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PERCEPTUAL AUGMENTATION TECHNIQUES

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Client Private

(1)

CONTENTS

I OBJECTIVE

The purpose of the program is to determine the characteristics of those perceptual modalities through which individuals obtain information about their environment, wherein such information is not presented to any known sense.

The program is divided into two categories of investigation of approximately equal effort, applied research and basic research. The purpose of the applied research effort is to explore experimentally the potential for applications of perceptual abilities of interest, with special attention given to accuracy and reliability. The purpose of the basic research effort is to identify the characteristics of individuals possessing such abilities, and to identify neurophysiological correlates and basic mechanisms involved in such functioning.

II PROGRESS DURING THE REPORTING PERIOD

A. Applied Research

1. Remote Viewing

(a) Project Atlas Remote Viewing

A remote-viewing experiment has been carried out on a client-designated target of interest, a European R&D test facility. The experiment, carried out in three phases, had as its goal the determination of the utility of remote-viewing under operational conditions.

In Phase I, map coordinates were furnished to the experimenters, the only additional information provided being the designation of the target as an R&D test facility. The experimenters then carried out a remote viewing experiment with Subject 1* on a double-blind basis. The results of the experiment were turned over to client representatives for data evaluation.

Figure 1 shows the level of detail for a sample early effort at building layout, and Figure 2 shows the subject's first effort at drawing a gantry crane he observed, both results being obtained on a double-blind basis before exposure to client-held information. An artist's conception of the site as known to the client (but not to contract personnel) prior to the experiment is shown in Figure 3.

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*Numerical designations for subjects are discussed in Section B.

