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# A Review of Published Research on the Relationship of Some Personality Variables to ESP Scoring Level

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Nash and Richards (26) in 1947 first investigated the relationship between a measure of intelligence and scores obtained in a series of PK tests. The I.Q. scores of their 48 college subjects, obtained from the Higher Examination of the Otis Self-Administering Tests of Mental Ability, showed a very small correlation (−.12) with PK scores.

*Summary on Intelligence and ESP*

The nature of the relationship between intelligence and ESP scoring level is still undefined. Valid objections, which preclude any clear-cut conclusions being drawn, can be levelled at most of the studies that have been made.

In the first place, they have often involved too few subjects, a fact which makes generalization difficult, despite some high correlations. Again, the same intelligence test was never used by two investigators, and since different tests may be sampling different aspects of intellectual ability, the results are not strictly comparable. In addition, not all the intelligence scales or estimates used are of equal validity, and in two cases, the investigation of the relationship between intelligence and ESP scoring level was a side-issue to the main experiment.

One tentative conclusion, however, may be drawn. There seems to be one factor conducive to a correlation between ESP scoring level and intelligence, namely, when the "best" estimate of scores is used as the ESP criterion.

By the use of the "best" estimate of scores rather than averages for the ESP criterion, Humphrey found that the correlation between intelligence ratings and ESP scoring increased. An estimate based on the best results achieved should eliminate those fluctuations due to factors other than intelligence, such as boredom and fatigue, which are known to affect scoring level, and give a purer estimate of ESP to be correlated with intelligence. Obviously the overall average run scores need not be an accurate reflection of the subject's real ESP ability.

Humphrey's findings particularly suggest either that the more intelligent subjects have better ESP, or that the obtained correlations between intelligence and ESP scoring are merely indicative of the subjects' adaptability to the test situation. No more definite judgment can be made at this stage.

INTEREST

C. E. Stuart was on
personality factors an
experiment involving
their effect on ESP sc
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score he has just prev
In 1946 Stuart (52
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which varied from "li
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college students, was
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*Summary of ESP and Interest Ratings*

The successful discrimination between high and low scoring ESP subjects on the basis of ratings on both the full Interest Inventory and on the restricted 14-item scale, which was reported by Stuart and Humphrey in earlier investigations, did not hold up as well in the later series. The results of these later series, however, are not published in their entirety, but are merely briefly mentioned by Humphrey in a review (19). Whether this decreased efficiency reported was in fact due to the lack of a real relationship between interest ratings and ESP scoring level, or whether it was due mainly to widely differing psychological conditions, such as number of runs per subject, or type of ESP test, which obtained during the later series, cannot be determined from the information available.

Inspection of the items of the full scale indicate that they cover fairly well the full range of student activity and interest. Stuart equated "affectability" with range of interest; this fact, added to the pervasiveness of the scale, seems to indicate that mid-range subjects may be those who are moderate in their interests and who maintain a reasonably temperate attitude towards their environment.

Inspection of the 14 items of the restricted scale, however, suggests that they measure what could be loosely described as "social adjustment"; perhaps it would be more correct to say that the scale is heavily weighted in favor of the more social or extravertive activities. The two scales appear to be measuring somewhat different factors, and it would seem essential to analyse the scales against established criteria in order to get at what each scale basically is measuring. Without information so secured, we can merely conclude that although both scales, to a different degree, separate high and low ESP scorers, the personality traits concerned in this differentiation remain in doubt.



INTROVERSION-EXTRAV

Humphrey first reported an ESP
Personality Inventory in 1945 (13).
the Earlham College Series I (GES
and the Humphrey-Pratt Precognit
jects; Bernreuter ratings on 6 perso
sufficiency, introversion, dominanc
gariousness—were correlated with
cognition series, the CR of the diffe
quarters of the record page was tak
the correlations between Bernreuter
cant; subjects who were stable, extra
however, tended to score positively
opposite characteristics tended to s
Humphrey (16) later utilized th
determine a cut-off point on the s
high and low scoring ESP subjects.
jects were judged to be extraverted o
they scored above or below the 50t
a highly significant positive deviati
troverts scored at chance. The CR
ESP scores for the two groups was

Tab

ESP Scoring Levels of Extra

| | Subjects Scoring above Chance | a |
|---|---|---|
| Extraverts | 14 | |
| Introverts | 5 | |
| Totals | 19 | |

On the basis of these results it was p
75th percentile on the Bernreu
ter on ESP card tests than those w

[ 15

The two series on which the prediction was tested were the Pratt-Humphrey Precognition and the unpublished Lawrence Clairvoyance Series. In the Pratt-Humphrey series, the ten extraverts had a deviation of +56, and the nine introverts a deviation of −34. The CR of the difference was significant (P = .02). In the Lawrence series, the 9 extraverts made a deviation of +48, the 12 introverts a deviation of −18. The CR of the difference was non-significant (P = .08). The total of 19 extraverts from the two series made a deviation of +104, and the 21 introverts a deviation of −52. The CR of this difference was significant (P = .005).

As shown in Table 5, the consistency of this separation was significant (P = .005) with 74 per cent of the extraverts scoring above chance and 76 per cent of the introverts scoring at chance or below.

*Attempts at Repetition*

Caspar (5) administered the Bernreuter Inventory to 20 subjects and obtained 2 GESP and 2 BT runs from each. He classified his subjects as extraverts or introverts on the basis of whether they scored above or below the 50th percentile on the scale. The extraverts had a deviation of +26, and the introverts a deviation of −18. The CR of the difference was suggestive (P = .03). Eight of the fourteen extraverts scored above chance, but none of the six introverts did. When evaluated by the exact method, the results are significant (P = .02).

Although only two studies have been reported with the Bernreuter, it appears to be a very promising research tool. In both studies, high and low scoring ESP subjects were separated with a high degree of consistency.

