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The effects of relaxation, emotionality of target stimuli, attitude, and mood on ESP performance.

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THE EFFECTS OF RELAXATION, EMOTIONALITY
OF TARGET STIMULI, ATTITUDE, AND MOOD
ON ESP PERFORMANCE

by

Shawn Stewart Steggles

B.A. Carleton University, 1977

A Thesis
Submitted to the Faculty of Graduate Studies
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-ABSTRACT.

Previous research has suggested that "Relaxation State", "Emotionality of Target Stimuli", "Attitudes" and "Mood" are important factors in extrasensory perception performance. The purpose of the present investigation was to utilize the quantitative experimental approach to determine the relationship between performance on a "forced-choice" clairvoyance task and a number of selected independent variables representing the above factors.

Sixty university students participated in the present study. Subjects were randomly assigned to one of six testing conditions of a 2X3 (relaxation instructions/arousal instructions x emotional/non-emotional/neutral target stimuli) factorial experiment with the restriction of an equal number of subjects (n = 10) per testing condition. During the course of the study all subjects were assessed, via self-report measures, on three sets of variables: (a) Relaxation-Arousal variables (Relaxation-Arousal Questionnaires, item from the State Anxiety Inventories, and items from the Mood Adjective Check List), (b) Attitude variables (Sheep-Goat Questionnaire, and "Response bias"), and (c) Mood variables (Positive-Negative Affect Questionnaire, and Mood Adjective Check List).

Past "forced-choice" experiments typically required that a subject discriminate the ESP targets one from another.

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In this study we were concerned not only with discrimination or recognition, but also with detection. In other words, can a subject detect whether a target has or has not been presented regardless of whether, they can recognize which specific target it is? Signal Detection theory provides us with a method to assess ESP performance in just this manner.

Utilizing Signal Detection Analysis, measures of sensitivity (P(A)) and response bias (β) were calculated on the basis of each subjects performance on the "forced-choice" clairvoyance task. The more typical ESP score measurement was also determined.

Analysis of the 2X3 factorial experiment revealed that the six testing condition groups did not differ from one another on P(A) and ESP score (ESP performance) measurements. Furthermore, no significant correlations were revealed between the Relaxation-Arousal variables, assessed via self-report measures, and ESP performance measurements.

A significant relationship was revealed between Palmer's criterion #4 of the sheep-goat scale and ESP performance. The sheep and goat groups created as a result of division on criterion #4 produced significantly different ESP performance scores. The goat group scored significantly below expected value of ESP performance (psi-missing) and although the sheep group did not deviate significantly from

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mean ESP performance, their scores were in the predicted direction. These results are a positive and significant indication of ESP.

No significant correlations emerged between ESP performance and the Mood variables. However, a single factor ANOVA, revealed that the Hi Expectation of Success group produced significantly different ESP scores than the Low Expectation of Success group. The Low Expectation of Success group produced ESP results significantly below chance level.

The second measure derived from Signal Detection Analysis, response bias (β), did not correlate with either the Relaxation-Arousal variables or the Attitude variables. However, β did correlate significantly, and in a negative manner, with the "transient mood state", "concentration". The implications of this finding were discussed.

Other than these findings, the present study failed to reveal any significant relationships between the independent variables and ESP performance. Suggestions for future research were discussed, and the applicability of Signal Detection Analysis to ESP research was also discussed.

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CHAPTER I

INTRODUCTION

Extrasensory perception (ESP) is defined in the glossary found at the end of each number of the _Journal of Parapsychology_ (J.P.) as: "Response to an external event (perception) not present to any known sense." Subclasses of ESP are _telepathy_, in which the information originates from the "mind" of another person, _clairvoyance_, in which the information originates from physical objects and _precognition_, in which the information is about and originates from future events. Also to note are the terms _retrocognition_, ESP in which information is about and originates from past events, and _psychokinesis_ (PK), the direct influence of mental events on material substances external to the agent's body.

Evidence for ESP may be divided into the anecdotal and the experimental. We have on the one hand, a large number of reports of the spontaneous occurrence of ESP in the form of premonitions, hunches, telepathic dreams and overpowering emotional experiences and on the other hand, increasingly numerous attempts to demonstrate comparable, though usually less exciting phenomena by properly designed laboratory experiments (recent reviews are by Rao, 1966 ;

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Schmeidler, 1976; Thouless, 1972),

The most convincing evidence, for the existence of ESP, has come from the quantitative experimental studies of telepathy and clairvoyance (Hansel, 1966). The present investigation utilized this quantitative experimental approach to establish relationships between a number of selected independent variables and performance on a clairvoyance task.

Statistics

The early experimental investigations in ESP came under a considerable amount of criticism, particularly for their statistical procedures. Eventually though, the statistical procedures used in the early studies and subsequently in contemporary research were found to be sound. This conclusion was reached after a very contro-versial period toward the end of the 1930's (reviewed by Kennedy, 1939, p.96). However, the use of extra-chance results as evidence for the existence of ESP still concerns many critics. They suggest that the interpretation of extra-chance results leads to many erroneous conclusions in parapsychological research. Kennedy (1939) summarized this state of affairs:

> It is generally recognized, however, that the
> mathematics of chance expectancy does not

indicate a functional relationship between variables. 'Causes' for observed deviations from chance expectancy must be sought in the experimental conditions and controls, not in the mathematics of chance (p.96).

Few contemporary critics of parapsychology would argue that extra-chance results are never obtained in ESP experiments. It is the blithe attribution of these results to the "ESP construct" which bothers them. They maintain that other explanations arising from errors in methodology must be accounted for. Errors resulting from lack of independent record scoring and keeping, sensory cues, lack of randomization in target sequences, and logical inferences when feedback is given, have all been proferred as alternative explanations.

It has also been suggested that even if all these criticisms were taken into account in a well-controlled study and extra-chance results were obtained, we would not be left with ESP as an explanation; we would be left with no explanation. Boring (Hansel, 1966) referred to this as "the universal negative of ESP" (p.xv), arguing that ESP lacks clear specification. Defining ESP as parapsychologists do in terms of deviations from mean chance expectancy (MCE), obscures the phenomenon, since the apriori establishment of MCE in any experiment is based upon unprovable assumptions in probability theory. For example, to set the MCE of a head occurring in a

coin-tossing experiment equal to .5 of the total number of trials, assumes that one could toss the coin an infinite number of times to empirically verify this. "Since we cannot do anything of the sort, we must accept the apriori probability value and thus the demonstration of ESP, with some reservation" (Hansel, 1966, p.xv).

Methodological and interpretational problems exist, they cannot be ignored. At the present time there does not appear to be any foolproof way of avoiding these problems, but the experimenter nonetheless should be aware of these problems and their possible influence.

"Relaxation" and "Emotionality of Target Stimuli"

As intimated earlier laboratory demonstrations of ESP seldom involve the vividness, dramatic detail, or feelings of conviction which frequently accompany reports of spontaneous psi experiences. Most early studies in the psi field merely tried to find whether or not ESP occurred and therefore tested only the null hypothesis that results would be within the range of chance expectation. Later studies attempted to isolate the pertinent variables which affect the success or failure of the psi phenomena. These studies suggested that such factors as belief, mood, relaxation, etc., seemed to significantly affect ESP results.

Some parapsychologists turned their attention away from just looking at correlating variables, to conditions which "optimized" the occurrence of psi. This direction in turn led other parapsychologists to the "psi-conducive-states" paradigm based on the assumption that certain "altered states of awareness" are more "optimizing" or conducive to the detection of ESP than in the normal waking state.

To date, numerous ESP experiments employing the elicitation of purported altered states have shown semiconsistent results: these investigations include, hypnosis, dreaming, sensory deprivation, and physical and mental relaxation. Of these four states "relaxation" has shown the most promising results. In fact, several independent lines of evidence suggest that relaxation may facilitate the occurrence of psi phenomena. The converging lines of evidence include the following:

1. Relaxation seems to be a reliable characteristic of the percipient in a majority of cases of spontaneous psi phenomena (Stevenson, 1970).

2. Reference to the importance of relaxation (both physical and mental) is found in the writing of, and about nearly all gifted psychics (Thouless, 1972).

3. Rhea White, in her classic study (White, 1964) of the introspective reports of gifted subjects (Ss)

which have appeared in the experimental literature, has pointed to the critical role attributed by these Ss to deep physical and mental relaxation, reduction of strain, increase in passivity, and stillness of mind.

4. Autonomic nervous system state measures which have been found to accompany psi experiences (Otani, 1955), closely resemble. physiological syndromes traditionally associated with relaxation.

5. EEG indications sometimes associated with enhanced ESP performance suggest an electrical correlate of the subjective state of relaxed awareness and of the physiological state of muscular relaxation (Honorton et al, 1971; Stanford & Stanford, 1969).

6. The dream state so successfully exploited as a psi-favourable condition by the Maimonides group in recent years (Ullman & Krippner, 1970) is characterized by extremely low muscular tension.

7. Slowed alpha rhythms characterized two out-of-the body experiences in the laboratory (Tart, 1968).

8. Alpha predominance characterizes certain meditative states (Anand et al, 1969; Wallace, 1970) which have traditionally been associated with heightened psychic sensitivity.

9. Hypnotic procedures which have been reported to facilitate psi performance (Honorton & Krippner, 1969), frequently induce heightened relaxation.

10. Schmeidler (et al, 1958) obtained good psi results in her studies of relaxed and passive maternity and concussion patients.

11. Studies carried out by the Braud's (1973, 1974) and Stanford and Mayer (1974) indicated muscular and mental relaxation to be psi-favourable. These studies are particularly relevant to the current investigation and will be discussed in more detail.

The studies conducted by Braud and Braud (1973, 1974) utilized relaxation procedures in order to induce "psi-conducive states". In the first exploratory experiments (Braud & Braud, 1973) Ss listened to and followed tape-recorded instructions for progressive relaxation (Jacobson, 1938), which involved alternately tensing and relaxing each muscle group of the body, beginning with the toes and ending with the head and facial muscles. When the Ss bodies were relaxed they attempted to gain psi impressions of coloured art reproductions which had been randomly selected from a large pool of such pictures. An agent, who was sensorily isolated from the Ss, viewed the target and attempted to send impressions to the relaxed Ss for a five minute period. The Ss recorded their impressions of the hidden target picture in writings and drawings.

Statistical analysis of these protocol-target correspondences revealed significant evidence for the

performance of psi in these Ss. Their impressions corresponded very closely with the target information. Seven of these exploratory experiments were conducted, and their overall results could be attributed to chance less than seven times in one million. Unfortunately, control groups were not employed in this series and the effect of relaxation could not be determined.

In the second phase of their research the Braud's (1974) began to explore the role of relaxation in a more analytical manner. The Ss were again tested while in a relaxed state. Control considerations were improved in this phase. The Ss were assessed, using a 10-point scale (1 = extremely relaxed; 10 = extremely tense), on the extent to which they subjectively experienced relaxation. When the Ss were later dichotomized at the mean in terms of their psi performance it was found that "good" psi performers were significantly more relaxed than were "poor" psi performers. Thus, Ss listening to the same relaxation-inducing taped instructions relaxed to different degrees, and these degrees of relaxation were in turn related to degree of psi performance.

In the third phase of this research, the Braud's (1974) measured the degree of relaxation using electro-myographic (EMG) techniques. Half of their Ss listened to relaxation instructions; half listened to instructions

designed to induce muscular tension. EMG activity from the frontalis (forehead) muscle group was recorded continuously throughout the experiment. The authors found that Relaxation Ss evidenced significant ESP during the tests, while their Tension Ss scored at the level expected by chance. Across all Ss there was a significant, positive correlation between EMG-defined relaxation and psi.

Once again, as in the second phase, an independent rating of protocols was not secured, leaving open the possibility that the agent unintentionally misrecorded the number of Ss obtaining hits. Moreover, as well as scoring the data, which would serve to augment the potential source of error mentioned above. A simple yet necessary control would have been to ensure that someone other than the agent and scorer determined group membership, to be disclosed only after completion of the entire experiment.

Stanford and Mayer (1974) systematically replicated and extended the Braud's (1973) original study with an improved feature. Instead of Ss taking their protocol directly to the agent they remained in the experimental room with the experimenter. Thus, in this case, the rater was not aware of group membership at the time of scoring. In Stanford and Mayer's experiment, volunteer women students underwent a procedure (identical to Braud's) designed to induce mental and physical relaxation and to increase their

expectancy of success on the ESP task. They used a clair-
voyance testing procedure in which Ss attempted to gain
impressions of target pictures concealed in envelops.
As in the case of the Braud's (1973) study, significant
psi-hitting occurred.

Since two laboratories have produced similar
findings using adequate control procedures, perhaps
relaxation will eventually emerge as a predictor of ESP
performance. It seems curious that little work has
appeared on this topic of relaxation in the two para-
psychology journals since 1974. This is an unfortunate
state of affairs, unfortunate because of the numerous
sources of evidence which consistently suggest the
important role of "relaxation" in psi functioning.