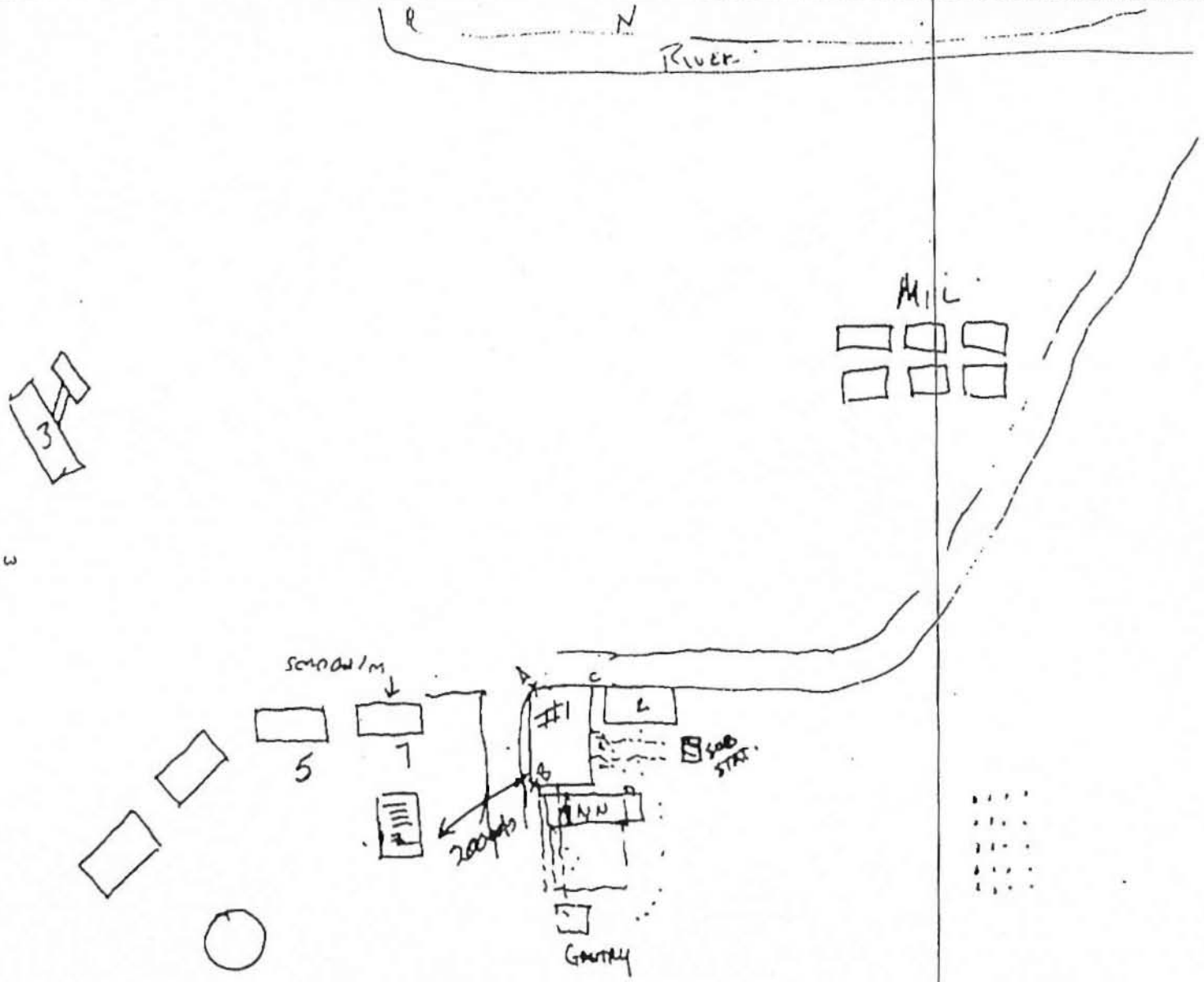

FIGURE 1 SUBJECT EFFORT AT BUILDING LAYOUT

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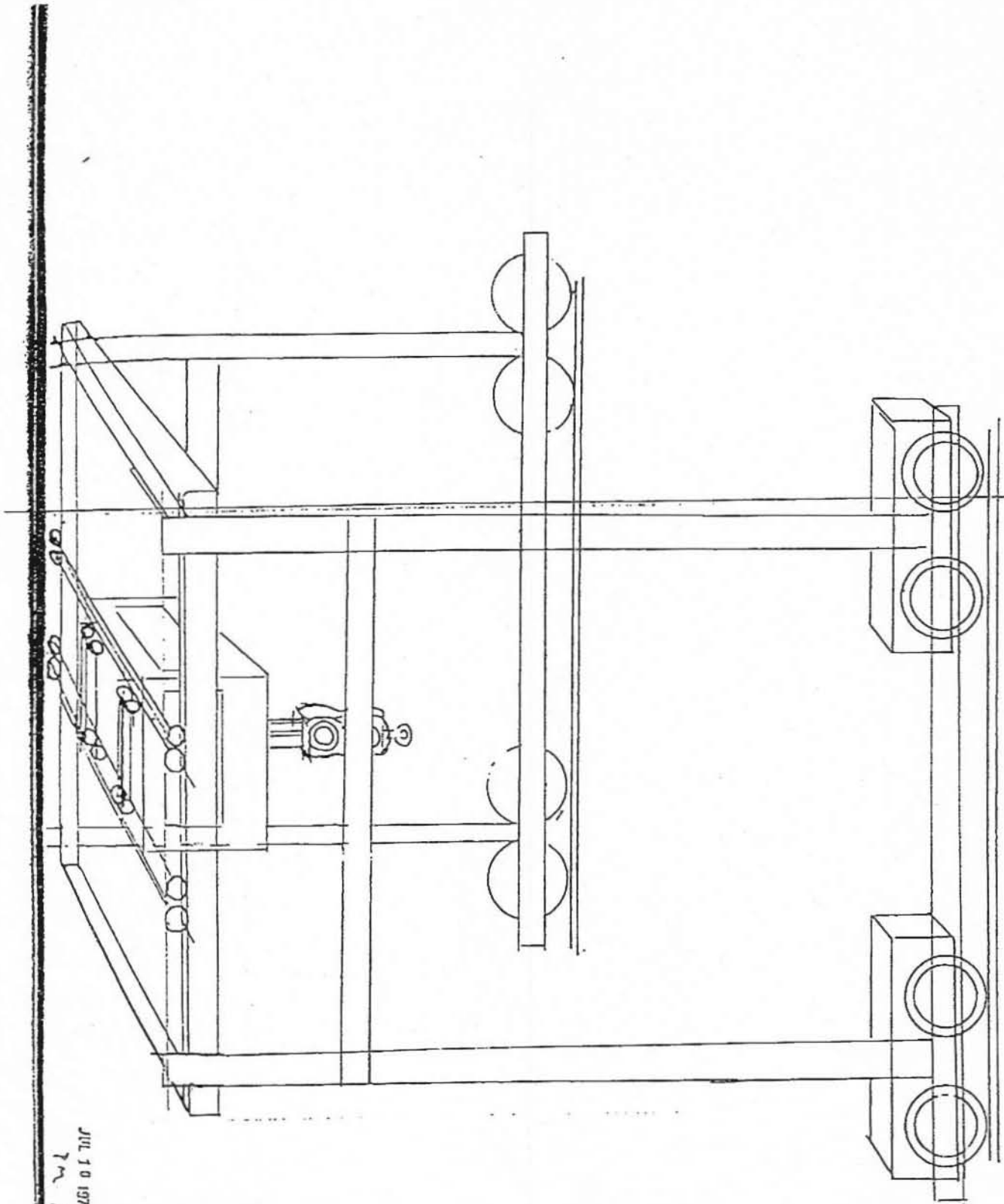

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FIGURE 2 SUBJECT EFFORT AT CRANE CONSTRUCTION

Were the results not promising, the experiment would have stopped at this point. The results were judged to be of sufficiently good quality, however, that Phase II was entered in which the subject was made witting by client representatives.

A second round of experimentation ensued with participation of client representatives. The Phase II effort was focussed on the generation of physical data which could be client-verified, providing a calibration in the process. The end of Phase II gradually evolved into the first part of Phase III, the generation of unverifiable data not available to the client, but of interest nonetheless. Evaluation of the data by the client is under way.

(b) Costa Rica Remote Viewing Experiment

Subjects 1 and 4 participated in a long-distance experiment involving a Central American target series. In this experiment, one of the experimenters (Dr. Puthoff) spent a week traveling through Costa Rica on a combination business/pleasure trip. That is all that was known to the subjects about the traveler's itinerary. The experiment called for Dr. Puthoff to keep a detailed record of his location and activities, including photographs, each day at 1330 PDT. Six daily responses were obtained from Subject 1, five from Subject 4.

The results were of high quality and are presently being evaluated in detail, containing as they did a large amount of material. Samples of that data are as follows.

Of the five daily responses obtained from Subject 4, two were in good agreement, two had elements in common but were not clear correspondences, and one was clearly a miss. In the first of the two reasonably good matches, Dr. Puthoff was driving in rugged terrain at the base of a volcano and the subject's response was "large bare table

mountain, jungle below, dark cool moist atmosphere," a reasonable correspondence both with regard to topography and ambience. In the second match the subject submitted that all she got was a "picture of Dr. Puthoff sitting in a beach chair by a pool," which was entirely correct. The transcript data will be examined further to determine fine structure, resolution, etc.

(c) Local Targets with Mid-Test Feedback

In this series of experiments, designed to give immediate data to experimenters, a subject is asked to take part in a remote viewing experiment under the following conditions.

The subject and two experimenters (one of whom was R.T.) are in a first floor laboratory in Building 30 at SRI. A second experimenter (H.P.) leaves the area and proceeds to a remote location of his choosing. None of the experimenters with the subject knew of the remote target location. H.P. and R.T. are in two-way radio communication via walkie-talkie (a) to provide the experimenter at the target location real-time data and (b) to give the subject immediate feedback after he has made his assessment of the target. By this means the subject has an opportunity to learn to separate real from imagined images. This is not considered to be a demonstration-of-ability test, but rather a training step on a gradient scale of ability. In many of these experiments we monitor physiological correlates as discussed in Section B.3 (b). (Nine of these experiments have been completed to date, seven with the measurements of physiological correlates.)

The following is a sample of an experiment with Subject 4. In this experiment we monitored physiological correlates of the remote viewing activity.

As is apparent in the following text, the subject initially had only a fragmentary picture of the remote site, but with what we judge to be a small amount of feedback, the subject was able to put images together into a correct description. Accompanying the verbal description presented below is a photograph of the actual scene at the remote location (Figure 4). The experimenter with the subject (R.T.) was, as always, kept ignorant of the target location to prevent guidance in the questioning. The capital letters signify walkie-talkie communication.

R.T.: It is now 12:35.

S-4: ....very strong diagonal....like a zigzag that goes this way, vertically.

R.T.: S-4's FIRST IMPRESSION IS OF A VERY STRONG DIAGONAL ZIGZAG THAT'S GOING VERTICALLY. OVER. (Talking on walkie talkie to H.P.)

H.P.: THERE IS A STRONG ZIGZAG AT MY PLACE, BUT IT IS NOT VERTICAL BUT RATHER HORIZONTAL; BUT IF SHE IS LOOKING FROM THE AIR, THAT'S EXACTLY WHAT IT WOULD LOOK LIKE. OVER.

R.T.: Can you tell what the zigzag is attached to? Whether it's part of a building or a fence on the ground?

R.T.: It's 12:41.

S-4: My head gets in the way now that he's said that it's horizontal. I usually think of a fence.

R.T.: Why don't you go up and look down and view the whole thing from above and see if you can get the whole gestalt of where he is.