In the Nicol and Humphrey study (27) correlations were obtained between ESP scores (Known and Unknown runs) and two measures of introversion-extraversion. Factor T of Guilford's STDCR Inventory is called Thinking Introversion-Extraversion. The thinking introvert is given to reflective thinking and analyzing himself and others, while the opposite holds true for the thinking extravert. The correlations between Factor T and the known ESP scores was +.10, with the Unknown scores +.37,* and with total ESP scores +.33.

Factor S of this same test is called Social Extraversion; it correlated +.29 with Known ESP scores, +.21 with Unknown scores, and +.34 with total ESP scores. None of these correlations was significant, but a significant correlation (+.54**) was found between Social Extraversion and Self-Confidence (Factor I ) and a suggestive correlation (+.37*) was found between Thinking Extraversion and Self-Confidence. The latter correlations have value in this study. Self-confidence was found to be the factor most highly correlated with total ESP score (r + .55**). A person with a high score on Factor S is characterized as being social, as one who tends to seek social contacts and enjoys the company of others, while low scores indicate shyness and seclusiveness.

*Summary of Introversion-Extraversion and ESP Scoring Levels*

In all the studies reviewed in this section, it was found that extraversion was associated with higher ESP scores than introversion. This factor, or more precisely, the scales on which this factor is measured, separated out high and low scorers with a high degree of consistency. Unfortunately, however, it is not clear which aspects of behavior are included under the term extraversion, and for evaluative purposes it would seem essential to have more specific information on the factors underlying this broad

comprehensive category. F
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the factor, and it is uncerta
factors as, for example, so
ford questionnaire.

An alternative has been
ford-Martin or Cattell, wh
of highly correlated traits
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l Extraversion; it correlated Unknown scores, and +.34 lations was significant, but a between Social Extraversion ggestive correlation (+.37*) n and Self-Confidence. The y. Self-confidence was found total ESP score (r + .55**). characterized as being social, enjoys the company of others, siveness.

*Scoring Levels*

, it was found that extraver-han introversion. This factor, factor is measured, separated of consistency. Unfortunately, avior are included under the oses it would seem essential actors underlying this broad

comprehensive category. Part of the difficulty lies in the fact that single dimension scales, such as Bernreuter, may not give a pure measure of the factor, and it is uncertain to what extent it can be identified with such factors as, for example, social and thinking extraversion on the Guilford questionnaire.

An alternative has been to use a multiple trait scale, such as the Guilford-Martin or Cattell, where all the overlapping material of a number of highly correlated traits, which together should give a progressively better estimate of extraversion, is utilized, and by the use of regression analysis, to correct for the degree of overlap between the various traits. This method has been used with some success by Nicol and Humphrey, and the direction is a promising one. Some clarification of the components of extraversion is necessary, however, before further work along these lines would have much value.

## EXPANSION-COMPRESSION RATINGS AND ESP SCORING

In 1942, while at Stanford University, Stuart (51) developed a technique for judging similarities between four concealed target pictures and the drawings made by a subject attempting to reproduce the pictures. This technique, called the preferential matching technique (PMT), was used by Stuart to analyse the large collection of drawings he obtained at Stanford; the latter provided the data to which the expansion-compression ratings were applied.

Paula Elkisch (8) has devised a projective test which utilizes the form qualities of children's drawings. Certain features of the drawings are considered to indicate neurotic trends, and these features are measured in terms of four criteria: rhythm-rule, complexity-simplexity, integration-disintegration, and expansion-compression (E-C). The E-C criterion was the only one which subsequently proved successful in discriminating high and low scoring ESP subjects.

Elkisch defines expansion and compression as follows: "Expansion stimulates the imagination dynamically. It conveys an atmosphere of freedom, courage, adventure, and may be a symptom of vitality and of healthily developed extraversion. Expansion stands for a direction toward the surrounding world; for the potential ability of making contact...Compression conveys a feeling of discomfort, of being shut in, of pressure and compulsion. Compression may be, if connected with other traits, a symptom of a neurotically developed introversion, even of a compulsion-neurosis. Compression stands for isolation."

Certain aspects of expansion-compression can be fairly objectively described. For example, in making drawings, the compressives use only a small amount of the available space, their drawings are cramped and badly proportioned, lines are light and feathery, they use too many conventional forms—houses, boats, etc. By means of these characteristics it is possible to make an overall assessment of expansion-compression.

*Drawing Tests*

In the first reported E-C research, Humphrey (20) in 1946 used the data from four series of clairvoyance drawings obtained by Stuart. Of the 96 subjects involved, 41 were rated expansive and 55 compressive. The drawings from each group were scored by the preferential matching technique. With mean chance expectation at 40.0, the mean ESP score for the expansive group turned out to be 41.88, for the compressive group only 37.45. The difference in average scoring level between the two groups has a significant value ($P = .003$).

Although there was no significant overall deviation in his data, Stuart had found significant backward displacement ($P = .003$) which had been the main ESP effect. Displacement data were not available for one series, but a comparison was made between backward displacement scores of the expansives and compressives on the remaining series.

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In a large scale experim
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ratings were compared against PK scores, it was found that both groups scored slightly above chance.

*Summary of E-C ratings and ESP scoring*

This review indicates that the E-C ratings were not always successful in separating high and low scoring ESP subjects. The best evaluation of the overall efficiency of E-C ratings is Humphrey's 1951 review article (19). In this she states that in 10 of the 12 clairvoyance drawings series evaluated up to that time, the expansive subjects, as a group, obtained a higher average ESP score than did the compressive subjects. If the probabilities associated with the difference in each series are combined by Fisher's method, the E-C difference, considered in its entirety, was significant (P = .005), although the overall ESP results of the series were insignificant.

Humphrey reported that 54% of the 140 expansive subjects scored above chance, while only 42% of the 345 compressive subjects scored above chance. If these percentage figures are evaluated for consistency of group scoring, a significant chi square of 6.03 (1 d. f.) is found (P = .01).