Apparently "relaxation", is not the only variable
favourable to psi performance. The literature indicates
that a number of other factors are conducive to the
occurrence of psi phenomena (see reviews by Rao, 1966;
Schmeidler, 1976; Thouless, 1972). For example, independent
lines of research from a number of sources indicate that
"emotionality of target stimuli" is an important variable
in psi performance. This evidence includes the following:

1. Anecdotal reports of "spontaneous" ESP experience
often involves highly emotional events such as deaths or
disasters (Rao, 1966).

2. The writings of and about nearly all gifted psychics makes reference to the importance of highly emotional events (Thouless, 1972).

3. In an experimental study conducted by Pratt and Woodruff (1939), Ss scored significantly higher with symbols with which they had been previously tested.

4. Fisk and West (1955), found significantly higher scores with erotic pictures than with ESP symbols as targets.

5. Rao (1963a), found that Ss scored significantly higher with targets in an unknown foreign language than in English, suggesting that the novelty imposed by the foreign language exerted a stimulating effect.

6. Evidence from controlled laboratory experiments over long distances indicates that the "emotionality of target" facilitates performance (Osis, 1965; Pratt, 1964; Rhine, 1953; Moss et al, 1970).

7. Johnson & Norbeck (1972), reported significantly higher ESP scores with pleasant than with unpleasant targets.

8. Moss, Chang & Levitt (1970), and Moss & Gengerelli (1967, 1968) assessed ESP ability in telepathy experiments where transmitters were exposed to slide sets depicting emotional events. Significant results were obtained. These last three studies are relevant to the current investigation and deserve more discussion.

In these three studies conducted by Moss and
colleagues they were looking at the importance of
"emotionality of target stimuli" in psi performance. In
these studies, the attempt was made to simulate, in the
laboratory, the strong affect so frequently reported to
accompany spontaneous telepathic events. The paradigm
required that the members of a team, the transmitter (T)
and the receiver (R), be isolated from each other, and that
T be bombarded visually and aurally with "emotionally
charged stimuli". The stimulus material was a set of
slides, especially created to have strong emotional impact,
accompanied by mood-associated music. In all three studies
significant results were obtained indicating the expression
of ESP. Unfortunately no comparisons were made between
emotional and non-emotional "transmissions". This control
problem makes it difficult to assess the true validity of
the results.

It would appear that "relaxation" and "emotionality
of target stimuli" are important variables in the phenom-
enon of ESP. One of the goals of the present study was to
look at these variables more closely. Specifically this
study was designed to:

(a) examine the relationship between psi performance
and the "relaxation s████e" variable.

(b) examine the relationship between ESP perform-

ance and the "emotionality of target simuli" variable.

(c) incorporate both the "state" and "emotion-
ality" aspects into one study enabling us to look at the
interaction.

One of the purposes of the present study was to
replicate and extend the studies conducted by the Braud's
(1973, 1974), by Stanford and Mayer (1974), and by Moss
and colleagues (1967, 1968, 1970). The basic design of
the study involved assigning Ss to one of six testing
conditions. The testing conditions or groups emerged as
a result of the combination of the "relaxation" variable
(relaxation instructions/arousal instructions) and
"emotionality" variable (emotional target stimuli/ non-
emotional target stimuli/neutral target stimuli). Half
the Ss or three of the groups listened to tape-recorded
relaxation instructions similar to those given by the
Braud's. The remaining half or the other three groups
listened to tape-recorded instructions also similar to
those given by the Braud's. Combined with this, one of the
relaxation instruction groups and one of the arousal
instruction groups, took part in a clairvoyance task in
which the target stimuli was emotionally charged. Another
two groups, one relaxation and one arousal, took part in
the clairvoyance task with a non-emotional target stimuli.
And the remaining two groups used target stimuli neutral
(all blank slides) in nature.

The effectiveness of the relaxation-arousal manipulation was assessed with three subjective self-report measures; (a) a seven point relaxation-arousal questionnaire (1= extremely tense or aroused; 7 = extremely relaxed), (b) a specific item from the State Anxiety Scale (Spielberger et al, 1970), (c) specific items from the Mood Adjective Check List (Nowlis, 1965). It was felt that a single measure such as used by the Braud's (1974) was not sufficient.

The target stimuli consisted of three series of slides, an emotional series, a non-emotional series and a neutral series. The addition of the non-emotional series, and the neutral series was a new feature, previous studies (Moss & Gengerelli, 1967, 1968; Moss et al, 1970) had only included an emotional series. The addition of the non-emotional series and neutral series facilitated control conditions.

Typically past force-choice ESP experiments required that a S discriminate the ESP targets one from another; i.e. that he/she recognizes which of the targets is present in a given trial. In the present study we were concerned, not with recognition, but with detection. In other words, can a S detect whether a target has or has not been presented regardless of whether, he/she can recognize which specific target it is? By including trials without a target, in

other words by intermixing blank slides in with the
emotional and non-emotional series, and asking the S
to state whether or not a target was actually presented
we can arrive at a method of assessing ESP performance.
The method of detection that was used in the present
study was a product of signal detection theory (Green &
Swets, 1966). This theory according to Zernhausern
(et al, 1966, p.174) "provides us with a number of useful
measures of ESP performance, potentially more adequate
than other methods of assessment". Essentially the theory
allows us to separate two statistics or two aspects of a
Ss decision. The first of these is sensitivity, or P(A)
(see APPENDIX A), which is a measure of ability to discrim-
inate the presence of a signal (emotional or non-emotional
slide) from its absence (blank slide). The second aspect
is called response bias, or β (see APPENDIX A), which is a
measure of how stringent is one's criterion for being
willing to judge that a signal (emotional or non-emotional
slide), as well as noise (blank slide), is present. In
the past the two aspects of ESP performance have often been
confounded. Signal detection theory gives us the opportu-
nity to separate the two and arrive at a sensitivity
measure unconfounded by response bias and vice versa. The
bias statistic which has never been assessed in previous
forced-choice ESP research may reveal some important

aspects of ESP performance.

In the past forced-choice research has utilized ESP performance measures which simply sum up the total number of correct responses. This type of measure is confounded by response bias. It should prove interesting to see a comparison between this type of ESP measure and P(A).

Measures of sensitivity and response bias were determined by Ss responses on an answer sheet where they indicated their degree of confidence in whether they believed a signal or a noise was being sent. ESP scores were determined by the sum of correct responses irrespective of confidence level or of whether it was a signal or a noise.

The method for this research involved two sessions. Session 1 was devoted to administering questionnaires. In session 2 the Ss were randomly assigned to one of the six conditions. Before the Ss listened to the tape-recorded instructions for relaxation or arousal they filled out a set of questionnaires. Two of these were scales to assess their level of arousal, the relaxation-arousal questionnaire and an item from the State Anxiety Inventory. After the tape-recorded instructions the clairvoyance task was conducted. During this task Ss filled out answer sheets regarding their confidence that a signal or noise was being

sent. Following this the Ss answered another series of questionnaires. Five of these were: the Mood Adjective Check List to assess how they felt during the ESP task; two State Anxiety Scales to assess how they felt during and after the ESP test; and two relaxation-arousal questionnaires to assess their level of arousal during and after the clairvoyance task.

"Attitudes"

The present study also gave us the chance to look at a number of other variables. Particularly prevalent in the literature are studies concerned with the Ss attitudes and beliefs. The relationship between the attitude of the S and his ESP performance, which may include not only his attitude toward ESP, but also his attitude toward the experimenter, his attitude toward the experimental situation, and his theoretical interest in ESP, are important areas of investigation in the field of parapsychology. The experimenter's attitude toward the Ss and his mood in the test situation may also be important factors. Summaries of studies in these areas may be found in Rao (1966) and Schmeidler (1976).

The studies most pertinent to the current investigation are those involved in demonstrating a relationship of test scores to belief in ESP. The original and best known work conducted in this area began in the mid 1940's

under the direction of Gertrude Schmeidler (1946, 1952).
She typically divided her $\underline{S}$s into two groups. Those who
believed in the possibility of ESP were called "sheep",
and those who rejected such a possibility were "goats".
Schmeidler's method of assessing the sheep-goat variable
was based on her $\underline{S}$s' answers to questions about the
possibility that ESP could occur under the conditions of
the experiment. She found consistently that the sheep
scored above mean chance expectation; while the goats
scored below.

Schmeidler's experiments were repeated with some
procedural changes by several other investigators.
Bevan (1947), using oral and written questions on attitude,
made a tripartite division of $\underline{S}$s into sheep, indecisives,
and goats. Bevan ascertained the attitudes of his $\underline{S}$s to
ESP (in a slightly different manner than Schmeidler) by
asking them whether they thought ESP could be measured
by the technique explained to them, and also whether they
considered ESP to be an established fact. In his study
the average scores of the sheep and indecisives were higher
than those of the goats.

Using categories similar to those of Bevan, Casper
(1951) found that sheep scored positively while the
indecisives scored negatively. Casper's criteria for sheep
versus goat division was different than Schmeidler's or
Bevan's. He asked his $\underline{S}$s whether they thought it possible

that ESP could occur and also what they thought of the possibility of their having the ESP ability themselves. He seems not to have asked about the S's belief in ESP as it would function in the test situation.

Van de Castle and White (1955) reported that in a test where the Ss were classified into sheep and goats by means of a sentence-completion test (ISQ), the sheep scored above chance and goats below chance. This questionnaire included both theoretical and scientific aspects of ESP.

Bhadra (1966) constructed an entirely new scale for the assessment of the sheep-goat distinction for his Ss. Employing this questionnaire, consisting of twelve questions (six relating to the S's paranormal experiences and six dealing with his attitudes), Bhadra tested 132 Ss using ESP cards. The sheep and goats, separated on the basis of their attitudes, scored significantly different. While sheep scored positively, goats obtained fewer hits than expected by chance.

It would appear from the experiments reviewed above that Schmeidler's findings have been replicated on a number of occasions. It would also appear, on the basis of a literature survey, that researchers feel that enough time has been spent on this area, as little work has appeared on this topic in the two parapsychology journals since 1973. This approach, however, seems to disregard

the large number of studies where the sheep-goat dichotomy did not work (e.g. Woodruff & Dale, 1950; Kahn, 1952; Adcock & Quartermain, 1959; Nash, 1965; Nash & Nash, 1967; Beloff & Bates, 1970; Ware & Butler, 1971; Terry & Kramer, 1973, etc.). For example in those studies conducted by Nash (1965) and Beloff & Bates (1970) they found that $\underline{S}$s classified as sheep, obtained significantly lower scores on the ESP task than did the goats. These results are in direct opposition to those obtained by Schmeidler (1946, 1952) and followers.

The conflicting nature of the literature with regard to the sheep-goat effect (SGE) may be seen a little more clearly in Palmer's (1971) review article. Of the 17 experiments which meet Palmer's criteria for grouping together only six show a significant (p < .05) sheep-goat tendency in the direction seen in Schmeidler's (1946, 1952) studies. The remaining eleven studies show non-significant results and therefore fail to confirm Schmeidler's findings.

The clarity of the SGE is further confounded by the extent to which the collection of published experiments (such as those reviewed in Palmer) can be considered a truly representative sample of all sheep-goat experiments. In psychology, for example, there is evidence that significant results are more likely to be submitted and accepted for publication than are non-significant results (Smart, 1964),

and there is evidence that this may be true in para-
psychology as well (Tart, 1969). Further, there is
evidence that parapsychological journals are more likely
to publish positive than negative findings (Billig, 1972).
These policies make it difficult to achieve a truly
representative sample of all sheep-goat experiments and
make it very difficult to evaluate cumulative findings in
terms of replicability.

- In order to ascertain attitude in the sheep-goat
experiments, various measures have been used. A more
comprehensive review of the literature (Palmer, 1971),
reveals that all measures deal with the question of belief
in ESP, either as a general phenomenon or in terms of one's
own ability. More specifically, four definitions of the
sheep-goat variable have been used.

These four definitions, expressed as criteria for
designation as a sheep, are listed below:

Criterion 1: Belief in the possibility of ESP
occurring under the specific conditions employed in the
experiment. This was the definition originally proposed
and utilized by Schmeidler (1946, 1952) in her studies.

Criterion 2: Belief in the existence of ESP in an
abstract or theoretical sense. Unlike criterion 1, a
person meeting criterion 2 need not specify any conditions
under which ESP may or may not occur. Criterion 2 is a

particularly popular method of assessing the sheep-goat variable and has been used by a number of researchers, Bevan (1947), Eilbert & Schmeilder (1950), Casper (1951), Smith & Canon (1954) to name a few.

Criterion 3: Belief that one himself may have psychic ability or may have one or more psychic experiences. Belief that one is "lucky" is not considered sufficient to meet criterion 3, because it does not specifically attribute this "luck" to any kind of psychic ability.