S-4: .....definitely a nonvegetation...almost no vegetation around. It's mostly concrete and whatever that zigzag is--either water or steel--shiny, zigzag,..definitely shiny.

R.T.: 7267, THE ZIGZAG IS A SHINY THING WHETHER IT'S STEEL OR

S-4: Water..

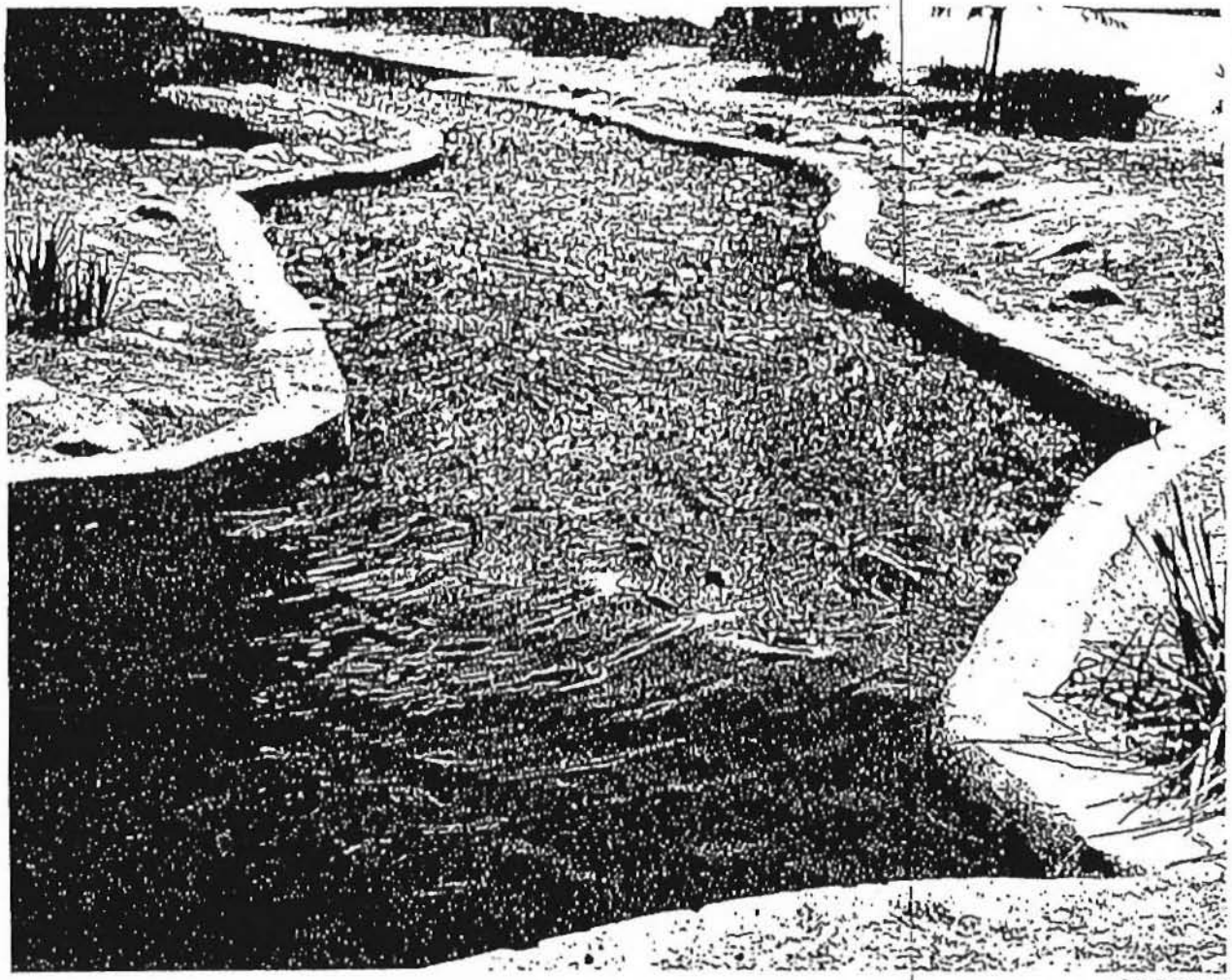

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FIGURE 4 ZIGZAG WATERWAY

R.T.: WATER, WE CAN'T TELL. IT'S SHINY AND THERE'S VERY LITTLE VEGETATION--NO VEGETATION AROUND....

S-4: Mostly concrete. . .

R.T.: IT'S MOSTLY CONCRETE...

S-4: He's standing on concrete....

R.T.: YOU'RE STANDING ON CONCRETE. OVER.

H.P.: IT CERTAINLY IS TRUE THAT THIS IS SHINY AND IN MY NEAR VICINITY IT IS BARREN AND CONCRETE OR CONCRETE-COLORED EARTH. SHE SAID THAT IT LOOKED LIKE STEEL OR WATER. CAN SHE MAKE THE DIFFERENTIATION BETWEEN THE TWO?

R.T.: He wants to know whether it looks more like steel or water.

S-4: It seems to have movement--that's why I would deduce that it's water.

R.T.: What if you try to look at the whole thing.

S-4: I'm trying to get an eagle's eye view. That's a waterworks.

R.T.: Why does it look like a waterworks? In what way?

S-4: There seems to be a man-made layout of channels and connections to conduct it.

R.T.: S-4 SEES MOVEMENT IN THE ZIGZAG THING, SO SHE THINKS THAT IT'S WATER, AND A KIND OF LAYOUT OF CHANNELS AS THOUGH IT WAS A MAN-MADE WATERWORKS WITH WATER RUNNING IN ZIGZAG CHANNELS. OVER.

H.P.: THAT IS PRECISELY CORRECT. IT IS A ZIGZAG MAN-MADE CHANNEL WITH CONCRETE SIDES. OVER.

S-4: I can't believe it.

The above is an excerpt from an early experiment, and is typical, rather a sample of exceptionally good quality. That experiment continued with four more site descriptions, three of which were of equal quality.

One experiment of this nature has been carried out with Subject 1, one with Subject 2, two with Subject 3, and five with Subject 4. A number of descriptions were essentially free of error and with no feedback other than verification following the remote viewer's description.

A complete analysis is to be carried out on these transcripts following more experimentation. To date it appears that the viewing is weak in the following areas: (a) perspective and dimension are often distorted (an 8-foot tower is taken to be 50 feet tall, a 20-foot separation between buildings may appear to be 100 feet, etc.), and (b) written material generally cannot be read.

(d) Local Targets with Azimuth Bearing

In two remote viewing experiments, the second of which was clearly correct from a descriptive standpoint, an effort was made to determine whether in driving the subject around the area it would be possible to determine the location of the target team by triangulation with a bearing compass. The triangulation lines were essentially uncorrelated with each other and with the target location, and therefore provided a null result.