In analyzing the GESP drawings, it was discovered that the compressive subjects had a higher average ESP score than did the expansives in eight of the nine series evaluated. Humphrey states that the difference between the two types of subjects for all series pooled is statistically significant, but the method of evaluation is not specified.

There were 29 experiments completed in which clairvoyance card tests and drawings were given each subject. In 17 of these, the expansives made a positive deviation on card tests while the compressives had a negative deviation; in nine experiments this direction was reversed, and in three no difference between the two groups was found. There was a deviation of +62 for the 955 runs of the expansive subjects and a deviation of −51 for the 1949 runs of the compressive subjects; the difference between them was insignificant.

The difference in average run score for the 26 Duke series was of borderline significane (P = approx. .02), while the three non-Duke series showed a non-significant reversal of effect. Another interesting point reported by Humphrey was that the four series in which subjects were tested individually gave a much larger difference than that found in the group-test series.

In these series where the E-C rating was applied to clairvoyance run scores, the psychological conditions varied widely from series to series. The E-C rating was based on one drawing in some series, on two drawings in others; sometimes four drawings were used. The ratings were administered before the card runs in some of the series, in others after the runs.

On the basis of her experience, Humphrey suggests that the E-C rating is not dividing subjects according to whether they will score positively or negatively, but rather according to the type of hit distribution they will give. Although compressive subjects as a group gave negative ESP scores, closer analysis of the results revealed that this score was due to the bad beginning and that compressives are quite capable of making high positive ESP scores after they are "warmed up".

It was also observed that an individual's drawings may change from expansive to compressive within a single session, or between sessions, with the ESP scores tending to reflect these changes. The E-C ratings therefore appear to be indicative of the subject's temporary mood.

lucky disposition), freedom from nervous tension, emotional stability, calm trustfulness, and low irritability level.

*Summary on Adjustment Ratings from Questionnaires and ESP Scoring Levels*

With the exception of Rivers' study, the results of the research included in this section all point toward the conclusion that higher ESP scores are obtained by subjects possessing the personality characteristics generally included under the label of "good personal adjustment." Whether well-adjusted subjects score higher because of greater cooperation, quicker adaptation to the experimental situation, better ability to establish rapport with the experimenter, freedom from personal inhibitions, some combination of these factors, or other unsupected factors is a matter for further research.

COMBINATIONS OF I
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three personality measureme
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the various measurements sin
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This section will be devot
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Expansion-compression rat
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ESP Scoring Lev

| | Subjects Scori above Chan |
|---|---|
| Expansive Moderange High | 26 |
| Compressive Extreme Low | 36 |
| Totals | 62 |

-high group and the
pronounced, but becau
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phrey's study on introversion-extraversion (16), and raises the question of the optimal number of runs to be used in studies utilizing personality measurements.

In a later study, based upon data gathered in the 1952 study and a later 1953 series, Nicol and Humphrey (28) attempted to discover whether subjects could correctly identify successful ESP calls. Subjects were requested to place a check mark beside each call which they felt was a hit. This, of course, was done before the subject was informed of his success. The method used to evaluate whether an awareness of ESP had been demonstrated was to compare the proportion of checked hits against checked misses.

The authors reported that the 34 subjects represented in the pooled Unknown runs were successful in identifying correct calls to a very significant degree (P = .0003). This effect did not hold up for the 22 subjects represented in the Known runs. Since only the Unknown runs gave significant results, these alone were considered when the attempt was made to discover if "conviction of success" was related to personality factors.

Only those subjects who gave an average of five to ten checks per run were included in any of the statistical evaluations. The checking success of the confident and unconfident subjects were compared, and it was found that the 17 unconfident subjects had a significant (P = .0006) excess of checked hits over misses; the checking success of the 12 emotionally unstable subjects was also highly significant (P = .002).

On the surface, these findings appear to have considerable theoretical importance. If, on the basis of personality tests, certain groups of subjects could be selected who "sometimes know when they're right," the progress of ESP research would be considerably advanced. However, there are certain criticisms which can fairly be leveled at the experimental procedure. For instance, it seems questionable to include only subjects having an average of 5-10 checks per run in the overall evaluation. Because of the well-known bias resulting from atypical scores in computing an average, it would appear that a more appropriate measure of central tendency, such as the mode, might have been employed to select subjects. An interesting comparison would have been to present the overall evaluation in terms of all *runs* having 5-10 checks, rather than making the subject the basic unit.

Another point deserving attention is that there appears to be some grounds for assuming that checking behavior *per se* is a function of self-confidence. Since the authors mention that quite persistent urging and coaxing was resorted to in an effort to obtain the desired 5-10 checks, it seems reasonable to assume that subjects who were unresponsive to such prodding could be considered as lacking in confidence. Yet it was these same "unconfident" subjects who were excluded from consideration when the role of confidence upon checking success was investigated.

*Summary on Combined Personality Measures and ESP*

In all the reports reviewed in this section, a higher degree of separation was obtained between subjects when combined rather than single personality measures were used. This suggests that the expression of ESP may be dependent upon a number of personality factors working in combination and that the most profitable method of selection for obtaining high and low scoring ESP subjects would be to use a battery of personality tests rather than single measures.

Some of these reports also give indications that through the use of combined personality measures and more refined methods of statistical analysis, it may be possible to show a relationship between personality characteristics and *amount* of ESP, rather than merely *sign of deviation*, as has been found in studies employing a single personality measure and a simple statistical evaluation.

ATTITUDES OF B

The most active worker i
ESP scoring level has been
(37) on an investigation in
of an individual interview,
possibility of ESP (sheep) c
The sheep classification wa
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After the subjects had b
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The goats were placed in a
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Three series of clairvoya
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was significant (P = .001)
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*Later Series*

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were tested under identica
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reader can find a full

or a very negative response to the questions. 'Do you believe in the existence of ESP?' and 'Do you believe you possess ESP abilities?' If we split our group into high-low categories, neither category including many subjects with very positive attitudes, one way or the other, we find that our results do not substantiate those obtained by Schmeidler and Bevan."