Criterion 4: Belief that one can or has demonstrated ESP in the experiment by scoring above chance on the ESP test.

In addition, two other more elaborate measures have been utilized;

ISQ: Van de Castle's Incomplete Sentences Questionnaire (1955). The items on the ISQ suggest that it is most comparable in meaning to criterion 2, although it should not be interpreted as interchangeable with criterion 2.

Bhadra's sheep-goat scale: The form of the scale used by Bhadra (1966) contains questions representing two criteria.

Now that the various sheep-goat criteria have been defined, we can ask if there is any relationship between the criteria chosen and the magnitude of the SGE. There are two approaches one can take to answering this question (Palmer, 1971). The first approach is simply to see

whether experiments using one criterion differ from experiments using another. However, this method is not a very meaningful indicator of such trends, because the studies being compared differ among themselves in so many other respects that genuine relationships are likely to be obscured. One pattern that is nevertheless worthy of mention is the success of Bhadra's scale in the two experiments where it has been employed (Bhadra, 1966; Ryzl, 1968). The SGE was particularly strong in his own experiment where items representing two criteria were combined in scoring the scale (Bhadra, 1966), a tactic which other investigators may do well to emulate.

As Palmer (1971) suggests a better approach to determining the relationship between the SGE and definition of the sheep-goat variable is to look at cases where the same $\underline{E}$ employed more than one criterion in the same basic design. To date, there have been very few studies which have tried this approach. The only direct comparisons of criteria 1 and 2 are Kahn's Series 3 and 4 (Kahn, 1952) and an experiment by Nash & Nash (1967). In both cases, criteria 2 emerged as superior. Studies looking at criterion 3 (Moss & Gengerelli, 1968; Schmeidler & Lindeman, 1966; Osis & Dean, 1964; Schmeidler, 1964; Casper, 1951; Woodruff & Dale, 1950) consistently found a weaker SGE. A similar pattern emerged from the studies (Schmeidler, 1964; Kahn, 1952; Schmeidler, 1950;

Woodruff.& Dale, 1950) looking at criterion 4.

Although neither the method of defining the sheep-goat variable nor the method of assessing it have been demonstrated conclusively to affect the outcome of sheep-goat experiments, the chaos that has reigned in this particular domain is nevertheless cause for a bit of sober reflection. First of all, there is need for a reliable, well-constructed measure of the sheep-goat variable. As Mangan (1958) has pointed out, the sheep-goat variable is multi-dimensional, and any scale purporting to measure it should take account of as many of its facets as possible. A framework for beginning the construction of such a scale is provided by the four criteria outlined in the previous sections. Sets of more specific questions can be generated from each of these broad categories. The scale developed by Bhadra (1966) represents a first step in constructing a more adequate sheep-goat measure.

The present study attempted to take a second step in developing a more adequate measure of the sheep-goat variable. It did so, by constructing a new scale which purports to take account of as many facets of the sheep-goat variable as possible. Mangan's (1958) suggestion of using the four criteria outlined in the previous section as a framework for beginning the construction of such a scale was taken seriously. From these broad categories specific

questions were developed. These questions were combined with Bhadra's scale in an additive manner in constructing a new and hopefully better scale.

As well as providing us with the opportunity of assessing the quality of this new instrument and of replicating Bhadra's findings this study also allowed us to look at the relationship between the SGE and the four definitions of the sheep-goat variable. Palmer's (1971) suggestion, that the best approach to determining the relationship was to look at cases where the same E employed more than one criteria in the same basic design, was taken earnestly. However, unlike other studies which have used Palmer's suggestion we used more than two criteria at a time, in fact, we included all four.

Investigation of the SGE was conducted by administering the newly constructed expectancy scale in session 2 prior to the clairvoyance task.

Another question or problem which was considered in this attitude section was response bias. This problem was alluded to earlier but it deserves further comment. Previous forced-choice ESP research failed to concern itself with response bias. This research used ESP measures that were confounded with response bias. Signal detection theory supplies us with the measures of ESP sensitivity that are devoid of the confounding effects of response bias.

The present investigation furnished us with the opportunity to collect data on the question of response bias. It should prove interesting to learn whether Ss in the present study expressed response bias. It should also prove interesting to see the relationship of this bias with the other variables.

"Mood"

Just as attitude may affect psi ability, psi may also be facilitated or hindered by moods of the S. In recent years, renewed interest in the study of relationships between S mood and ESP performance has been shown by an increase in research reports in this area. Carpenter (1968, 1969), Rogers (1966, 1967), and Feather & Rhine (1969), for example have studied aspects of ESP or PK performance in relation to naturally occurring moods.

Those studies particularly pertinent to the present investigation are those conducted by Carpenter (1968, 1969), and Rogers (1966, 1967). In precognition experiments, Rogers studied the relation of "positive affect" and "negative affect" of his Ss to their precognition scores. Initially Rogers (1966) tested himself on 10 occasions where he felt himself in a state of "negative affect". "Negative affect" he defined as a condition of being uninterested in the test and lacking in both desire and

confidence for success. "Positive affect" was said to be the opposite of these things. Rogers method of assessing affect was by personal judgement, he did not have a standard method of assessing these states. He found that when he was in an interested, enthusiastic mood, the variance between ESP run score was significantly higher than when his mood was uninterested or unenthusiastic, high variance representing a greater expression of ESP.

In a second study, Rogers (1967) recognized the limitations of using himself as the test $\underline{S}$, and tested the generalizability of the effect to $\underline{S}$s other than himself. Unfortunately he did not change the procedures he used. He did not assess his criteria of positive and negative affect in any standardized way. Even though the results of this study, were comparable to those of the first study, with the negative-affect series variance significantly larger, the results must remain suspect because of Roger's inadequate method of assessing mood. These studies should be repeated with a much more adequate assessment of positive and negative mood.

Carpenter (1968, 1969) has also conducted a series of studies looking at the relationship between mood and ESP. However, unlike Rogers he made an attempt to quantify relevant mood variables by utilizing Nowlis's (1965) Mood Adjective

Check List. This list consists of a series of 14 subscales, designed to assess such "transient mood states" as "Aggression", "Anxiety", "Good Mood", "Bad Mood", etc. With this method, a S is shown a list of adjectives descriptive of mood, such as "angry" or "dull", and is asked to check those which describe his feelings at the moment. Nowlis and Carpenter believed that this technique would be quite effective in obtaining a sensitive, relatively uncensored index of a person's conscious emotion or affect. The results of the two studies conducted by Carpenter were that the Ss in a moderately positive or an extremely negative mood manifested more evidence of ESP than the other Ss. These findings are a bit confusing, but nevertheless worthy of further investigation.

One of the goals of the present study was to repeat Carpenter's and Roger's studies with a new feature. Unlike the studies conducted by Roger's the mood of the Ss was assessed in a standardized manner. The mood of the Ss was assessed upon completion of the clairvoyance task with two subjective self-report measures: (a) a newly constructed Positive-Negative Affect questionnaire, and (b) the Mood Adjective Check List (two subscales "Good Mood" and "Bad Mood"). The Positive-Negative affect questionnaire was designed on the basis of the criteria laid out in Roger's studies, and was an attempt to systematically assess this criteria.

Administration of the MACL not only gave us an index of "Good Mood" and "Bad Mood" but also an index of a number of other "transient mood states". Consequently another goal of the present study was to examine the relationship between these "mood states" and ESP performance.

The Hypotheses to be tested

The previous discussion leads us to the following hypotheses:

(a) "Relaxation" and "Emotionality of Target Stimuli" Hypotheses

1. Ss exposed to the "relaxation" manipulation should demonstrate ESP scores significantly above chance, and their ESP performance should also be significantly different from those not exposed to the "relaxation" manipulation.

2. There should be a significant positive correlation between the self-report measures of "relaxation" and ESP performance scores.

3. Ss exposed to the emotional stimuli should report ESP performance scores significantly above chance and significantly above those who are not exposed to the emotional target stimuli.

4. (a) Group A (relaxation instructions X emotional target stimuli group) should score significantly above chance

level on the ESP performance scales, and this group should also show the highest level of psi performance among the groups, (b) Group B (relaxation instructions X nonemotional target stimuli group) and Group C (arousal instructions X emotional target stimuli group) should both score signific- cantly above chance level on ESP performance scales but should not differ significantly from one another on these scales. These groups should also report ESP performance scores significantly below those of Group A, and (c) Group D (arousal instructions X nonemotional target stimuli group), Group E (relaxation instructions X neutral target stimuli group) and Group F (arousal instructions X neutral target stimuli group) should all score at chance level on the clairvoyance task.

(b) "Sheep-Goat" Attitude and "Response bias" Attitude Hypotheses

5. (a) $\underline{S}$s who define themselves as sheep on the four different criteria of the sheep-goat variable and on Bhadra's scale should score significantly above mean chance on the ESP performance scales, (b) $\underline{S}$s who define themselves as goats on the sheep-goat scales should score significantly below mean chance on the ESP performance scales.

(c) "Mood" Hypotheses

6. $\underline{S}$s responding in a positive manner on the Mood questionnaires should report ESP scores significantly above

, mean chance, and significantly above those responding in a negative manner.

7. There should be a significant positive correlation between the measures of positive-negative affect and the ESP performance scales.

This study also gives us the opportunity to examine the relationship of "response bias" and "transient mood states" with ESP performance, in an exploratory sense.

CHAPTER II

METHOD

Subjects

Sixty university students (ages 18-60), agreed to participate in a study dealing with extra-sensory perception. Subjects received course credit for their participation.

Subjects ($\underline{S}$s) were randomly assigned to one of six testing conditions with the restriction of an equal number of $\underline{S}$s ($n = 10$) per condition. The six conditions were, (1) relaxation instructions X emotional target stimuli, (2) relaxation instructions X nonemotional target stimuli, (3) relaxation instructions X neutral target stimuli, (4) arousal instructions X emotional target stimuli, (5) arousal instructions X nonemotional target stimuli, and (6) arousal instructions X neutral target stimuli.

Assessment of Variables

Three sets of variables were assessed during the study: (a) Relaxation-Arousal variables, (b) Attitude variables, and (c) Mood variables. These variables were assessed in the following manner.

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Relaxation-Arousal variables. The effectiveness
of the relaxation-arousal manipulation was assessed with
three subjective self-report measures. The first of these
was the seven-point Relaxation-Arousal Questionnaire
(1 = extremely tense or aroused; 7 = extremely relaxed).
This scale was administered on three occasions; to assess
the degree of self-reported relaxation and arousal of the
Ss, before the tape recorded instructions were presented
(see APPENDIX B), during the ESP test (see APPENDIX C),
and after the ESP test (see APPENDIX D).

The second measure of relaxation-arousal consisted
of one item from the State-Anxiety Inventory (Spielberger
et al, 1970). Ss were asked to describe their subjective
experience of relaxation on a 4-point scale, with alterna-
tive ranging from "Not at all" to "Very much so", to the
question "I am relaxed". This item was administered three
times; after each administration of the relaxation-arousal
questionnaire (see APPENDIX E,F,G).

The third measure of state of awareness was specific
items from the Mood Adjective Check List (Nowlis, 1965).
By this method, a S was shown a list of adjectives des-
criptive of mood, such as "angry" or "dull" and was asked
to check those which described his/her feelings (see
APPENDIX H). The Ss described their mood by rating them-
selves on a 4-point scale, with alternatives ranging from

"definitely felt this way" to "definitely did not feel this way". The specific items pertaining to the assessment of relaxation-arousal were the adjectives "relaxed" and "aroused". Unlike the previous two questionnaires, Ss were only asked once to rate themselves on this scale. In this case Ss were asked to describe how they felt during the ESP test.

Attitude measurement. The Ss attitude toward the sheep-goat variable was assessed with a modification of the Bhadra (1966) scale. This questionnaire (see APPENDIX I) included 14 questions. The first seven items were taken verbatim from Bhadra's questionnaire. The first six items determined whether the Ss had had any spontaneous psi experiences. These questions also gave the S some idea of the experiential aspects of ESP. The seventh question determined what attitude the S had developed toward ESP because of his/her experiences. For the first six questions, the S was able to check one of two possible answers (Yes or No) and for question seven, one of three (Below chance, At chance, Above chance). The eighth question, slightly altered from the original found in Bhadra's scale, assessed the Ss belief in the existence of ESP in an abstract or theoretical sense (Criterion #2). The ninth, not found in Bhadra's scale assessed the Ss belief in the possibility of

ESP occurring under the specific testing conditions employed in the experiment (Criterion #1). The tenth question, again slightly altered from the original (Bhadra, 1966) attempted to ascertain the Ss belief that one may personally have psychic ability (Criterion #3). Question number eleven, a new question specifically constructed for this scale, assessed the belief that one can or has demonstrated ESP in the experiment (Criterion # 4). For questions eight through eleven the Ss were able to check one of seven possible answers. Questions twelve, thirteen, and fourteen were taken verbatim from Bhadra's scale. These last three questions were included so that Bhadra's entire scale would be represented and a replication of his study could be conducted.