B. Basic Research

In addition to the testing of individuals under conditions which yield data indicating the feasibility of the application of paranormal abilities to operational needs, 50 percent of the effort is devoted to:

(1) Identification of measurable characteristics possessed by gifted individuals (20%).

(2) Identification of neurophysiological correlates which relate to paranormal activities (20%).

(3) Identification of the nature of paranormal phenomena and energy (10%).

To meet these objectives four specific requirements must be fulfilled during the course of experimentation: (1) establish and apply criteria to differentiate between those for whom paranormal ability is considered to be functional and those for whom it is not; (2) obtain sufficient medical and psychological data to establish baseline profiles against which (a) one individual may be compared with another, and (b) an individual may be compared to himself at different times to determine whether paranormal functioning occurs in an altered neurophysiological state; (3) specific validation experiments must be conducted with sufficient control to ensure that all conventional communication paths are blocked, with outcomes sufficiently unambiguous to determine whether paranormal functioning occurred; (4) obtain neurophysiological data during experimentation to determine those correlates, if any, which relate to paranormal activity.

In the following paragraphs, each of these items is considered in turn and the progress to date reported. The milestone chart for the basic research program is shown in Table 1. The work is progressing in accordance with the schedule prepared for this program, and the remaining time and funds are sufficient to meet all program objectives.

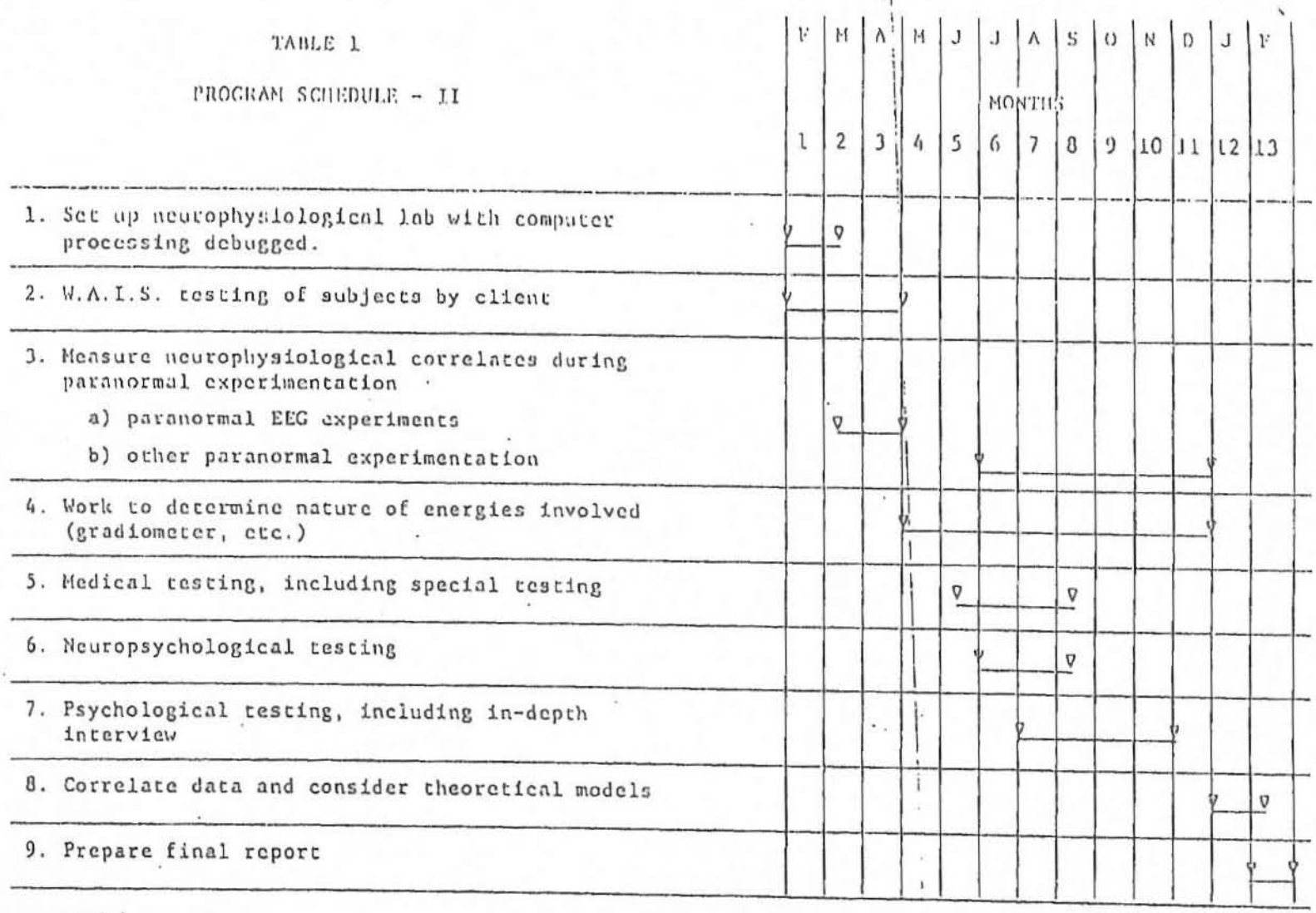
1. Criteria for the Determination of Gifted Individuals

One of the key issues in the program is the establishment of criteria capable of differentiating individuals who are apparently gifted in paranormal functioning from those who are not.

Three experimental paradigms were chosen to act as screening tests on the basis that these tests had been useful for such purposes prior to this program (in the sense that certain apparently gifted individuals did exceedingly well on at least one of the tests, whereas the results of unselected volunteers did not differ significantly from chance

TABLE 1

PROGRAM SCHEDULE - II



expectation). The tests are (a) remote viewing of natural targets, (b) reproduction of simple line drawings hidden from the subject but viewed by an experimenter, and (c) determination of the state of a four-state electronic random stimulus generator.

The first test constitutes a so-called "free-response" paradigm in which the subject originates freely about contents of his awareness; furthermore, the channel in general may involve both direct perception of the remote site and perception of the mental contents of an observer at the site. The second test is more constrained than the first in that the target information is more analytical or abstract, being associated with a graphical representation of an item of interest rather than the item itself. The third test is the most constrained in that the target is blind to all participants in the experiment and the subject's choice is precisely constrained. The details of these tests are given below.

For the purpose of screening, the criteria as to what constitutes a paranormal result was chosen arbitrarily, viz:

> For the purpose of screening a result is to be considered paranormal if the a priori probability for the occurrence of the result by chance, under the null hypothesis, is $p < 10^{-6}$.