The results of these others workers' published data bearing on the sheep-goat classification are collated in Table 10.

Inspection of Table 10 reveals that in 5 out of 6 cases, the sheep had higher ESP scores than the goats; that the sheep, with one exception, had positive deviations, while all the goats, with 2 exceptions, had negative deviations. The non-sheep non-goat subjects who, for convenience and for comparative purposes have been lumped together as indecisives, had deviations which showed considerable variation.

The consistency of the group scoring levels, which was reported in one study only (55), is shown in Table 11.

Table 11

ESP Scoring Levels of Sheep and Goat Groups (Petrof)

| Group | Subjects Scoring above Chance | Subjects Scoring below Chance | Totals |
|---|---|---|---|
| Sheep | 11 | 7 | 18 |
| Goats | 1 | 9 | 10 |
| | 12 | 16 | 28 |

$$P = \frac{18!\ 10!\ 12!\ 16!}{28!\ 11!\ 7!\ 1!\ 9!} + \frac{18!\ 10!\ 12!\ 16!}{28!\ 12!\ 6!\ 0!\ 10!} = .011$$

Table 11 shows that the majority of sheep scored above chance and the majority of goats below chance. Since this pattern of scoring was predicted from Schmeidler's results, only a one-tailed probability is reported; this has a statistically significant value ($1P = .01$).

Having reviewed all the researches which can be considered as attempts to repeat Schmeidler's findings, the question which needs to be answered is "Can these studies be interpreted as confirmation of Schmeidler's findings?"

The crucial problem is obviously that of the criterion on which the sheep-goat differentiation is to be made. Schmeidler herself changed the criterion as her experiments progressed. In the series reported in 1943 (38), subjects were merely questioned as to their attitude to psychic phenomena in general, telepathy and clairvoyance in particular; the sheep were those who wondered if such phenomena would occur, or who believed in their reality, the goats those who rejected the possibility. In the tables presented in the report, however, the two categories are labelled "open-minded" and "expect to score at chance". There seems to be something of a contradiction here. The goats, who rejected the possibility of ESP, would certainly expect to score at chance; on the other hand, it is possible to imagine a sheep who accepts the reality of ESP phenomena and who nevertheless expects to score at chance in

the test situation. This could

In her later series, Schm
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In series A of his experim
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| =ts Scoring - Chance | | | | Totals |
|---|---|---|---|---|
| 7 | | | | 18 |
| 9 | | | | 10 |
| 6 | | | | 28 |
| - 18! | 10! | 12! | 16! | |
| 28! | 12! | 6! | 0! 10! | |

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the test situation. This could be a matter of confidence rather than belief.

In her later series, Schmeidler defined sheep as those who thought that paranormal success in the experiment was at least a possibility, goats as those who denied that there was any possibility of paranormal success under the conditions of the experiment. In her 1954 P-F study, Schmeidler used essentially the same criterion, although some of the items in the sentence completion questionnaire, used to rate the subject's attitude to the test situation as such, furnished additional information on his attitude of belief.

Bevan's criterion was somewhat different. He first of all asked his subjects whether they accepted ESP as an established fact. If they did not they were goats; if they did, after laboratory methods of testing ESP were demonstrated, they were asked, "Do you think that ESP can be measured by the techniques just explained to you?" If the answer was "no" or "don't know", the subject was disqualified. All subjects placed themselves on a continuum from belief to disbelief; Bevan thus obtained a category of indecisives. For the purpose of comparing Bevan's and Schmeidler's work, the indecisives should be combined with the sheep.

In series A of his experiment, Caspar asked his subjects whether they believed in ESP (sheep), whether they were undecided (indecisives), or whether they disbelieved (goats). In the second series, however, his subjects were asked three questions; "Do you know what the term ESP means?", "Do you believe that ESP is a theoretical possibility?", "Do you believe that you yourself have ESP ability?" As Caspar himself points out, question three of the questionnaire, concerning the subject's belief in his own ESP ability, resembles most Schmeidler's criterion. He reports that, in the limited part (Series B) of his experiment that can be compared with her results, the sheep (sheep and indecisives) averaged 4.89 hits per run, and the goats 4.97; a more detailed analysis is not presented.

Kahn's criterion was whether subjects thought that ESP is theoretically possible (1) in this particular experiment, (2) under other circumstances. He found that one group of subjects considered ESP "impossible here only", that is, in the test situation. These have been entered in Table 10 as indecisives, but, in accordance with Schmeidler's final criterion, they should be included in the goat category, together with the "impossible anywhere" group. Kahn further questioned his subjects on whether they expected to score above chance, at chance, or below chance. This overlaps with Schmeidler's initial criterion; Kahn, however, treats this as a separate analysis, bearing on the confidence of the subject in the experimental situation.

Eilbert considered both those subjects who were rated as "believes in ESP and thinks he will do well in the experiment" and "believes in ESP but doubts that he will do well in the experiment" as sheep; those who were doubtful about the whole thing, who rejected ESP completely or who gave contradictory responses, were goats. His criterion is similar to Schmeidler's; his results may be fairly compared with hers.

Woodruff and Dale asked their subjects three questions; "Do you believe in the existence of ESP?", "Do you believe you possess ESP abilities?", "I think my results in the above experiment are 'above chance', 'at chance', 'below chance'." Unfortunately, however, they made no overall sheep-goat assessment on all three items of their questionnaire. The subjects' scoring averages can merely be presented in terms of classification on each item singly.

In considering these various analyses, it appears that no strict answer can be given to the question of whether Schmeidler's results have been repeated. In the first place, her criterion was initially a shifting one, and the criteria others workers used differed from hers, in some cases considerably. In addition, there were differences existing in subjects (high school, volunteers and college), differences in targets (ESP symbols, IBM sheets), differences in number of runs per subject (4,5,6,8,12), differences in ESP situation (clairvoyance and GESP), and differences in the experimenters (seven different experimenters).

