluation in terms of distances from target (which includes both direct hits and displacement) was not made. The results in finding the location of the penny in the back yard are significant. Thus, the experiment which was the most vigorous in elimination of sensory | |  |

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| --- | --- | --- |
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|  |  | |  |
|  | cues turned out to be the most successful in extrachance scoring for which we give ESP credit. How reliable this series would have been in actual practice can be surmised if we consider how much effort would have been saved in searching for the penny if we had to sift the ground foot by foot. On the average we would have had to sift about 12.5 squares to find the penny by chance each time; or in a series of ten, about 125 squares. With the predictive method we would accomplish the same results with an expenditure of approximately 57 per cent as much effort (in searching the 71 squares). The reader can easily visualize the manifold uses of such a system if it could be reliably employed.  Since some provision was made to separate the distance and angle factors in the last six tests, I used them separately to see which gave the better prediction. Although the differences were not statistically significant, the data indicated that almost as good predictive success results from the use of the distance measurement alone. This suggests that the angle or direction factor may turn out to be an inconstant feature of performance.  The data indicated that certain of the three methods of making calls (pendulum, dowsing rods, and direct map-reading) favored similar performance on index and test targets. These results cannot be considered conclusive but merely suggest that the technique of making the calls might be very important in the development of a reliable ESP method.  At any rate, we might summarize what we have done and learned. That much is left to be done and learned the reader can only too plainly see. Evidence of ESP has been obtained through the use of a simple motor automatism of some distance relationship between a call and the target, a locus in space. Utilizing this fact, two crude predictive systems were developed and put to use to demonstrate a possible practical application of ESP in solving a particular type of problem: the location of an unknown point in space. In 10 tests, the method of prediction gave results at a confidence level (P *=•* .018) which would prove of practical importance if it could be achieved consistently and could be applied to analogous problems in everyday life.  But as mentioned earlier, before we enjoy any such practical use of ESP, we must learn to control psi to better advantage. Per- | |  |

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haps we are closer than we think to controlling ESP, but only more hard work and the future will tell us that. Even a low grade of control would make the practical use of ESP a reality and open up almost incomprehensible possibilities.

APPENDIX I

From the index calls of each participant a measure of performance, the *r* or correlation coefficient, was computed (by doing a standard product moment correlation on the row and column distances between a call and its target). Knowing where in the five-by-five matrix the subject made his call aimed at the test target, I could select the loci most likely to be the test target by picking those squares which were related to the call in such a way as to give an *r* similar in sign to the index *r* based on the calls for the index targets. For example, if a subject's index calls gave a positive *r* and his call for the test target was in the corner of the five-by-five matrix *(C* in Fig. 1), then those squares marked "x" would represent most likely loci of the test target since these are the squares which are approximately equidistant in row and column distance from the call, *C,* and hence would give a positive *r.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  |  | |  | |  |  |  |  | |  |  | |  | |  |  | |  | |  |  | |  | |  |  |  |  | |  |
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