Although the above requirement is exceedingly strict by usual psychophysiological standards, it is chosen here (a) because the controversial nature of the subject requires strict handling, and (b) in our work and elsewhere, a bimodal distribution has been observed empirically in which a subset of individuals participating in paranormal research produce results at a level of statistical significance $p \leq 10^{-6}$ in comparison with

the bulk of individuals who cluster about the mean as expected. Therefore, we base our criteria on an observable natural division into clearly functional and nonfunctional categories.

Six subjects have been chosen for the study to date, subjects 1, 2, and 3 considered gifted, subjects 4, 5, and 6 acting as learners or controls.*

Subject 1 qualifies as a gifted subject on the basis of remote viewing; subject 2 qualifies as gifted on the basis of the random generator test; subject 3 is tentatively classed as gifted in remote viewing, although not yet completing the screening series, based on client evaluation of highly successful remote-viewing experiments carried out for the client in the previous program, and also on the basis of meeting the $p < 10^{-6}$ criterion in experimentation at another laboratory.

Subject 5 (learner/control), a male, age 54, is paired with gifted subject 1, a male, age 55. Learner/control subject 6, a female, age 34, is by age, background, and temperament paired with gifted subject 2, a male, age 31. Learner subject 4 (female, age 53) and gifted subject 3 (male, age 41) are paired on the basis of artistic occupations (professional photographer and painter, respectively) and similar emotional and psychological makeup.

*Earlier in the program nine subjects were to be placed in three categories, three subjects each: gifted subjects, learners, and controls. However experience in the early part of the program indicated that (a) a best effort would require spending more time with fewer people, and (b) the distinction between learners and controls was arbitrary in comparison with the distinction between these categories and that of gifted subjects as defined above.

(a) Remote Viewing of Natural Targets

The first screening test is based on previous SRI research results which indicate that it is possible for a subject to describe randomly chosen geographical sites located several miles from the subject's position and demarcated by some appropriate means.

This experiment consists of a series of double-blind tests involving local targets in the San Francisco Bay area which can be documented by independent judging. Target locations within 30 minutes driving time from SRI are randomly chosen from a list of targets kept blind to subject and experimenters and used without replacement.

To begin an experiment, an experimenter is closeted with a subject at SRI to wait 30 minutes to begin a narrative description of the remote location. A second experimenter obtains a target location from the target pool and proceeds directly to the target without communicating with the subject or experimenter remaining behind. The second experimenter remains at the target site for an agreed-upon 30-minute period following the 30 minutes allotted for travel. During the observation period, the remote viewing subject is asked to describe his impressions of the target site into a tape recorder. A comparison is made when the experimenter returns.

Following a series of nine experiments, the results are subjected to independent judging on a blind basis by five SRI scientists not otherwise associated with the research. The judges are asked to blind match locations, independently visited, against typed manuscripts of tape-recorded narratives of the remote viewer. A given narrative can be assigned to more than one target location. A correct match requires that a transcript of a given date be associated with the target of that date. Probability calculations are on the basis of the a priori

probability of the obtained series of matches by chance, conservatively assuming assignment without replacement on the part of the judges.

As indicated in Report No. 1. Subject 1 has completed this series, obtaining a result significant at the $p = 8 \times 10^{-10}$ level. Experimentation is in progress with Subjects 2 and 4, two transcripts having been obtained from each to date.

(b) Line Drawings

A pool of 50 simple line drawings of everyday objects has been drawn, randomized, and placed in a secure location.

During experimentation, experimenters and subject are separated by either an experimenter or subject entering a shielded room so that from that time forward the subject is at all times visually, acoustically, and electrically shielded from personnel and material at the target location.

Following isolation a target is chosen by means of the universal randomization protocol technique described in Section 4 (a), used in this case to generate a two-digit number modulo 50. The subject's task is then to reproduce with pen on paper the line drawing now displayed at the target location.

Following a period of effort not to exceed half an hour, the subject may either pass (when he does not feel confident) or indicate he is ready to submit a drawing to the experimenters, in which case the drawing is collected by an experimenter before the subject is permitted to see the target. The experiment is then repeated with replacement until ten drawings have been obtained from the subject.

To obtain an independent evaluation of the correlation between target and response data, the experimenters submit the data for

judging on a blind basis by two SRI scientists not otherwise associated with the research. The judges are asked to match the response data with the corresponding target data (without replacement).

Such experimentation is presently in progress, a number of drawings having been obtained from several of the subjects but have not yet been submitted for judging.

(c) Four-State Electronic Random Stimulus Generator

The determination of the state of a four-state electronic random stimulus generator comprises the third screening test. The target is in the form of one of four art slides chosen randomly ($p = 1/4$) by an electronic random generator. The generator does not indicate its choice until the subject indicates his choice to the machine by pressing a button (see Figure 5). As soon as the subject indicates his choice, the target slide is illuminated to provide visual and auditory (bell if correct) feedback as to the correctness or incorrectness of his choice. Until that time both subject and experimenter remain ignorant of the machine's choice, so the experiment is of the double-blind type. Five legends at the top of the machine face are illuminated one at a time with increasing correct choices (6, 8, 10, ...) to provide additional reinforcement. The machine choice, subject choice, cumulative trial number, and cumulative hit number are recorded automatically on a printer. Following trial number 25, the machine must be reset manually by depressing a RESET button.

A methodological feature of the machine is that the choice of a target is not forced. That is, a subject may press a PASS button when he wishes not to guess, in which case the machine indicates what its choice was, and neither a hit nor a trial is scored by the machine, which then goes on to make its next selection. Thus, the subject does not have