Measurement of Mood. The mood state of the Ss was assessed with two subjective self-report measures. The first of these was the newly constructed Positive-Negative Affect Questionnaire. The object of this questionnaire (see APPENDIX J) was to make an exploratory attempt to quantify Rogers (1966, 1967) Positive and Negative mood variables.

Rogers' defined "Negative Affect" as a condition of being uninterested in the test, lacking enthusiasm and lacking confidence in success. "Positive Affect" was said to be the opposite of these things. The criteria of interest, enthusiasm and confidence for success were the key features

for the determination of the mood of the patient. These
three features or categories were the framework for the
new scale. Sets of specific questions were generated
from each of these categories.

The first three questions of the 9-item scale
(see APPENDIX J), asked the S to describe how interested
he/she was in the experiment. It requires three questions
because the Ss were asked to describe their feelings before
the ESP test started, during the ESP test and after the ESP
test. For these three questions, the S could check one of
four possible answers (1= not at all interested; 4 =
extremely interested). The next three items assessed the
Ss degree of enthusiasm about the experiment, before,
during and after the clairvoyance test. Again the Ss
could check one of four possible answers (1 = not at all
enthusiastic; 4 = extremely enthusiastic). Finally the
last three questions asked the S to describe his/her
expectation of success on the ESP test. Again the Ss were
able to check one of four possible answers (1 = very doubt-
ful ESP would occur; 4 = absolutely certain ESP would occur).

The second measure of mood was the Mood Adjective
Check List (Nowlis, 1965). As indicated earlier Ss rated
their mood by rating themselves on a 4-point scale with
alternatives ranging from "definitely felt this way" to
"definitely did not feel this way". Like the previous
scale the Mood Adjective Check List was only administered

once and unlike the previous scale it only requested that
Ss describe how they felt during the ESP test (see
APPENDIX H).

Target Material

The target pool consisted of three series of
slides, an emotional series, a nonemotional series, and
a neutral series. The slides chosen for the first two
series were selected by independent agents. These
agents viewed a series of thirty slides, intuitively
chosen by the E to consist of emotional and nonemotional
scenes. The agents rated each slide for its degree of
emotional content on a 4-point scale, with alternatives
ranging from absolutely no emotional content to high degree
of emotional content (see APPENDIX K). The five slides
with the highest mean emotional rating were used for the
emotional series, and the five with the lowest mean
emotional content rating were used for the emotional series.

The slides chosen in the above manner were used
to construct the slide series that were used in the
clairvoyance task. Three carousels of slides, 100 slides
for the emotional series, 100 slides for the nonemotional
series and 100 slides for the neutral series were used.
In the case of the emotional series 50 of the slides used
were the slides chosen by the independent agents. These

50 slides were the five slides chosen by the independent
agents replicated 10 times. The other 50 slides were
blank. The blank slides and emotional slides were
arranged in a random order (using a table of random
numbers) in the carousel by another independent agent.
The nonemotional series was constructed in a similar manner.
The neutral series consisted of 100 blank slides.

ESP test

The ESP test was a clairvoyance task utilizing the
target material mentioned in the previous section. For
this task each of the target slides was projected onto a
screen in a room some distance from where the S was.
Each slide was projected on the screen for a total of
10 seconds. During this period of time the S attempted to
"receive information" indicating whether a slide (signal)
or a blank slide (noise) was shown. During a 10 second
rest period after the presentation of the slide, the S
was asked to report whether they believe a signal or a
noise was being sent. Each S was given an answer sheet
to indicate their degree of confidence in their decision
on a 6-point Likert-type scale (see APPENDIX L). Alter-
natives on this scale ranged from, 1 = certain slide
presented, to 6 = certain blank slide presented. After
50 such confidence calls, the S was given a 5 minute rest
period. After this interval the remaining 50 trials were

presented.

Procedure

All Ss were seen in two sessions, the first
approximately 15 minutes in length and the second
approximately 1½ hours in length. Ss were seen in small
groups in the first session and individually in the
second session.

Session 1. At the beginning of session 1 all Ss
were informed that the purpose of the present study was
to look at the phenomena of ESP. They were also told
that in the course of this two session study that a
number of self-report questionnaires would be administered.

After these brief instructions arrangements were made
with each S for an appropriate time for individual testing
in session 2.

Session 2. Upon arrival the S was seated in a
comfortable chair and provided with writing material and a
writing table. The room was quiet and physically arranged
to minimize outside noise. Once the S was seated the first
of three relaxation-arousal questionnaires (see APPENDIX B)
and the first of three State Anxiety Inventories (see
APPENDIX E) was given.

After completion of these scales the E briefly told
the S of the procedures that would follow. The S was told

about the tape recorded instructions and he/she was informed about the procedure for the ESP task. After these remarks the S completed the Sheep-Goat questionnaire (see APPENDIX I).

One of the two tape recorded instructions was then given, depending upon which group the S had been assigned to. The relaxation (see APPENDIX M) and arousal tapes were very similar to the ones utilized by the Braud's (1974). The relaxation tape gave instructions to relax all muscle groups systematically from foot to head. The arousal-inducing tape was essentially the same as the relaxation tape except all mention of the word "relaxation" was replaced by the word "aroused", along with appropriate changes in other wording where necessary.

After the tape recorded instructions the S took part in the ESP task. Upon completion of this task the answer sheet was placed in a sealed envelop. After the envelop had been sealed the S answered the last two Relaxation-Arousal questionnaires, one for how they felt during the ESP task (see APPENDIX C), and another for how they felt at that moment (see APPENDIX D). Similarly the S completed the last two State Anxiety measures, one for how they felt during the ESP test (see APPENDIX F), and one for how they felt at that moment (see APPENDIX G). The E also administered the Mood Adjective Check List

(see APPENDIX H) and the Positive-Negative affect
questionnaire (see APPENDIX J).

The session ended with an explanation of the
purposes of the study and the E requested that the S
not talk to any of the other participants about the study.

CHAPTER III

RESULTS

The purpose of the present study was to determine the relationship between performance on a forced-choice clairvoyance task and a number of selected independent variables representing "Relaxation State", "Emotionality of Target Stimuli", "Attitudes" and "Mood" factors. It was predicted that these factors should be related to ESP performance. The results of this study are presented in four parts: first, the analyses used to assess the effectiveness of the Relaxation-Arousal manipulation; second, the analyses relevant to the "Relaxation" and "Emotionality of Target Stimuli" hypotheses; third, the analyses related to the "Attitude" hypotheses; and fourth the analyses relevant to the "Mood" hypotheses.

Effectiveness of the Relaxation-Arousal Manipulation

The effectiveness of the relaxation-arousal manipulation was assessed with three subjective self-report measures: (a) The Relaxation-Arousal Questionnaire, (b) an item from the State Anxiety Inventory, and (c) specific items from the Mood Adjective Check List. The effect of the relaxation-arousal manipulation on the

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Ss' subjective report on the first of these measures was assessed with a 2X3 (Relaxation group/Arousal group X before/during/after Relaxation-Arousal Questionnaire) mixed analysis of variance (ANOVA) with one between variable (Relaxation group/Arousal group) and one within variable (before/during/after Relaxation-Arousal Questionnaire). This analysis yielded significant main effects for both the Relaxation group/Arousal group variable, $F(1,58) = 18.27$, $p < .001$, and the Questionnaire variable, $F(2,116) = 9.35$, $p < .001$. The Relaxation group/ Arousal group X before/during/after Relaxation-Arousal Questionnaire interaction was also significant, $F(2,116) = 53.08$, $p < .001$. Differences between groups on this interaction were assessed with Newman Keul's post hoc comparisons ($\alpha = .05$). The means presented in Table 1 indicate that (a) relaxation group Ss reported significantly higher subjective experiences of relaxation during the ESP test than before or after it, (b) arousal group Ss reported significantly higher subjective experiences of arousal during the ESP test than before or after it, (c) relaxation group and arousal group Ss did not differ on their reported subjective experiences of relaxation- arousal before and after the ESP test; (d) relaxation and arousal group Ss reported significantly different subjective experiences of relaxation-arousal during the

Table 1

Mean Relaxation-Arousal Questionnaire Score for Relaxation
and Arousal Groups X Before/During/After Administration
Interaction.

Group		Relaxation-Arousal Questionnaire		
		before	during	after
Relaxation	Mean	5.5_a	6.3_b	5.6_a
Group	(S.D.)	(1.2)	(0.7)	(1.2)
Arousal	Mean	5.4_a	3.7_c	5.6_a
Group	(S.D.)	(1.1)	(0.8)	(1.1)

Note. Means sharing the same letter-subscript fail to
differ significantly ($p < .05$).

ESP test.

Table 2 presents the means for the second measure of the effectiveness of the relaxation-arousal manipulation. A 2X3 (Relaxation group/Arousal group X before/during/after "I am relaxed" State Anxiety Inventory) mixed ANOVA with one between variable (Relaxation group/ Arousal group) and one within variable (before/during/after "I am relaxed" State Anxiety Inventory) yielded significant main effects for both the Relaxation group/Arousal group variable, $F(1,58) = 36.68$, $p < .001$, and the Inventory variable, $F(2,116) = 16.06$, $p < .001$. The Relaxation group/ Arousal group X before/during/after "I am relaxed" State Anxiety Inventory interaction was also significant, $F(2,116) = 90.69$, $p < .001$. In other words, the results for the second measure are identical to those arrived at from the first measure.

The third measure of the effectiveness of the relaxation-arousal manipulation was specific items from the MACL. Unlike the first two measures this scale only requested subjective reports of relaxation and arousal during the ESP test. Table 3 presents the means of the Ss responses to the relaxation item. Single factor ANOVA's (Relaxation group/Arousal group) revealed a significant difference between the Relaxation group and Arousal group on the relaxation item, $F(1,58) = 58.02$, $p < .001$. Table 4

Table 2

Mean "I am relaxed" Score from State Anxiety Inventory
for Relaxation and Arousal Groups X Before/During/After
Administration Interaction

Group		State Anxiety Inventory		
		before	during	after
Relaxation	Mean	2.1_a	2.8_b	2.3_a
Group	(S.D.)	(0.7)	(0.4)	(0.7)
Arousal	Mean	2.3_a	0.6_c	2.0_a
Group	(S.D.)	(0.7)	(0.5)	(0.8)

Note.   Means sharing the same letter-subscript fail to
differ significantly ($p < .05$)

Table 3

Mean MACL "relaxed" During Score for Relaxation and
Arousal Groups.

Group		MACL "relaxed" during
Relaxation Group	Mean (S.D.)	2.7_a (0.5)
Arousal Group	Mean (S.D.)	0.7_b (0.5)

Note. Means sharing the same letter-subscript fail to
differ significantly ($p < .01$)

Table 4

Mean MACL "aroused" During Score for Relaxation and
Arousal Groups.

Group		MACL "aroused" during
Relaxation Group	Mean (S.D.)	0.5_a (0.6)
Arousal Group	Mean (S.D.)	2.1_b (0.5)

Note. Means sharing the same letter-subscript fail to
differ significantly ($p < .01$)

shows that the relaxation group and arousal group differ significantly on the arousal item of the MACL, $F(1,58) = 48.79$, $p < .001$. These findings, based on the third measure of relaxation-arousal manipulation, indicate that the relaxation group reports significantly higher relaxation scores and significantly lower arousal scores than the arousal group during the ESP test.

Results of Hypothesis Testing

a) "Relaxation" and "Emotionality of Target Stimuli" Hypotheses.

From the clairvoyance task, ESP scores and P(A) scores were obtained for each of the 60 Ss. A 2X3 (Relaxation group/Arousal group X Emotional/non-emotional/ neutral target stimuli) ANOVA was performed to assess the effect of the relaxation-arousal manipulation and emotionality of target stimuli on ESP scores. An identical 2X3 ANOVA was conducted to assess the effect of the relaxation-arousal manipulation and emotionality of target stimuli on P(A) scores. No significant differences emerged in either ANOVA.

The t-tests ($p < .05$) conducted on the means of the last two ANOVA's indicated that none of the means differed significantly from MCE or expected P(A) (see Tables 5 & 6).

Table 5

Mean ESP Score for Relaxation Group/Arousal Group X
Emotional/Non-emotional/Neutral Target Stimuli.

Group			Target Stimuli	
		emotional	non-emotional	neutral
Relaxation	Mean	48.9_a	49.1_a	47.6_a
Group	(S.D.)	(4.7)	(6.2)	(4.5)
Arousal	Mean	48.7_a	47.6_a	47.7_a
Group	(S.D.)	$(3.5)^a$	(5.8)	(5.9)

Note. Means sharing the same letter-subscript fail to differ
significantly ($\underline{p} < .05$).