The question is an extremely important one, however, and some sort of comparison, however crude, seems necessary. This is attempted in Table 12 by fitting the various criteria to Schmeidler's as closely as possible. Thus, since Schmeidler combined indecisive and sheep, in Table 12 Bevan's, Petrof's and Eilbert's indecisives are combined with their sheep. In Kahn's experiment, the indecisives were those who considered that ESP was "impossible here only," i.e. in the test situation. These are included in the goat category in accordance with Schmeidler's final criterion. Only that section of Caspar's results which he himself claimed to be comparable with Schmeidler's results is included in Table 12. In the Woodruff and Dale experiment, no break-down is given for the whole series. Differentiation in terms of three items, each of which partly includes the sheep-goat criterion, is presented here.

Table 12
Sheep-Goat Data of Other Workers

| | | Sheep | | | | Goats | | | |
|---|---|---|---|---|---|---|---|---|---|
| Experimenter | Type ESP | Sub. | Runs | Dev. | Av. Score | Sub. | Runs | Dev. | Av. Score |
| Bevan | GESP Cl | 20 | 232 | +110 | 5.47 | 10 | 120 | +2 | 5.02 |
| Caspar | GESP Cl | | | | 4.89 | | | | 4.97 |
| Eilbert | Cl | 37 | 185 | +39 | 5.21 | 4 | 20 | −2 | 4.[illegible] |
| Kahn | Cl | 62 | 733 | +42 | 5.06 | 12 | 143 | +13 | 5.[illegible] |
| Petrof | Cl | 29 | 232 | +1 | 5.00 | 10 | 80 | −18 | 4.[illegible] |
| Dale and Woodruff | | | | | | | | | |
| (a) | Cl | | 460 | +20 | 5.04 | | 1500 | +35 | 5.[illegible] |
| (b) | Cl | | 1040 | −3 | 4.997 | | 920 | +58 | 5.[illegible] |
| (c) | Cl | | 1500 | −9 | 4.99 | | 460 | +64 | 5.[illegible] |

Inspection of the Table shows that in three cases the sheep (sheep and indecisives) scored higher than the goats, in three cases the goats higher than the sheep. Although the various experimenters in these cases obtained successful discrimination of high and low ESP scorers in terms of the sheep-goat criterion as each one defined it, these results not be regarded as repetitions of Schmeidler's results.



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of three items, each of which
presented here.

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| | | Goats | | |
|---|---|---|---|---|
| Av. Score | Sub. | Runs | Dev. | Av. Score |
| 5.47 | 10 | 120 | +2 | 5.02 |
| 4.89 | | | | 4.97 |
| 5.21 | 4 | 20 | −2 | 4.90 |
| 5.06 | 12 | 143 | +13 | 5.09 |
| 5.00 | 10 | 80 | −18 | 4.78 |
| 5.04 | | 1500 | +35 | 5.02 |
| 4.997 | | 920 | +58 | 5.06 |
| 4.99 | | 460 | +64 | 5.14 |

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## COMBINATIONS OF RORSCHACH ADJUSTMENT RATINGS WITH ATTITUDES OF BELIEF AND ESP SCORING LEVEL

The Rorschach is a widely used projective test consisting of 10 standard cards, administered in a set order; to these cards, the subject responds by reporting what he sees or what the blots represent to him. The underlying principle is that in order to structure anything from such ambiguous material, the subject must project something of himself into the material. This structuring is interpreted as reflecting the patterning of the subject's unconscious needs and drives, thereby giving some indications about many facts of his personality, such as whether he is rigid or flexible in his approach to situations, whether he is impulsive, creative, anxious, intellectually ambitious, socially withdrawn.

A quantitive index of the subject's overall adjustment can be made through use of a check list devised by Dr. Ruth Munroe (24). One or more check marks are given for each Rorschach category responded to in an atypical manner, and these check marks are added to obtain a single score representing the subject's degree of adjustment.

In the ESP series, an introduction was given by Schmeidler and the subjects then classified themselves as sheep or goats. The subjects next completed 3 clairvoyance runs (a unit of 75 trials), and then checked their results as the target order was read aloud to them. The testing proceeded until a total of 9 runs had been completed in this fashion. The group Rorschach test was administered by projecting slides of the ink blots on a large screen. This was given either before or after the ESP tests.

The Rorschach records were scored by Munro's check list method, and subjects having 10 checks or fewer were rated as well adjusted, while subjects with 11 or more checks were rated poorly adjusted. In order to eliminate any possibility of bias when scoring the Rorschach records, Schmeidler was kept ignorant of the subject's ESP score, which had been checked by an assistant and then later double checked.

In preliminary work with 85 subjects from two earlier series (39), Schmeidler noticed that when an adjustment rating was combined with the sheep-goat rating, it was possible to obtain greater separation of ESP scoring levels.

The poorly adjusted subjects scored at approximately the chance level, but the difference between the sheep and goats became more marked for the well adjusted subjects. She advanced the hypothesis that this pattern of well adjusted sheep scoring higher than poorly adjusted sheep and well adjusted goats scoring lower than poorly adjusted goats would be found in future series, and large scale testing of this hypothesis began in the Fall of 1945.

When Rorschach data from 250 subjects tested in 11 classroom experiments (41) were analyzed, the difference in average run score found

significant (P = .0002) but
hance, thus confirming the
-n in later experiments re-
ew article (32) presented a
experiments utilizing the
ctober 1945 and December
3 in Table 13.