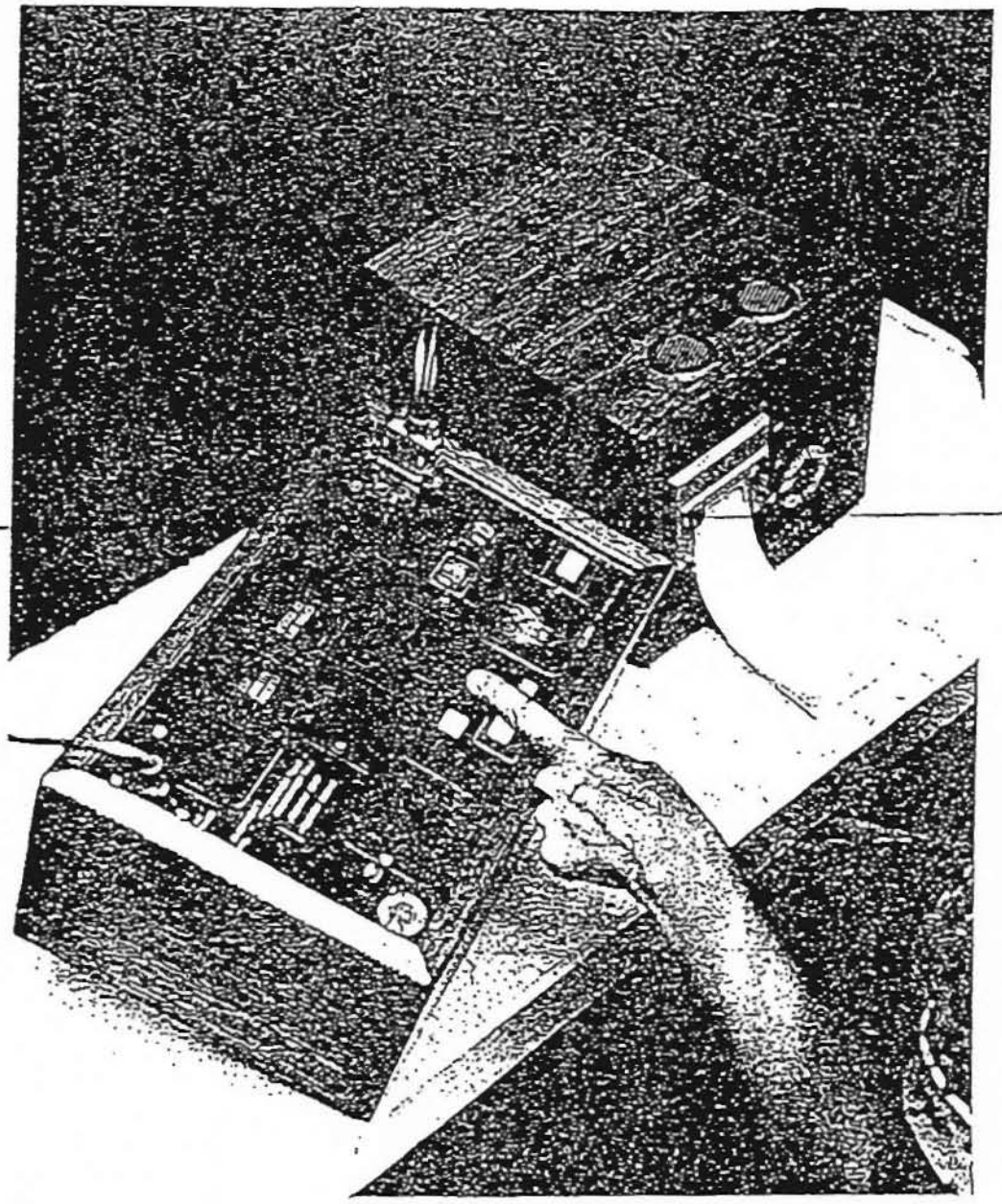


Figure 5. ESP Teaching Machine used in this experiment. An incorrect choice of target is indicated. Two of the five "encouragement lights" at the top of the machine are illuminated. The printer to the right of the machine records data on fan-fold paper tape.

to guess at targets when he does not feel that he has an idea as to which to choose.

Under the null hypothesis of random binomial choices with probability 1/4 and no learning, the probability of observing ≥k successes in n trials is approximated by the probability of a normal distribution value

$$\geq \left(k - \frac{n}{4} - \frac{1}{2}\right) // \sqrt{3n/16} \quad .$$

For the purpose of screening, each subject is required to complete 100 25-trial runs (i.e., a total of 2,500 trials). To date Subjects 1, 2, and 6 have completed this phase of the screening program, and their results are tabulated in Table 2. Subject 4 has completed 2,100 trials with mean scores of 25.71 ($p = 0.20$).

Table 2

SCREENING DATA: FOUR-STATE ELECTRONIC RANDOM STIMULUS GENERATOR

Subject	Mean Score/100 Trials Over 2,500 Trials	Binomial Probability
1	25.76	0.22
2	29.36	3×10^{-7}
6	25.40	0.33

On the basis of this test Subject 2, whose scores are plotted in Figure 6, qualifies as a gifted individual, having satisfied the criterion of producing a result whose a priori probability under the null hypothesis is $p < 10^{-6}$. Of further interest are this subject's personal observations of subjective experiences during the screening test, presented in Appendix 2.

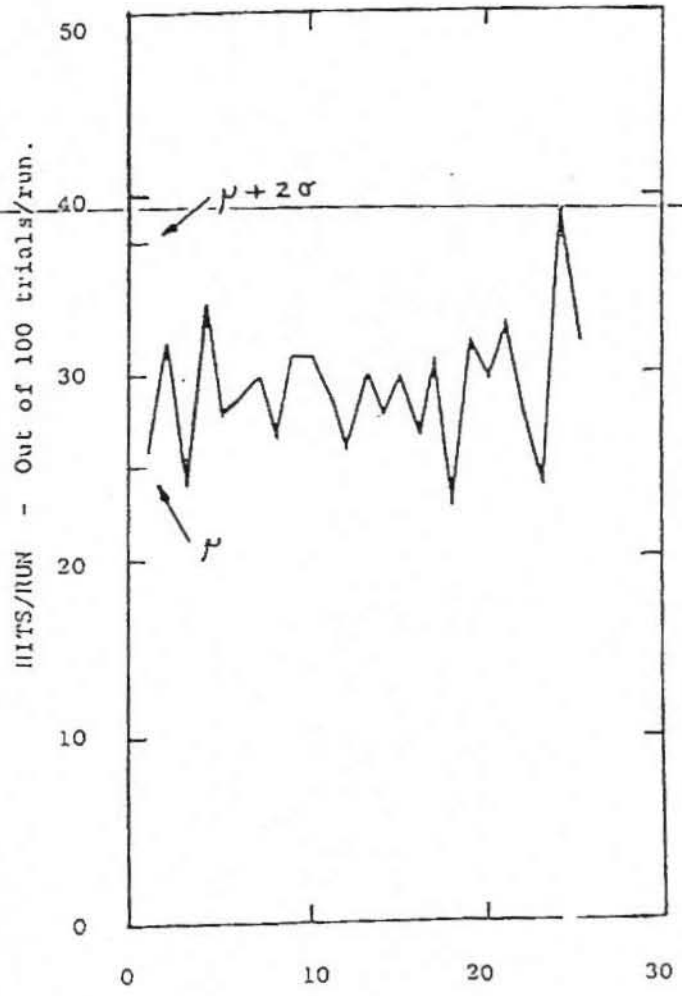


FIGURE 6 DATA SUMMARY FOR SUBJECT 2

2. Identification of Measurable Characteristics Possessed by Gifted Subjects (20%)

(a) Medical Evaluation

The medical evaluation of program participants has been assigned to the Palo Alto Medical Clinic. Coordination of the program is being handled by Dr. Robert Armbruster, Director of the Clinic's Department of Environmental Medicine. The Clinic, in turn, has subcontracted certain special tests to the Stanford Medical Center, Stanford University. One visual sensitivity test is being administered by the Bioengineering Group of the Electronics and Bioengineering Laboratory of SRI.