Table 6

Mean P(A) Score for Relaxation Group/Arousal Group X
Emotional/Non-emotional/ Neutral Target Stimuli.

Group		Target Stimuli		
		emotional	non-emotional	neutral
Relaxation Group	Mean (S.D.)	$.485_a$ (.051)	$.489_a$ (.049)	$.472_a$ (.043)
Arousal Group	Mean (S.D.)	$.492_a$ (.042)	$.487_a$ (.078)	$.487_a$ (.075)

Note. Means sharing the same letter-subscript fail to differ
significantly ($p < .05$).

In other words none of the groups produced ESP scores significantly above or below chance. That is, Ss exposed to the "relaxation" manipulation did not demonstrate ESP scores significantly above chance, nor did their ESP performance differ from those not exposed to the "relaxation" manipulation (Hypothesis 1). These results also indicate that Ss exposed to the emotional stimuli did not report ESP performance scores significantly above chance (Hypothesis 3). And these results also reveal that none of the six testing condition groups (Groups A to F) differed significantly from one another in terms of ESP performance (Hypothesis 4).

For most ESP research the typical method of analysis is to divide the Ss up in a dichotomous manner (divided at the mean or median) on the predictor variables of interest. When the Ss are divided with respect to their responses on the predictor variable, the efficacy of this variable as a predictor can then be judged using some statistical tool. This method of analysis was continued in the present investigation. Ss were dichotomized at their mean into hi and low groups with respect to their responses on the eight indices of Relaxation-Arousal manipulation. Single factor ANOVA's ($p < .01$) performed on the eight indices yielded no significant differences between hi and low groups

with respect to ESP performance. The means used in these analyses were subjected to t-tests to determine if they differed significantly from expected ESP performance. Using this method of analysis, no significant differences emerged ($p<.01$). In other words, none of the indices of relaxation-arousal manipulation are significant predictors of ESP performance.

The second hypothesis predicted that there should be a significant positive correlation between the self-report measures of "relaxation" and ESP performance scores. Table 7 presents the product moment correlations among indices of the Relaxation-Arousal variable, ESP score, $P(A)$ and β . The eight indices of relaxation-arousal showed no significant relationship to ESP score, $P(A)$, and β . Thus the second hypothesis was not confirmed. However, the product moment correlations did reveal some significant findings. $P(A)$ did correlate significantly with ESP score, $r=.82$, $p<.01$ and the indices of relaxation-arousal, correlated significantly with one another in the expected manner.

(b) "Sheep-Goat" Attitude and "Response Bias" Attitude Hypotheses.

Ss were divided into sheep-goat or sheep-indecisive-goat attitude groups on the basis of their responses to the indices of the Sheep-Goat variable.

Table 7

Correlations Among Indices of the Relaxation-Arousal
Variable, ESP Score, P(A), and β.

Variable	1	2	3	4	5	6	7	8	9	10	11
1. ESP Score											
2. P(A)	.82**										
3. β	.09	.18									
4. Relaxation-Arousal Ques. (before)	.04	.01	-.16								
5. Relaxation-Arousal Ques. (during)	.13	.02	.07	.09							
6. Relaxation-Arousal Ques. (after)	-.01	-.03	.03	.41**	.24						
7. State Anxiety[a] Inventory (before)	-.03	.07	.21	.71**	-.02	(22					
8. State Anxiety Inventory (during)	.04	-.03	-.07	.07	.92**	.14	.03				
9. State Anxiety Inventory (after)	.17	.15	.14	.39**	.45**	.47**	.40**	.36**			
10. MACL "relaxed"[b] (during)	.11	-.01	-.05	.05	.95**	.21	-.02	.94**	.42**		
11. MACL "aroused"[c] (during)	-.08	-.08	-.02	-.07	-.71**	.05	.15	-.74**	-.16	-.73**	

[a] Ss respond to single item from State Anxiety Inventory, "I am relaxed" before administration of ESP test.

[b] Ss respond to single item from Mood Adjective Check List, "relaxed".

[c] Ss respond to single item from Mood Adjective Check List, "aroused".

* $p < .05$
** $p < .01$

The effect of the attitude group division into sheep and goat groups by Palmer's Criterion #4 on ESP scores was assessed with a single factor (Sheep-Goat division) ANOVA. The sheep group produced significantly different ESP scores than the goat group, $F(1,58) = 4.57$; $p < .05$. The sheep group failed to produce ESP scores significantly above or below MCE, $t(15) = .33$, ns. The goat group scored significantly below MCE, $t(43) = 2.68$, $p < .01$. The means involved in this analysis can be seen in Table 8.

Table 9 shows that the sheep and goat groups divided by Palmer's Criterion #4 differed significantly on P(A) scores, $F(1,58) = 5.12$, $p < .05$. The sheep group failed to produce P(A) scores significantly above or below chance, $t(15) = .97$, ns. The goat group scored significantly below the expected P(A) value, $t(43) = 2.52$, $p < .01$.

Single factor ANOVA's conducted on the remaining indices of the Sheep-Goat variable, showed no significant differences between sheep and goat (or sheep-indecisive-goat) groups with respect to ESP performance. The t-tests ($p < .01$) performed on these indices revealed that none of the means of ESP performance differed significantly from chance. These results reveal that the predictions proposed in hypothesis five were only partially supported. That is, Ss who defined themselves as sheep on the four different criteria of the sheep-goat variable did not score signi-

Table 8

Relation Between ESP Scores and Indices of the Sheep-Goat Variable.

Criterion	Attitude Group	No. of $\underline{S}$s	Mean ESP Score	$\underline{t}^a$	F^b
Palmer's Crit. #4	Sheep	16	50.4	0.33	4.57*
	Goat	44	47.6	2.68*	

a Single sample $\underline{t}$-test to determine whether group deviates significantly from $\underline{MCE}$ ($\underline{MCE} = 50$) (* $\underline{p} < .01$).

b Single factor $\underline{ANOVA}$ to determine whether hi and low groups deviate significantly from one another (* $\underline{p} < .05$).

Table 9

Relation Between $\underline{P(A)}$ and Indices of the Sheep-Goat Variable.

Criterion	Attitude Group	No. of $\underline{S}$s	Mean $\underline{P(A)}$ Score	$\underline{t}^a$	F^b
Palmer's Crit. #4	Sheep	16	.511	0.97	5.12*
	Goat	44	.475	2.52*	

a Single sample $\underline{t}$-test to determine whether group deviates significantly from expected $\underline{P(A)}$ (.500) (* $\underline{p} < .01$).

b Single factor $\underline{ANOVA}$ to determine whether hi and low groups deviate significantly from one another (* $\underline{p} < .05$).

ficantly above mean chance on the ESP performance scales.
The Ss who defined themselves as goats, according to
Palmer's Criteria #1, #2, and #3, did not score signi-
ficantly below mean chance on the ESP performance scales.
However, the Ss who defined themselves as goats on
Palmer's Criteria #4 did score significantly below mean
chance.

In addition to examining the sheep-goat attitude
this study also looked at the "response bias" attitude.
The β value is our measure of "response bias". If an
observer gives $\beta = 1$, he/she is unbiased, if $\beta > 1$ or if
$\beta < 1$ the observer is biased. That is, Ss as a whole did
not report a response bias significantly different than
$\beta = 1$. A 2X3 (Relaxation group/Arousal group X emotional/
non-emotional/neutral target stimuli) ANOVA was conducted to
assess the effect of the relaxation-arousal manipulation and
emotionality of target stimuli on β scores. No signifi-
cant differences emerged. The t-tests (p <.01) conducted
on the means of the last two ANOVA's indicated that none of
the means differed significantly from $\beta = 1$. In other
words none of the groups produced a significant response
bias.

Table 10 presents the product-moment correlations
among Indices of the Sheep-Goat variable, ESP score, and
P(A). As can be seen from this Table, the six indices of

Table 10

Correlations Among Indices of the Sheep-Goat Variable, ESP
Score, P(A), and β.

Variable	1	2	3	4	5	6	7	8	9
1. ESP Score									
2. P(A)	.82**								
3. β	.09	.18							
4. Bhadra Scale	.03	.07	-.24						
5. Palmer's Crit. #1	-.07	.01	-.17	.54**					
6. Palmer's Crit. #2	.06	.11	-.17	.68**	.64**				
7. Palmer's Crit. #3	.19	.28	.01	.58**	.29*	.48**			
8. Palmer's Crit. #4	.05	.10	-.14	.56**	.37**	.25	.64**		
9. Total Crit. #1,2,3,4	.07	.17	-.19	.77**	.75**	.76**	.80**	.74**	

* $p < .05$
** $p < .01$

the sheep-goat variable showed no significant relationship to ESP score, P(A) and β. However, this Table does reveal some significant results, namely (a) Bhadra's Scale correlated significantly with the other Sheep-Goat scales, (b) Palmer's Criterion #1 correlates significantly with the other Sheep-Goat scales, (c) Palmer's Criterion #2 correlates significantly with Criterion #1, Criterion #3, and the Sum Total of the Criteria, but failed to correlate significantly with Criterion #4, and (d) all of the sheep-goat scales except for Criterion #2 correlate significantly with Criterion #4.

(c) "Mood" Hypotheses.

In order to determine whether $\underline{S}$s responding in a positive manner on the Mood questionnaires reported ESP scores significantly above mean chance, and significantly above those responding in a negative manner (Hypothesis 6), $\underline{S}$s were dichotomized at their mean into hi and low groups on the basis of their responses on three indices of Positive-Negative affect during the ESP test. These indices assessed the $\underline{S}$s' subjective report of Positive-Negative affect during the ESP test.

A single factor ANOVA revealed that the Hi Expectation of Success group produced significantly different ESP scores than the Low Expectation of Success group, $\underline{F}(1,58) = 3.52$, $\underline{p} < .05$. The Low Expectation of

Success group produced ESP results significantly below
chance, $\underline{t}(28) = 2.65$, $\underline{p} < .01$. The Hi Expectation of
Success group failed to produce ESP results significantly
above or below chance, $\underline{t}(30) = .71$, ns. The means involved
in this analysis can be seen in Table 11.

Table 12 shows that the hi and low Expectation of
Success groups differed significantly on P(A) scores,
$\underline{F}(1,58) = 5.24$, $\underline{p} < .05$. The Hi Expectation of Success
group did not produce P(A) scores significantly above
or below chance, $\underline{t}(30) = .71$, ns. The Low Expectation
of Success group did produce P(A) scores significantly
below chance, $\underline{t}(28) = 2.65$, $\underline{p} < .01$.

Single factor ANOVA's conducted on the Ss'
subjective responses of Interest in the ESP test during,
Enthusiasm in the ESP test during, and the Sum of Interest
during score, Enthusiasm during score, and Expectation of
Success during score, revealed no significant differences
between the hi and low groups with respect to ESP perform-
ance. The $\underline{t}$-tests ($\underline{p} < .01$) performed on these three indices
of Positive-Negative affect revealed that none of the
means of ESP performance differed significantly from
chance.

As with the Positive-Negative Affect questionnaire
Ss were dichotomized about their mean into hi and low
groups with respect to their responses on the Mood
Adjective Check List Subscales. Single factor ANOVA's

Table 11

Relation Between ESP Score and Indices of Positive-Negative Affect.

Criterion	Attitude Group	No. of $\underline{S}$s	Mean ESP Score	$\underline{t}^a$	$\underline{F}^b$
Success (during)	Low Succ.	29	47.0	2.65*	3.52*
	Hi Succ.	31	49.4	0.71	

a   Single sample $\underline{t}$-test to determine whether group deviates significantly from $\underline{MCE}$ ($\underline{MCE}$ = 50) (* $\underline{p}$ <.01).

b   Single factor $\underline{ANOVA}$ to determine whether hi and low groups deviate significantly from one another (* $\underline{p}$ <.05).

Table 12

Relation Between $\underline{P(A)}$ and Indices of Positive-Negative Affect.

Criterion	Attitude Group	No. of $\underline{S}$s	Mean $\underline{P(A)}$	$\underline{t}^a$	$\underline{F}^b$
Success (during)	Low Succ.	29	.469	2.74*	5.24*
	Hi Succ.	31	.501	0.58	

a   Single sample $\underline{t}$-test to determine whether group deviates significantly from expected $\underline{P(A)}$ (.500) (* $\underline{p}$ <.01).

b   Single factor $\underline{ANOVA}$ to determine whether hi and low groups deviate significantly from one another (* $\underline{p}$ <.05).

($\underline{p} < .05$) and $\underline{t}$-tests ($\underline{p} < .01$) were performed on these
fourteen subscales. These ANOVA's indicated that the
hi and low subdivisions of the subscales did not differ
significantly with respect to ESP performance. The
$\underline{t}$-tests also indicated that none of the means were
significantly different from chance.