ɔ Adjustment Ratings

| No. Runs | Av. Score |
|---|---|
| 3000 | 5.10 |
| 1879 | 5.17 |
| 1121 | 4.97 |
| 2205 | 4.95 |
| 856 | 5.10 |
| 1349 | 4.85 |

-en the average scores of
significant (P = .000003).
= means of the poorly ad-
1.4).

and Goat Groups

| jects Scoring below Chance | Totals |
|---|---|
| 85 | 209 |
| 91 | 150 |
| 176 | 359 |

)7 (1 d.f.)
)001

ted subjects arranged in
own indicates that when
) were positive scorers,
hance scorers. The chi-
nly a one-tailed test of
ns were predicted from

## COMBINATIONS OF RORSCHACH SEVEN SIGNS WITH ATTITUDES OF BELIEF AND ESP SCORING

In an attempt to explore further the relationships between Rorschach variables and ESP scoring, Schmeidler decided to analyze the 250 Rorschach protocols from her first work (41) for particular categories that seemed to appear more frequently in the records of high and low scoring subjects. She isolated 7 factors or signs whose presence in a subject's record seemed to act as deterrents to ESP scoring.

If these seven signs are analyzed in terms of their interpretative significance, three patterns of "response tendencies" seem to emerge. A cold, withdrawn, restricted attitude can be inferred from the presence of F+%, Mr., and no shock; extreme impulsiveness or lack of emotional control from the presence of CF+ and C+; and excessive, near-compulsive mental activity or "quantity ambition" from the presence of R+ and total movement+++. Thus, subjects who have even one of these seven signs present in their record could be considered to have a *specific* maladjustment which might prevent them from demonstrating ESP.

After having empirically determined these seven signs from this collection of 250 records, Schmeidler went on to gather new data from other subjects to see if the seven signs would continue to show the same relationship to ESP scoring. The two review articles (33, 34), which report further testing with the Rorschach, indicate that absence of seven signs continued to be associated with higher scoring, i.e., her data show that sheep in whose records these signs do not appear score higher than sheep in general, and goats from whose records the signs are absent score lower than goats in general. Table 15 shows the scoring levels of the original 250 subjects from whose records the data were derived; Table 16 shows the scoring level of 329 additional subjects whose records were subjected to a similar analysis.

Table 15

ESP Data of 250 Subjects from whom 7 Signs were Empirically Derived

| Classification | 7 Signs | No. Subjects | No. Runs | Average Score |
|---|---|---|---|---|
| Sheep | Present | 66 | 590 | 4.84 |
| | Absent | 51 | 459 | 5.44 |
| Goats | Present | 62 | 559 | 5.09 |
| | Absent | 71 | 638 | 4.73 |

# REACTIONS TO FRUSTRATION AND ESP SCORING

The Rosenzweig Picture-Frustration Study (P-F) is a projective technique used to obtain a measure of a person's reaction to frustration. It consists of a booklet of 24 cartoons, each depicting an unpleasant or frustrating circumstance, such as missing a train, in which one person makes a remark of frustrating significance, depriving or blaming the other. The subject responds on behalf of the frustrated person. The drawings are deliberately crude, having only indistinct facial features and a minimum of background provided.

The test can be scored for several different categories but so far only three have been used for research in parapsychology. These three are defined as follows:

Extrapunitiveness—refers to aggression overtly directed toward the environment in the form of blaming some outside force for the frustration or of placing someone else under an obligation to solve the difficulty.

Intropunitiveness—aggression is expressed overtly by the subject against himself in a martyrlike fashion with an acknowledgment of guilt or shame, or by assuming the responsibility to clear up the situation.

Impunitiveness—aggression is evaded or avoided in any overt form, and the situation is interpreted as being insignificant or no one's fault or as likely to solve itself if the subject simply waits or conforms.

The first indication that the P-F might be a useful test in parapsychology grew from a thesis study by L. Eilbert at CCNY. An article by Eilbert and Schmeidler (7) reported that when the P-F scores of Eilbert's subjects were divided into four quartiles, the differences between ESP scores obtained by subjects in the first and fourth quartiles were suggestive (P around .05). The correlation of −.32 between extrapunitiveness and ESP score was significant (P = .01) but the correlation of +.28 for intropunitiveness and +.22 for impunitiveness were only suggestive (P = .04 and .07 respectively).

Schmeidler (43) then attempted to see if similar results could be obtained from analysis of P-F scores which she had obtained during several years of testing. She had P-F scores for 446 subjects and obtained a correlation of −.09 between ESP scores and extrapunitiveness (P = .03) and a correlation of +.10 with impunitiveness (P = .02). When her results were combined with Eilbert's, the correlation of −.12 between ESP scores and extrapunitiveness was significant (P = .005), and the correlation of +.12 with impunitiveness was also significant (P = .003).

These combined data were also analyzed by comparing the difference in mean ESP score between the subjects scoring in the lowest 10% and highest 10% of the Rosenzweig categories. The mean score of the least extrapunitive (lowest decile) subjects was 5.20, while the mean score of the most extrapunitive (highest decile) subjects was 4.86. This difference in mean score was significant (P = .01 impunitive subjects was 4.94, of the h 5.27; this difference in mean scores was scoring directions were in all cases m than for the goats. In fact, most of the tioned were independently significant for the goats.

Despite the fact that significant co tween the P-F and ESP scores, the cor the relationships measured would seem might be expected since the P-F score the subjects would respond to a mildly life. This does not necessarily mea be expressed in an ESP situation. It v ideas as to how the subject interprete joyable experience, the aggressive te annoying situation would have little ESP situation.

To test this assumption, Schmeidler in a group setting with the P-F and annoying the subjects found the ESP si ance was based upon a combined scor naire, a variation of the incomplete se of a paragraph written on the subject' sentence method contributed most he

Ratings were made along a 7 point rating, the greater was the degree of jects. Since the P-F scores were de projection into a moderately frustrati hand that only the P-F scores of sub moderately frustrating would be co annoyance ratings of 5 or 6 were sele annoyed group.