The testing procedures, outlined in Table 3, fall into seven categories:

(1) General physical examination, including complete medical and family history.

(2) Laboratory examinations, including SMA-12 panel blood chemistries, protein electrophoresis, blood lipid profile, urinalysis, serology, blood type and factor, pulmonary function screening, and 12-lead electrocardiogram.

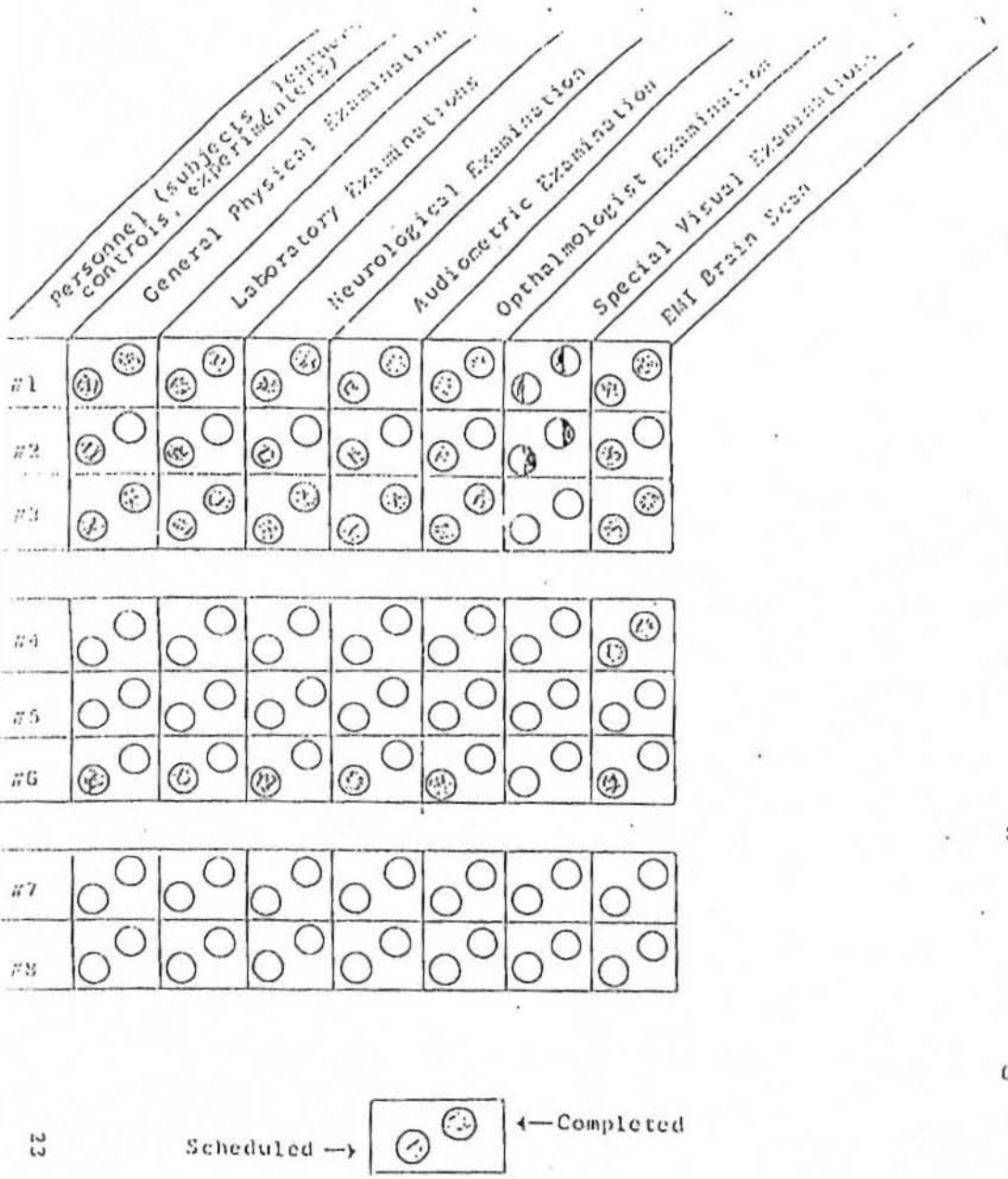
(3) Neurological examination, including comprehensive and electroencephalogram (sleeping and routine).

(4) Audiometric examination, including comprehensive, Bekesy bone conduction, speech discrimination, and impedance bridge test.

(5) Ophthalmologist examination, including comprehensive, card testing, peripheral field test, muscle test, dilation funduscope, and indirect ophthalmoscopic and fundus examination.

(6) Special visual examinations, including electroretinogram, dark adaptation test, and visual contrast sensitivity.

(7) EMI brain scan.



Personnel #1 - 3, subjects, #4 - 6, laboratory/control
7, 8, experimenters.

1. General Physical Examination
   - Complete medical
   - Family history

2. Laboratory Examinations
   - SMA-12 panel blood chemistries
   - Protein electrophoresis
   - Blood lipid profile
   - Urinalyses
   - Serology
   - Blood type and factor
   - Pulmonary function screening
   - Electrocardiogram 12-lead

3. Neurological Examination
   - Comprehensive
   - Electroencephalogram, sleeping and routine

4. Audiometric Examination
   - Comprehensive
   - Bekesy bone conduction
   - Speech discrimination
   - Impedance bridge test

5. Opthalmologist Examination
   - Comprehensive
   - Card testing
   - Peripheral field test
   - Muscle test
   - Dilation funduscope
   - Indirect opthalmoscopic and fundus examination

6. Special Visual Examinations
   - Electroretinogram (Stanford Med.)
   - Dark adaptation test (Stanford Med.)
   - Visual contrast sensitivity (SRI)

7. EMI Brain Scan

Ⓟ Palo Alto Medical Clinic Ⓢ Stanford Medical Center Ⓡ SRI

As indicated in Table 3, medical testing is currently in progress. To date the return information is sparse, having to be collated from several clinics before a comprehensive analysis can be completed. To provide an indication of the type of raw data that is to be collated, a small sample of data obtained on Subject 1 is presented in Appendix 3. As indicated, the EMI computerized brain scan reveals a slight enlargement of the entire right lateral ventricle, while the left appears normal in size. An asymmetry in alpha development between left and right hemispheres is also indicated. Also noted is some concern about the EKG suggesting a coronary artery problem. The significance of these factors for our interest will be developed under the direction of Dr. Armbruster and made available to the client as available.