The results from the two "Mood" questionnaires
indicates quite clearly that hypothesis six was not
supported. That is, $\underline{S}$s responding in a positive manner
on the Mood questionnaires did not report ESP scores
significantly above mean chance.

The product-moment correlations among Indices of
Positive-Negative affect, ESP score, $\underline{P(A)}$ and β are
presented in Table 13. This Table reveals that the
correlations between the nine Indices of Positive-
Negative affect, ESP score, $\underline{P(A)}$ and β were not
significant. These findings are contrary to the pre-
dictions of hypothesis seven, which stated that there
should be a significant positive correlation between the
measures of positive-negative affect and the ESP per-
formance scales.

Table 13 also reveals that, (a) Interest in the
ESP test before, during and after its conduction inter-
correlate significantly and correlate significantly with
Enthusiasm in the ESP test before, during and after,
(b) the three interest variables correlate significantly

Table 13

Correlations Among Indices of Positive-Negative Affect, ESP
Score, P(A), and β.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ESP Score													
2. P(A)	.82**												
3. β	.09	.18											
4. Interest (before)	.15	.22	-.21										
5. Interest (during)	.23	.17	-.11	.49**									
6. Interest (after)	.21	.20	.02	.48**	.78**								
7. Enthusiasm (before)	.10	.15	.17	.61**	.52**	.56**							
8. Enthusiasm (during)	.01	.12	-.08	.45**	.68**	.68**	.55**						
9. Enthusiasm (after)	.04	.17	-.09	.38**	.53**	.72**	.49**	.73**					
10. Success (before)	.26	.14	-.05	.21	.21	.08	.24	.14	-.02				
11. Success (during)	.22	.16	-.04	.14	.25	.20	.05	.31	.14	.68**			
12. Success (after)	.22	.20	-.06	.13	.21	.24	.09	.29	.15	.59**	.78**		
13. Sum (during)	.16	.18	.17	.33**	.53**	.44**	.50**	.64**	.57**	.30*	.29*	.30*	

* $\underline{p} < .05$
** $\underline{p} < .01$

with the Sum of Interest during score, Enthusiasm during
score, and Expectation of Success during score, (c) the
three Interest variables fail to correlate significantly
with Expectation of Success, before, during and after,
(d) the Ss' Enthusiasm with the ESP test before, during
and after its conduction intercorrelate significantly,
(e) Ss' report of Enthusiasm during the ESP test correlate
significantly with Expectation of Success during and after,
(f) Expectation of Success before, during and after inter-
correlate significantly, and (g) the three Expectation of
Success variables correlate significantly with the Sum of
the criteria of Positive-Negative affect\assessed during
the clairvoyance task.

Table 14 shows that the correlations between the
fourteen MACL subscales, ESP scores, and P(A) were not
significant. Again these results fail to substantiate
the predictions made in hypothesis eight. These findings
also indicate that in our exploratory endeavour to examine
the relationship between "transient mood states" and ESP
score and P(A) we failed to find a significant relation-
ship. However, the correlations were not entirely non-
significant as β did correlate significantly with one of
the MACL subscales, namely concentration, $r = .34$, $p < .01$.
The intercorrelations of the MACL subscales followed the
expected pattern (see review paper on MACL research by
Nowlis, 1965).

Table 14

Correlations Among Mood Adjective Check List Subscales, ESP Score, P(A), and β.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. ESP Score																	
2. P(A)	.82**																
3. β	.09	.18															
4. MACL total	.06	-.01	-.20														
5. Aggression	.04	-.02	-.06	.58**													
6. Anxiety	.22	.22	-.03	.46	.48**												
7. Surgency	.26	.21	.02	.69**	.31*												
8. Elation	-.01	-.01	-.09	.70**	.25*	.01	.05										
9. Concentration	.01	.01	-.34**	.23	.22	-.11	-.01	.71**									
10. Fatigue	.01	-.15	-.19	.21	.27*	.15	-.05	-.07	.26*								
11. Social Affection	.15	.13	-.03	.65**	.16	.01	.60**	.68**	.20	-.21							
12. Sadness	.01	-.03	-.09	.47**	.49**	.42	.18	.04	.13	-.40**	-.02						
13. Skepticism	-.20	-.21	-.13	.33*	.35*	.33*	.05	-.12	.12	-.05	.32*						
14. Egotism	.01	.05	.02	.55**	.33*	.41	.24	.27*	.13	-.11	.21	.15	.16				
15. Vigor	.12	.11	-.07	.62**	.15	.16	.48**	.62**	.31	-.32	.50**	.03	-.05	.40*			
16. Good Mood	.15	.17	-.07	.78**	.28*	.09	.86**	.89**	.21	-.17	.69**	.10	-.04	.35**	.82**		
17. Bad Mood	-.09	-.16	-.06	.63**	.76**	.79**	.24	.16	-.16	.30	.07	.78**	.44**	.35**	.19	.23	

* $p < .05$
** $p < .01$

CHAPTER IV

DISCUSSION

The purpose of the present study was to determine the relationship between performance on a forced-choice clairvoyance task and a number of selected independent variables representing the following factors: "Relaxation State", "Emotionality of Target Stimuli", "Attitudes", and "Mood".

"Relaxation" and "Emotionality of Target Stimuli"

Previous research (Braud & Braud, 1973, 1974; Stanford & Mayer, 1974, etc.) indicated that "relaxation" had been found to be quite favourable to the occurrence of psi phenomena. Ss exposed to the "relaxation" manipulation, in the present study, did not demonstrate ESP scores significantly above chance. Their performance was not significantly different from those exposed to the "arousal" manipulation. Furthermore, there was not significant correlation between the self-report measures of "relaxation" and ESP performance scores (see Table 7).

This inability to establish a link between "relaxation" and ESP performance could not be accounted for by an ineffective relaxation-arousal manipulation. Ss in the relaxation group reported significantly higher

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subjective experiences of "relaxation" during the ESP
test than the Ss in the Arousal group. And arousal Ss
reported significantly higher subjective experiences of
"arousal" during the ESP test than the relaxation Ss
(see Tables 1,2,3 and 4). In other words, the two groups
were significantly differentiated on the relaxation-
arousal dimension.

Perhaps the differences between the present study
and the studies conducted by the Braud's (1973, 1974) and
Stanford & Mayer (1974) is associated with the different
methods used in the studies. The last three studies used
a "free-response" ESP task, while the present investigation
used a "forced-choice" ESP task. Braud (1973) felt that
"free-response" experiments were more conducive to the
occurrence of psi phenomena. Reviews conducted by Rao
(1966), Schmeidler (1976) and Thouless (1972) support
this conclusion. However, these reviews also suggest that
"free-response" studies are a great "deal more susceptible
to methodological problems, such as experimenter bias,
bias in scoring, sensory cueing, etc." (Rao, 1966, p.112).
These methodological errors have all been offered as
alternative explanations to explain the greater occurrence
of ESP in "free-response" ESP experiments. Braud (1974)
also thought that the "relaxation state" facilitated
expression of ESP in the "free-response" condition but not
in the "forced-choice" experiment. However, he failed to

explain why he thought this way. Disregarding this failure and the problems with methodological errors there may be some differences between the two types of methods which account for our inability to replicate the previous studies. A goal for future research could be to examine this issue a little more closely.

The "relaxation state" has been hypothesized to be psi-conducive in previous research and in the present study. There are a variety of techniques to induce a shift toward a greater "relaxation state". The technique employed successfully in the past, and unsuccessfully in the present study was progressive muscular relaxation, along with suggestions of mental relaxation. In the future, techniques such as drugs, meditative exercises, biofeedback and other consciousness-altering devices may be successful in facilitating psi expression, or at least more successful than the technique used in the present study. Perhaps measures associated with the "relaxation state" other than the ones used in the present investigation (self-report measures) will be found to correlate with ESP performance. These other measures might include: lowered sympathetic arousal; lowered frequency and increased amplitude of EEG activity; lowered spontaneous or elicited skin response; psychological measures like manifestations of Deikman's "receptive mood" (Braud, et al, 1974); decreased anxiety

as assessed with the State Anxiety Inventory; and so on.

"Relaxation", is not the only variable reported to be favourable to psi performance. Laboratory research conducted by Moss (et al, 1967, 1968, 1970) suggested that the "emotionality of target stimuli" was an important variable in psi performance. The present results do not confirm these findings. Ss exposed to the emotional target stimuli in the clairvoyance task did not report ESP performance scores significantly above chance. Nor did they score significantly above those not exposed to the emotional target stimuli. In fact, Ss exposed to the emotional, non-emotional, and neutral target stimuli, all scored at chance level on the ESP performance scales.

The present investigation also gave us the opportunity to examine the interaction between "relaxation" and "emotionality" variables. The prediction that the relaxation instructions X emotional target stimuli group would score significantly above chance level on the ESP performance scales was not substantiated by the results of the present study. This group and the other five groups all scored at chance level on the clairvoyance task.

Whatever the reasons for our inability to replicate previous studies, our results indicate quite clearly that we failed to establish a significant

predictive relationship between ESP performance and "relaxation" and "emotionality of target stimuli".

"Attitudes"

Since 1973 little work has appeared in the parapsychology journals on the topic of the Sheep-Goat Effect (SGE). The present investigation looked at the SGE in a new manner. Previous studies examining the SGE had used a variety of different criteria in determining the Ss attitude toward ESP. A comprehensive review of the literature (Palmer, 1971) revealed that all measures used in previous ESP research dealt with one of four types of questions. Previous studies had not asked if there was a relationship between these four criterion and the magnitude of the SGE. Palmer (1971) suggested that the best approach to determining the relationship between the SGE and definitions of the sheep-goat variable was to look at cases where the same E employed more than one criterion in the same basic design. For the present study a new scale was constructed, which utilized all four criterion outlined in Palmer's (1971) review.

Our findings using this newly constructed scale indicate that Ss who defined themselves as sheep on the four different criteria of the sheep-goat variable and on Bhadra's scale did not score significantly above mean chance on the ESP performance scales. Ss who defined

themselves as goats on the sheep-goat scale and on Bhadra's scale did not score significantly below mean chance on the ESP performance scales. However, examination of the SGE for each individual criterion yielded significant effects. The sheep and goat groups created by division on criterion #4 of the sheep-goat scale produced significantly different ESP performance scores (see Tables 8 & 9). The goat group scored significantly below expected value of ESP performance (psi-missing) and although the sheep group did not deviate significantly from mean ESP performance, their scores were in the predicted direction. These results are a positive and significant indication of ESP. The SGE so often seen in previous research (Schmeidler, 1946, 1952; Bevan, 1947; Casper, 1951; Bhadra, 1966, etc.) was at least partially replicated in the present study.

While the present findings represent a partial replication of previous work it also represents a failure to replicate the basic tenor of this past work. Previous research (Kahn, 1952; Nash & Nash, 1967, etc.) suggested that criterion #1, and #2 were superior in detecting the SGE. The results of the present study suggest that criterion #4 is superior. Since the present study used a scale which assessed all four criteria of the sheep-goat variable,

perhaps it represents a more adequate test of the superiority of the different criteria in detecting SGE, or at least more adequate than the past studies which only looked at two criteria at a time (Kahn, 1952; Nash & Nash, 1967, etc.).

The differences in findings on the superiority of the criterion in detecting SGE may also be related to the "weakness and instability of the SGE" (Palmer, 1971, p.376) itself. Review articles of the published SGE experiments (Mangan, 1958; Palmer, 1971) illustrates the instability of the SGE, as they contain studies of conflicting nature. This conflicting evidence brings into question the validity of the SGE and also clouds the issue as to which of the criteria is superior in detecting the SGE.

The present findings concerning "response bias" indicate that Ss as a whole did not report a significant bias. Nor did any of the six groups, produced as a result of a division on the "relaxation" and "emotionality of target stimuli" variables, report a significant bias. These findings suggest that "response bias" is not an important factor in ESP performance. However, examination of correlations of "response bias" with the "transient" mood states: reveals a significant negative correlation between bias and "concentration" (Because of the large

number of correlations examined the significance of this finding is somewhat suspect). "Concentration" in this case refers to one of the subscales of the MACL. In this, subscale Ss are shown three adjectives (concentrating, engaged in thought, and intent) descriptive of mood and are asked to check if they are descriptive of their mood. The negative correlation between "concentration" and "response bias" suggests that Ss who find themselves not to be "concentrating" during the ESP test report "response bias". The set up of the "forced-choice" clairvoyance task was such that there was a 50% chance for a slide to be presented on each trial. Consequently any "response bias", or any type of response set would reduce the potential ESP sensitivity of the S. Any factor which contributed to a response bias would also contribute to a reduction in potential ESP sensitivity, in the "forced-choice" type of ESP task. More light on the importance of "concentration" in ESP performance could be shed by future studies.