Although the correlations betwee 266 subjects were in the expected insignificant. However, when the moderately frustrated subjects were statistically significant for extrapuni impunitiveness (r = +.21, P = .01 ently significant for the sheep, but

Schmeidler's interpretation of the habitual response to mild frustration v and hostile while making ESP respo mildly frustrating, and would theref subjects who characteristically rea punitive fashion would emphasize t ately frustrating experiment and co- fore, make higher ESP scores. The in correlation for the intropunitive sc virtue of being a goat, was probably toward the experiment, he neverth in a frustrating situation, and be would take upon himself the respo He would, therefore, tend to minimiz

ter, and through securing positive
r in such a situation. Such findings
subject's scoring level in an ESP
know is how the ESP situation is



There is one article by Schmeidler reporting on the use of the Allport-Vernon Study of Values (AVSV) in an ESP experiment (35). This test indicates in which of six different value areas (theoretical, religious, social, economic, political, or aesthetic) a subject seems to identify himself most. Scores are obtained in terms of percentile ranks and subjects scoring high in one or two areas must necessarily score low in the remaining ones.

Although it had been found that sheep made higher ESP scores than goats, it is apparent that the subjects' answers to the theoretical question of whether ESP exists or not did not separate them into clearly distinct groups with favorable or unfavorable attitudes toward the experiment. Some of the sheep might find the experiment boring or irritating and some of the goats might like competitive tasks and enjoy playing "guessing games". Schmeidler had earlier suggested (44) that the sheep-goat dichotomy would be most meaningful for subjects to whom theoretical problems are important (that is, subjects with high theoretical scores on the AVSV).

Table 19

ESP Data Arranged According to Percentile Rank on Theoretical Scale of AVSV

| | Sheep | | Goats | | | |
|---|---|---|---|---|---|---|
| Percentile | No. Runs | Ave. Score | No. Runs | Ave. Score | Diff. in Ave. Score | P |
| All Subjects | 504 | 5.30 | 455 | 4.93 | .37 | .002 |
| Below 90 | 384 | 5.18 | 367 | 4.95 | .23 | .06 |
| 90 or Above | 120 | 5.68 | '88 | 4.85 | .83 | .002 |
| 95 or Above | 40 | 5.95 | 24 | 4.38 | 1.57 | .001 |
| 100 | 24 | 6.54 | 8 | 4.50 | 2.04 | .006 |

The hypothesis stated before these data were gathered therefore was that the difference in scoring level between the sheep and goats would be greater for those subjects who had a strong theoretical orientation. The problem of whether ESP could be demonstrated in the test situation should then be one that takes on personal significance for these subjects, since it is closely related to their systems of values or expectancies. Such

subjects would presumably identify more closely with the purpose of the experiment, that is, to show the presence or absence of ESP.

A total of 63 subjects from four different psychology classes were tested in a classroom setting. Each subject was supposed to classify himself as a sheep or goat, make 8 ESP runs, and complete the AVSV. The theoretical scale of the AVSV was then scored and subjects receiving a percentile rank of 90 or above were considered to be theoretical subjects. Table 19 shows the results of the various breakdowns which were made to compare theoretical and non-theoretical subjects.

In Table 19 it is shown that the difference between the mean scores of the non-theoretical sheep and goats was not significant (P = .06), but when the theoretical sheep and goats are considered, the difference between their average scores is over three times as great as the difference of the non-theoretical subjects (P = .002). From the table, it appears that the differences in scoring level continue to become larger as the degree of theoretical orientation becomes more marked; the P values associated with these differences are significant or highly suggestive. The interpretation advanced is that subjects who place increasing emphasis on theoretical values are able to exhibit a corresponding increase or decrease in their ESP score.

Generally, the number of cases in each category is too small for such generalization. In addition, however, when the three categories (90 or above, 95 or above, and 100) in Table 19 are considered as discrete rather than continuous categories (ie., 90-94, 95-99, 100), as they should be in any valid comparison of scoring levels, the differences in scoring

Table 20

ESP Data Arranged According to Percentile Rank on Theoretical Scale of AVSV (Amended Figures)

| | Sheep | | Goats | | | |
|---|---|---|---|---|---|---|
| Percentile | No. Runs | Ave. Score | No. Runs | Ave. Score | Diff. in Ave. Score | P |
| All Subjects | 504 | 5.30 | 455 | 4.93 | .37 | .002 |
| Below 90 | 384 | 5.18 | 367 | 4.95 | .23 | .06 |
| 90 or Above | 120 | 5.68 | 88 | 4.85 | .83 | .002 |
| 90 to 94 | 80 | 5.55 | 64 | 5.03 | .52 | .06 |
| 95 to 99 | 16 | 5.07 | 16 | 4.32 | 76 | .14 |
| 100 | 24 | 6.54 | 8 | 4.50 | 2.04 | .006 |

level between the sheep and goats at each level of theoretical orientation cease to be significant except in the case of the 3 subjects on the 100th percentile. These amended figures are shown in Table 20. It is apparent that although there are significant differences in scoring level between theoretical and non-theoretical sheep and goats as groups, the impressive progression of theoretical level with ESP scores does not stand up under strict evaluation.

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ory is too small for such
three categories (90 or
e considered as discrete
-99, 100), as they should
e differences in scoring

Rank on Theoretical
gures)

| Score | Diff. in Ave. Score | P |
|---|---|---|
| 3 | .37 | .002 |
| 5 | .23 | .06 |
| 5 | .83 | .002 |
| 3 | .52 | .06 |
| 2 | 76 | .14 |
| 0 | 2.04 | .006 |

f theoretical orientation
3 subjects on the 100th
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ts as groups, the im-
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## CONCLUDING REMARKS

From this review of the pertinent data of most of the ESP-Personality studies, it seems that some progress has been made towards determining the personality characteristics of groups of high- and low-scoring ESP subjects. As a generalization, we might judge that subjects who are somewhat extraverted, secure, temperate, well-adjusted, who are favourably disposed towards ESP, and who have a high theoretical value system tend to score high, while subjects who possess opposite characteristics tend to score low.

It was stated at the beginning of this monograph that it seemed appropriate to review the ESP-Personality research in two sections. The two basic approaches of Humphrey and Schmeidler differ in two respects; on the one hand, in type of measuring instrument used, on the other in the consistency of the results achieved.