"Mood"

Based on previous research, we predicted that Ss responding in a positive manner on the, Positive-Negative Affect questionnaire, and MACL ("Good Mood" and "Bad Mood"

subscales) would report ESP performance scores significantly above mean chance, and significantly above those responding in a negative manner. The results failed to confirm this prediction. Ss responding in a positive manner did not differ from those responding in a negative manner on either of the ESP performance measures. Furthermore, the results failed to reveal a significant correlation between the measures of positive-negative mood and the ESP performance scales (see Table 13).

The results for the mood variables were not entirely non-significant. For one of the indices of the Positive-Negative Affect questionnaire, a single factor ANOVA revealed that the Hi Expectation of Success group produced significantly different ESP scores than the Low Expectation of Success group (see Tables 11 & 12). The Low Expectation of Success group produced ESP results significantly below chance level. This is a partial replication of the work conducted by Rogers (1966, 1967). It is a partial replication, in the sense that, Rogers (1966, 1967) found that his Low Expectation of Success group scored significantly below chance and his Hi Expectation of Success group scored significantly above chance level. Combining the present findings with those of Rogers (1966, 1967) it would appear that "Expectation of Success", on the part of the Ss, is an important variable in ESP

performance.

Since two independent workers have produced similar findings, perhaps "Expectation of Success" will emerge as a predictor of ESP performance.

The present study also examined the relationship of a number of "transient mood states", as measured by the MACL, with ESP performance. This exploratory endeavour failed to reveal any significant relationships. However, exploratory endeavours such as this, proceeding without benefit either of established empirical relations or internally consistent theoretical rational may perhaps profit from a kind of "successive-series" strategy. By a logically related series of investigations, genuinely predictive hypotheses may be increasingly confirmed and elaborated, and unpredictive ones discarded or more fruitfully reformulated. The present investigation describes an early stage of such an on-going study. Subsequent research may support the present findings or demonstrate relationships between "transient mood states", which were not seen here.

In conclusion, the two measures of ESP performance, ESP score and P(A), used in the present study were highly and significantly correlated. A comparison between the two measures revealed that the independent variables assessed in the study showed equivalent relationships

to both measures of ESP performance. However, the use of Signal Detection Analysis (P(A) & β) did reveal the relationship between "response bias" and "concentration". This relationship would not have been revealed if the more standard ESP performance measure, ESP score, had been the only measure used. Perhaps future studies using the Signal Detection Analysis will provide us with more substantial evidence to determine the merits of this analysis in ESP research.

APPENDIX A

MEASURES OF SENSITIVITY AND RESPONSE BIAS

Signal-detection theory provides us with the method of assessing sensitivity (P(A)) and response bias (β).

Measure of Sensitivity, P(A) (Green & Swets, 1966). Sensitivity can be ascertained by the calculation of the quantity, P(A). This quantity is determined with the use of Receiver-Operating-Characteristic or ROC curve. The ROC curve is constructed by plotting the Ss hit rate against their corresponding false alarm rate. The proportion of total area which lies beneath the curve a value of P(A) is a direct index af the observer's ability to distinguish signal from noise events. The larger this value is the more sensitive is the observer's ability to distinguish.

In the case of a rating scale task the value of P(A) can be found from the following formula:

$$P(A) = \frac{\left[P(S/s)_1 \times P(S/n)_1\right] + }{\left[P(S/s)_1 + P(S/s)_2\right] \times \left[P(S/n)_2 - P(S/n)_1\right]}$$
$$\left[P(S/s)_{n-1} + P(S/s)_n\right] \times \left[P(S/n)_n - P(S/n)_{n-1}\right]$$

over 2

Where   P(A)   = sensitivity

          P(S/s)   = hit rate

          P(S/n)   = false alarm rate

          n   = rating category (there are
                     6 rating categories in this
                     task)

          1   = rating category 1

          2   = rating category 2

Response Bias, β (Green & Swets, 1966). Just as
it is possible from an ROC curve to find P(A), so can the
curve be used to find β. This value gives us a convenient
measure of response bias; if an observer gives β = 1, he is
unbiased, if β > 1 the observer has adopted a strict or
cautious criteria and is bias toward giving a noise
response, if β < 1 the observer has adopted a lax criteria
and is bias toward giving a signal response.

APPENDIX B

RELAXATION - AROUSAL QUESTIONNAIRE (1)

NAME: _____

DIRECTIONS: Please indicate your degree of relaxation at this moment by circling the appropriate number. Note that "1" means extremely tense or aroused, while "7" means you are extremely relaxed.

```
     1 ·       2         3        4        5.       6        7 .
     |---------|---------|---------|---------|---------|---------|
 extremely  fairly  slightly          slightly   fairly  extremely
   tense     tense    tense            relaxed    relaxed  relaxed
 (aroused)(aroused)(aroused)
```

APPENDIX C

RELAXATION - AROUSAL QUESTIONNAIRE (2)

NAME: _____

DIRECTIONS: Please indicate your <u>degree of relaxation</u>
<u>during the ESP test</u> by circling the
appropriate number. Note that "1" means
extremely tense or aroused, while "7" means
you are extremely relaxed.

```
        1         2         3         4         5         6         7
        |---------|---------|---------|---------|---------|---------|
   extremely   fairly   slightly          slightly  fairly  extremely
     tense      tense     tense            relaxed  relaxed   relaxed
   (aroused) (aroused) (aroused)
```

APPENDIX D

RELAXATION - AROUSAL QUESTIONNAIRE (3)

NAME: _____

DIRECTIONS: Please indicate your degree of <u>relaxation</u>
<u>at this moment</u> by circling the appropriate
number. Note that "1" means extremely tense
or aroused, while "7" means you are extremely
relaxed.

```
      1         2         3         4         5         6        7
      ├─────────┼─────────┼─────────┼─────────┼─────────┼────────┤
  extremely  fairly   slightly            slightly   fairly   extremely
    tense     tense     tense              relaxed   relaxed  relaxed
  (aroused)(aroused)(aroused)
```

APPENDIX E

STATE ANXIETY SCALE (1)

NAME: _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you _feel_ right now, that is, _at this moment_. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best. Circles from left to right correspond to:

Not at all; Somewhat; Moderately so; and Very much so.

1. I feel calm 0   0   0   0

2. I feel secure 0   0   0   0

3. I am tense 0   0   0   0

4. I am regretful 0   0   0   0

5. I feel at ease 0   0   0   0

6. I feel upset 0   0   0   0

7. I am presently worrying over possible misfortunes 0   0   0   0

8. I feel rested 0   0   0   0

9. I feel anxious 0   0   0   0

10. I feel comfortable 0   0   0   0

11. I feel self-confident 0   0   0   0

12. I feel nervous 0   0   0   0

13. I am jittery 0   0   0   0

14. I feel "high strung" 0   0   0   0
15. I am relaxed 0   0   0   0
16. I feel content 0   0   0   0
17. I am worried 0   0   0   0
18. I feel over-excited and rattled 0   0   0   0
19. I feel joyful 0   0   0   0
20. I feel pleasant 0   0   0   0
21. I feel unhappy 0   0   0   0

APPENDIX F

STATE ANXIETY SCALE (2)

NAME: _____.

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you <u>felt during the ESP session.</u> There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your feelings best. Circles from left to right correspond to:

Not at all; Somewhat; Moderately so; and Very much so.

1. I feel calm 0   0   0   0

2. I feel secure 0   0   0   0

3. I am tense 0   0   0   0

4. I am regretful 0   0   0   0

5. I feel at ease 0   0   0   0

6. I feel upset 0   0   0   ⁖0

7. I am presently worrying over possible
   misfortunes 0   0   0   0

8. I feel rested 0   0   0   0

9. I feel anxious 0   0   0   0

10. I feel comfortable 0   0   0   0

11. I feel self-confident 0   0   0   0

12. I feel nervous 0   0   0   0

13. I am jittery 0   0   0   0

14. I feel "high strung" 0   0   0   0

15. I am relaxed 0   0   0   0

16. I feel content 0   0   0   0

17. I am worried 0   0   0   0

18. I feel over-excited and rattled 0   0   0   0

19. I feel joyful 0   0   0   0

20. I feel pleasant 0   0   0   0

21. I feel unhappy 0   0   0   0

APPENDIX G

STATE ANXIETY SCALE (3)

NAME: _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best. Circles from left to right correspond to:

Not at all; Somewhat; Moderately so; and Very much so.

1.	I feel calm	O	O	O	O
2.	I feel secure	O	O	O	O
3.	I am tense	O	O	O	O
4.	I am regretful	O	O	O	O
5.	I feel at ease	O	O	O	O
6.	I feel upset	O	O	O	O
7.	I am presently worrying over possible misfortunes	O	O	O	O
8.	I feel rested	O	O	O	O
9.	I feel anxious	O	O	O	O
10.	I feel comfortable	O	O	O	O
11.	I feel self-confident	O	O	O	O
12.	I feel nervous	O	O	O	O
13.	I am jittery	O	O	O	O

14. I feel "high strung" 0   0   0   0

15. I am relaxed 0   0   0   0

16. I feel content 0   0   0   0

17. I am worried 0   0   0   0

18. I feel over-excited and rattled 0   0   0   0

19. I feel joyful 0   0   0   0

20. I feel pleasant 0   0   0   0

21. I feel unhappy 0   0   0   0

APPENDIX H

A SHORT FORM OF THE MOOD
ADJECTIVE CHECK LIST

NAME: _____

DIRECTIONS: Each of the following words describes feelings
or mood. Please use the list to describe your
feelings during the ESP test. If the word
definitely describes how you felt, circle the
double check (vv) to the right of the word.

For example:

     If the word is relaxed and you
definitely felt relaxed during the ESP test,
circle the vv as follows:

relaxed (vv) v ? no.   (This means you
                         definitely felt relaxed
                         during the ESP test.)

     If the word only slightly applies to
your feelings, circle the single check v as
follows:

relaxed vv (v) ? no.   (This means you felt
                         slightly relaxed during
                         the ESP test.)

     If the word is not clear to you or you
cannot decide whether or not it applies to
your feelings, circle the question mark as
follows:

relaxed vv v (?) no.   (This means you cannot
                         decide whether you were
                         relaxed.)

     If you definitely decide the word does
not apply to your feelings during the ESP test
circle the no as follows:

relaxed vv v ? (no)   (This means you were
                         definitely not relaxed
                         during the ESP test.)

Work rapidly. Your first reaction is best. Work down the first column, then go to the next. Please mark all words. This should take only a few minutes. Please begin.

angry vv v ? no	kindly vv v ? no
clutched up vv v ? no	sad vv v ? no
carefree vv v ? no	skeptical vv v ? no
elated vv v ? no	egotistic vv v ? no
concentrating vv v ? no	energetic vv v ? no
drowsy vv v ? no	rebellious vv v ? no
affectionate vv v ? no	jittery vv v ? no
regretful vv v ? no	witty vv v ? no
dubious vv v ? no	pleased vv v ? no
boastful vv v ? no	intent vv v ? no
active vv v ? no	tired vv v ? no
defiant vv v ? no	warmhearted vv v ? no
playful vv v ? no	sorry vv v ? no
overjoyed vv v ? no	suspicious vv v ? no
engaged in vv v ? no thought	self-centered vv v ? no
sluggish vv v ? no	vigorous vv v ? no
aroused vv v ? no	relaxed vv v ? no

APPENDIX I

SHEEP-GOAT QUESTIONNAIRE

NAME: _____

1. Have you ever come to know in advance that you are going to receive a particular letter on a particular day? Circle the answer you feel most appropriate.

    YES   NO

2. Have you ever come to know in advance that someone whom you have not thought of for years is going to call on you? Circle the answer you feel most appropriate.

    YES   NO

3. Have you ever had a dream which later came true? Circle the answer you feel most appropriate.

    YES   NO

4. Are you consistently lucky at whatever you do? Circle the answer you feel most appropriate.

    YES   NO

5. Have you ever suspected that a person will fall sick or meet with an accident or die and this actually happened? Circle the answer you feel most appropriate.

    YES   NO

6. Have you ever tried in a card game or playing with dice to score in a definite way, i.e., expecting to get one, two, or three to appear and succeeded? Circle the answer you feel most appropriate.

    YES   NO

7. If you have observed some of the above incidents coming true, please mark any of the reasons given below which you think is correct.

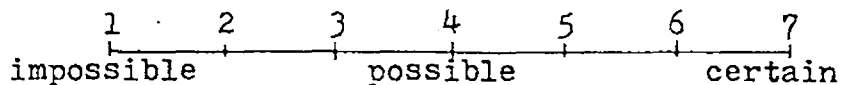   Mere chance or luck   Coincidence   ESP

8. Do you believe in the theoretical possibility of ESP? Circle the number which best represents how strongly you believe in ESP. Note that "1" means no belief at all (impossible) while "7" means you are certain ESP exists.

```
    1    2    3    4    5    6    7
    |----+----+----+----+----+----|
  impossible      possible      certain
```
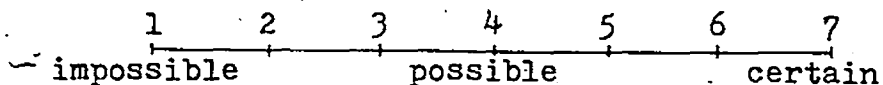
9. Do you believe that ESP can be demonstrated under the conditions of this experiment? Circle the number which best represents how strongly you believe that ESP can be demonstrated. Note that "1" means no belief at all (impossible) while "7" means you are certain that ESP will be demonstrated.

```
    1    2    3    4    5    6    7
    |----+----+----+----+----+----|
  impossible      possible      certain
```
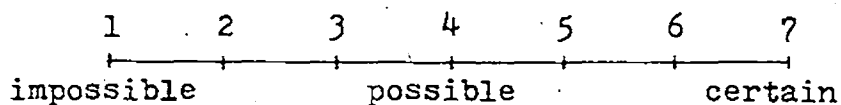
10. Do you believe that you have ESP? Circle the number which best represents how strongly you believe you have ESP. Note that "1" means you don't believe (impossible) you have ESP while "7" means you are convinced you have ESP.

```
    1    2    3    4    5    6    7
    |----+----+----+----+----+----|
  impossible      possible      certain
```

11. Do you believe that you can demonstrate ESP in this experiment? Circle the number which best represents how strongly you believe you can demonstrate ESP. Note that "1" means you don't believe (impossible) that you can demonstrate ESP in this experiment, while "7" means you are convinced.

```
    1    2    3    4    5    6    7
    |----+----+----+----+----+----|
  impossible      possible      certain
```
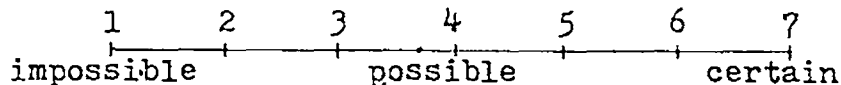
12. If some people, in this experiment, get only chance scores, some others still less, and some others more than chance, what reasons can you give for the people who score more than chance expectation? Circle the answer you feel most appropriate.

Mere chance or luck   Coincidence   ESP

13. If for example in this experiment you try and get more correct scores, and out of the 100 trials you score 70 to 80 as correct, what reasons would you give for this? Circle the answer you feel most appropriate.

   Mere chance or luck   Coincidence   ESP

14. In this experiment, how do you believe you will score? Circle the answer you feel-most appropriate.

   Below chance   At chance   Above chance

APPENDIX J

POSITIVE-NEGATIVE AFFECT QUESTIONNAIRE

NAME: _____

DIRECTIONS: Please answer the following questions by circling the number which best represents how you feel. There are no right or wrong answers and we are interested in your honest answers.

1. How would you describe your interest in this experiment before the ESP test started?

1	2	3	4
not at all interested	slightly interested	fairly interested	extremely interested

2. How would you describe your interest in the experiment during the ESP test?

1	2	3	4
not at all interested	slightly interested	fairly interested	extremely interested

3. How would you describe your interest in this experiment, now?

1	2	3	4
not at all interested	slightly interested	fairly interested	extremely interested

4. How would you describe your enthusiasm about this experiment before the ESP test started?

1	2	3	4
not at all enthusiastic	slightly enthusiastic	fairly enthusiastic	extremely enthusiastic

5. How would you describe your enthusiasm about this experiment <u>during the ESP test</u>?

    1   2   3   4

  not at all   slightly   fairly   extremely
  enthusiastic enthusiastic enthusiastic enthusiastic

6. How would you describe your enthusiasm about this experiment <u>now</u>?

    1   2   3   4

  not at all   slightly   fairly   extremely
  enthusiastic enthusiastic enthusiastic enthusiastic

7. How would you describe your expectation of success on the ESP task, <u>before</u> the ESP test started?

    1   2   3   4

 very doubtful slightly cer- fairly cer- absolutely cer-
 ESP would   tain ESP   tain ESP tain ESP would
 occur   would occur would occur occur

8. How would you describe your expectation of success on the ESP task, <u>during</u> the ESP test?

    1   2   3   4

 very doubtful slightly cer- fairly cer- absolutely cer-
 ESP would   tain ESP   tain ESP tain ESP would
 occur   would occur would occur occur

9. How would you describe your expectation of success on the ESP task, <u>now</u>?

    1   2   3   4

 very doubtful slightly cer- fairly cer- absolutely cer-
 ESP would.   tain ESP   tain ESP tain ESP would
 occur   would occur would occur occur

APPENDIX K

EMOTIONAL CONTENT

NAME: _____

DIRECTIONS: You will see a series of 30 slides. Please indicate your feelings with regard to the emotional content of the slide. Do so by using one of the numbers from the following scale: 1 = no emotional content, 2 = slight degree of emotional content, 3 = fair degree of emotional content, 4 = high degree of emotional content.

1. ____		16. ____
2. ____		17. ____
3. ____		18. ____
4. ____		19. ____
5. ____		20. ____
6. ____		21. ____
7. ____		22. ____
8. ____		23. ____
9. ____		24. ____
10. ____		25. ____
11. ____		26. ____
12. ____		27. ____
13. ____		28. ____
14. ____		29. ____
15. ____		30. ____

MEAN RATINGS OF DEGREE OF EMOTIONAL CONTENT FOR THE 30 SLIDES

Slide no.	Mean Rating	Slide no.	Mean Rating
1.	2.25	16.	1.50
2.	2.25	17.	1.00**
3.	2.00	18.	1.25
4.	4.00*	19.	1.00**
5.	1.75	20.	1.00**
6.	2.75	21.	1.25
7.	3.50*	22.	1.25
8.	2.00	23.	1.25
9.	2.00	24.	1.50
10.	3.50*	25.	1.00**
11.	2.25	26.	1.50
12.	3.25	27.	1.75
13.	3.75*	28.	1.25
14.	3.75*	29.	1.00**
15.	3.25	30.	1.25

Note. * slides chosen for emotional target stimuli
        ** slides chosen for non-emotional target stimuli

APPENDIX L

ANSWER SHEET

NAME: _____

DIRECTIONS: When told by the experimenter to "BEGIN" you
will attempt to receive information to deter-
mine whether a <u>slide is being shown</u> or a
<u>blank slide is being shown</u>. You will be
given 10 seconds to do this. When the
experimenter says to "MARK DOWN" your answer,
you will do so in accordance with the following
scale:

1	2	3	4	5	6
certain slide is being shown	probable that slide is being shown	possible that slide is being shown	possible that blank slide is being shown	probable that blank slide is being shown	certain blank slide is being shown

    You will be given 10 sec. to mark down your answer.
Could you please make full use of all the rating categories
provided. Thank-you.

1. ____   11. ____   21. ____   31. ____   41. ____

2. ____   12. ____   22. ____   32. ____   42. ____

3. ____   13. ____   23. ____   33. ____   43. ____

4. ____   14. ____   24. ____   34. ____   44. ____

5. ____   15. ____   25. ____   35. ____   45. ____

6. ____   16. ____   26. ____   36. ____   46. ____

7. ____   17. ____   27. ____   37. ____   47. ____

8. ____   18. ____   28. ____   38. ____   48. ____

9. ____   19. ____   29. ____   39. ____   49. ____

10. ____   20. ____   30. ____   40. ____   50. ____

5 minute break

51. ____   61. ____   71. ____   81. ____   91. ____

52. ____   62. ____   72. ____   82. ____   92. ____

53. ____   63. ____   73. ____   83. ____   93. ____

54. ____   64. ____   74. ____   84. ____   94. ____

55. ____   65. ____   75. ____   85. ____   95. ____

56. ____   66. ____   76. ____   86. ____   96. ____

57. ____   67. ____   77. ____   87. ____   97. ____

58. ____   68. ____   78. ____   88. ____   98. ____

59. ____   69. ____   79. ____   89. ____   99. ____

60. ____   70. ____   80. ____   90. ____   100. ____

APPENDIX M

TRANSCRIPT OF TAPED MUSCULAR. AND MENTAL
RELAXATION PROCEDURE

The purpose of this tape is to induce a state of relaxation. Get as comfortable as you can, when you relax do not think about the instructions. Just follow them passively and automatically. Think of the various muscles and places of your body as I mention them. Relax your scalp. Relax your jaw. You can feel the muscles of these areas becoming more and more limp with each passing second.

Now relax the muscles of your neck. Relax your shoulders. Now make yourself perfectly comfortable. Take a deep breath; now let it out and relax your chest. Continue breathing regularly and deeply, regularly and deeply, regularly and deeply; and as you do, you will feel your chest becoming more and more relaxed. Now relax the muscles in the small of your back. Relax your hips. Now relax the muscles in your right thigh and your right leg and your foot all the way down to your toes. Wiggle your toes and relax your toes. Now relax the muscles in your left thigh and in your left leg and your left foot all the way down to the toes. Again, wiggle your toes and as you do you can feel them becoming more and more comfortable and relaxed.

You feel pleasantly relaxed and drowsy as you continue to listen to my voice. Just keep your thoughts on what I am saying. Continue breathing regularly and deeply, regularly and deeply, regularly and deeply. You are going to get much more relaxed and drowsy; but you will not let yourself fall asleep.

Now relax your shoulders again; let the muscles go completely limp. Relax your right arm and your right hand and the fingers of your hand. Relax the muscles of your left arm and of your left hand and fingers. Your arms are heavy, heavy, heavy, as lead. Your whole body feels heavy, heavier, and heavier. You feel relaxed and sleepy, relaxed and drowsy, and your breathing is slow and regular, slow and regular. Relax your whole body, relax it completely. Think over your body, and if there is any part of it that is not relaxed, direct your attention to it and relax that part of your body.

I shall now begin to count. At each count you will feel yourself becoming more deeply relaxed, deeper and deeper relaxation. You will not wake up until I tell you to do so. One. Relax deeper and deeper, Two. Relax deeper and deeper. Three. Relax deeper and deeper. Keep listening to my voice and relax deeper and deeper with each count. Four. Relax deeper and deeper. Five. Relax deeper and deeper. You are getting drowsy but do not let

yourself fall asleep. You will not fall asleep. Six.
Relax deeper and deeper. During the entire ESP task you
will remain relaxed. Even though you are trying to
determine if a picture is actually being sent you will
still be relaxed. You will maintain this relaxed state
throughout the entire 100 trials. Keep listening to my
voice; other sounds are not important. And relax deeper
and deeper. Seven. Relax deeper and deeper. Relax
deeper and deeper. Eight. Relax deeper and deeper. Nine.
Relax deeper and deeper with each count. Getting more and
more relaxed. More and more comfortable. Ten. Deeper
and deeper relaxed. Eleven. Relax more and more. Your
whole body is limp and comfortable. Twelve. Relax deeper
and deeper, listening to nothing but the sound of my voice.
Thirteen. Relax deeper and deeper. Fourteen. Relax
deeper and deeper with each count. You are doing very
well and relaxing very well. You will remain this relaxed
during the entire ESP task. Fifteen. Relax deeper and
deeper. Sixteen. Relax deeper and deeper with each count,
going deeper and deeper relaxed. Seventeen. Relax deeper
and deeper. Eighteen. Relax deeper and deeper. Nineteen.
Deeper and deeper relaxed. Twenty. Relax deeper and
deeper.

You are feeling comfortable, relaxed, thinking of
nothing, nothing but what I say, your eyes are closed,
comfortably closed, you are thinking of nothing, nothing

but what I am saying, your arms and legs feel heavy, your arms and legs are heavy and you are relaxed, relaxed, your whole body feels relaxed, your whole body feels relaxed, the muscles of your face, arms, and legs are relaxed, your whole body is comfortably relaxed.

Nothing will disturb you from this comfortable state of relaxation. I will repeat the instructions for the ESP test now, but this will not disturb you from your comfortable state of relaxation.

When the experimenter who is present in the room with you tells you to begin you will try to determine whether a slide is being shown or not. Remember if you believe a slide is being shown and you are <u>certain</u> of this, mark down a 1 on your answer sheet. If you believe it is <u>probable</u> that a slide is being shown then you mark down a 2. If you believe it is <u>possible</u> that a slide is being shown then you will mark down a 3. If you believe that it is <u>possible</u> that a blank slide is being shown mark down a 4. If you believe it is <u>probable</u> that a blank slide is being shown mark down a 5. If you believe for <u>certain</u> that it is a blank slide mark down a 6.

If you are confused please remember that the instructions are written at the top of the answer sheet which is in front of you. When you are told please read these instructions. Remember that the E present will tell you when to begin and when to mark down your response.

In the ESP test there will be 100 trials, after 50 trials
you will be given a 5 minute break, then the last 50
trials will be conducted. Throughout the entire ESP test
you will remain in a relaxed state. There will be a brief
break before the ESP test starts, so why don't you read
the instructions at the top of the answer sheet.

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