In general, Humphrey made her personality assessments by means of questionnaires, or from a more or less objective estimate of certain qualities exhibited in drawings. Her results were usually not repeatable either by herself or by other experimenters working along similar lines, although she did have some repeated success with the E-C rating derived from the ESP material itself, and partial success with the Bernreuter and the Stuart Interest Inventory.

It is generally recognized that the questionnaire method has severe limitations. Regardless of the stability of the factor itself, and it must be remembered that Humphrey was largely concerned with transitory, "surface" traits like expansion-compression, security-insecurity, the measuring instrument itself is subject to irrelevant influences which tend to give rise to spurious measurements. In self-rating scales, there is the well-known "halo" effect, and the amount of "halo" in such scales as Bernreuter and Guilford-Martin is considerable. The strong general factor of the attitude of the subject to the experimental situation may condition his responses to a considerable degree.

A second factor is the temporary mood of the subject. This has been shown to affect responses on the Bernreuter scale, and it probably exerts a similar influence on security-insecurity assessments. It would seem to apply particularly to the expansion-compression ratings, judging from the fact that some subjects rated by one judge were found to change from expansive to compressive in the one experimental session, and would, presumably, change from day to day. An additional source of unreliability lies in the fact that ratings by two judges on the same set of drawings displayed not a great deal of consistency. The second factor is probably the explanation of the non-repeatability of the E-C studies; with such scales as the Maslow and Bernreuter, however, the first, more general explanation appears more pertinent.

Schmeidler generally used attitude classifications and projective techniques. She obtained consistent results, and her experiments were generally repeatable. Insofar as the sheep-goat classification is concerned, however, the question remains of precisely what factors are involved in this differentiation. In the first place, is it possible for a subject to give an unequivocal answer to the question of his attitude towards parapsychology, which is a multi-dimensional subject? He may accept one aspect of psi (telepathy, for example), and reject another (clairvoyance, for example); in such a case, differentiation must obviously be made along these lines. Further, it is possible that in addition to the theoretical acceptance of ESP other factors such as confidence, interest in the experiment, and willingness to co-operate might be concerned in the sheep-goat differentiation. If these additional factors are involved, the subject's answer might merely reflect much deeper multiphasic motivational factors.

Concerning the personality measurements obtained from projective tests, it is generally agreed that the factors measured on Rorschach and the P-F Scale are basic fundamental aspects of personality structure. Because of the endurance of this structure, one would expect to get repeatability of differentiation in terms of Rorschach and P-F criteria providing the tests themselves are reliable. When we describe separation in terms of Rorschach or P-F variables, we are describing a somewhat gross estimate in each case, and it seems reasonable enough to assume that the Rorschach estimate of adjustment and the P-F estimates of extrapunitiveness and intropunitiveness, in their gross evaluation, are reliable enough measures. Since there has been repeated success in discriminating high and low scorers on the basis of these criteria, we imply that there is a relationship between these deeper factors and E SP.

It must be remembered that in all ESP experiments, the role of the experimenter is a vital one. A factor which might contribute to consistency or lack of it in any series of ESP experiments is the delicate experimenter-subject relationship. The effect of such a factor is very difficult to estimate, as it involves the personalities of the experimenter and the subject, and their interaction. In considering this problem of consistency of results, however, cognizance should be taken of the possible effects of such a factor.

It must be emphasized that at this stage of ESP-personality research, more successful predictions of ESP scoring levels have been made on a group than on an individual basis. Certainly the greatest amount of research effort has been directed towards differentiation of scoring levels on the basis of single personality measurements. This is a separation in terms of direction rather than amount of deviation, and as such, is generally not discriminating enough for the purposes of individual prediction. For example, though Schmeidler's poorly adjusted group, as a group, scored around chance, the variation in range of individual scores, from very high to very low, was statistically significant.

Better prediction of direction of group deviation has resulted from the use of combinations of personality measurements, rather than single dimensions. Evidence for the efficiency of such combinations is offered by Humphrey with combinations of E-C and Interest ratings, and E-C and Security-Insecurity ratings, by Schmeidler with combinations of sheep-goat and adjustment criteria, sheep-goat and "absence of seven signs" criteria and sheep-goat and value ratings and by Nicol and Humphrey with a combination of confidence and emotional stability factors. These combinations permitted

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Schmeidler's AVSV study is

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These combinations permitted greater differentiation than any of the measures used in isolation.

Schmeidler's AVSV study is a further step in this direction. Once the sheep-goat attitudinal classification was known, there appeared a linear relationship between ESP scoring level and degree of theoretical orientation. Although no strictly individual predictions were made, predictions were made for groups which in some cases were very small (numbering 1-5). One must point out that the progression of ESP scores with theoretical orientation is not as impressive as it appears; these criticisms notwithstanding, this study is an important contribution in this area.

Of major importance is the study by Humphrey and Nicol reporting some success in predicting individual ESP scores from a knowledge of personality ratings, using multiple regression analysis. Although the level of success reported is not high, the method is a valuable one, and the approach most promising.

In the final evaluation, it appears clear that if something is known of unique factors in a subject's personality make-up, if, for example, he possesses marked tendencies towards social participation, or is easily stimulated to competition, it is possible to utilize this information in predicting the direction, and, to a much lesser degree, the amount of ESP deviation. The question still remains of whether the personality characteristics possessed by the rare individual high-scoring subject are similar in kind to those possessed by groups of subjects who score slightly above chance, and whether the relative difference in scoring level, therefore, might reasonably be attributed to differences in amount of the characteristics possessed or to motivational factors. This appears to be one of the major problems in this area of ESP personality research. The answer may well come from two sources—on the one hand, from intensive study of the personality makeup of the few high-scoring subjects, and direct comparison with what is known of the characteristics displayed by groups of subjects who score positively, as a group, and, on the other, from development of better experimental and statistical techniques for selecting individuals and predicting their probable scoring levels, solely on the basis of measurements on a number of personality tests and assessments.