(b) Psychological Evaluation

The psychological evaluation of program participants consists of both baseline personality evaluation, and of ongoing testing associated with daily experimentation. The collection of baseline data (e.g., in-depth interview, W.A.I.S., etc.) is for the purpose of identifying baseline characteristics possessed by gifted subjects. The ongoing testing associated with daily experimentation (e.g., Mood Adjective Checklists) is for the purpose of identifying psychological correlates of successful versus unsuccessful performance tasks.

(1) Baseline Data

The bulk of the baseline evaluation has been assigned to the Palo Alto Medical Clinic. Coordination of the program is being handled by Dr. J. E. Keenan, Chief Clinical Psychologist of the Department of Psychiatry.

The baseline evaluation, outlined in Table 4, consists of

(1) In-depth interviews, including objective events and subjective views relating to the discovery and enhancement of paranormal capacities; socioeconomic, cultural, familial, religious environment; outstanding peaks, traumas; values, motivation, interpersonal style.

(2) Wechsler Adult Intelligence Scale (W.A.I.S.).

(3) Minnesota Multiphase Personality Inventory (M.M.P.I.).

(4) Benton Visual Memory Test and Wechsler Memory Scale.

(5) Thematic Apperception Test (T.A.T.) and Rorschach projective tests.

(6) Bender Gestalt Test.

(7) Luscher color test.

(8) Strong Aptitude/Values Test.

(9) Cognitive Style Preference Test.

As indicated in Table 4, the psychological testing is well under way. There is of course, a considerable lag between testing and results. To date, only a partial analysis of data from Subject 1 is available. We present these data in Appendix 4 as a sample of the type of analysis that will become available.

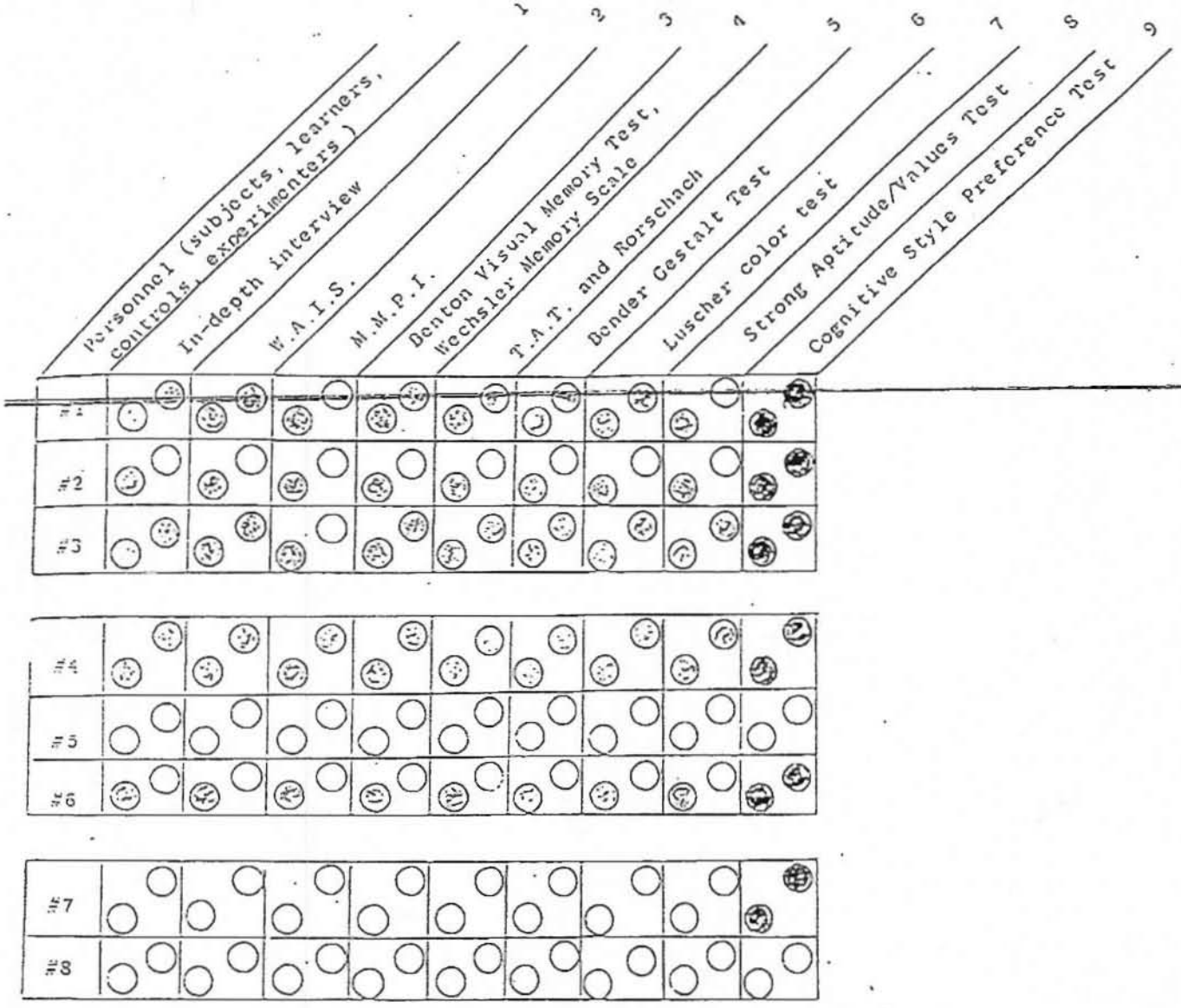
(2) Cognitive Style Preference Test

In connection with testing hypotheses associated with hemispheric specialization of the brain, Dr. Robert Ornstein of the Langley Porter Neuropsychiatric Institute, University of California, San Francisco, has been brought into the program as a consultant.

Table 4

PSYCHOLOGICAL EXAMINATION

Personnel #1 - 3, subjects;
#4 - 6 learners/controls; #7 - 8, experimenters.



(5) SRI (1) Palo Alto Medical Clinic

In his capacity as consultant, Dr. Ornstein has provided an instrument named the Cognitive Style Preference Test. This test was developed for use in differentiating between individuals preferring a structure-oriented cognitive style as compared with a verbally oriented cognitive style. For the purpose of the program, this instrument is administered to determine whether individuals exhibiting paranormal functioning prefer, as a group, one style of cognitive functioning predominantly as compared with individuals in a control group. The test is administered once to each individual. A sample of the test is included below.

Preliminary results indicate some preference for a verbally oriented cognitive style on the part of good subjects (Figure 7), but further data are required before any significance is to be attached to the results tabulated thus far.

Should a correlation of test results with paranormal functioning be found, it would be appropriate in later work to determine whether this test instrument would be useful as a screening device, i.e., to determine whether other individuals sharing the profile also exhibit paranormal functioning.

INSTRUCTIONS TO SUBJECT: COGNITIVE STYLE PREFERENCE TEST

Please do not turn over the pages until I ask you to do so. On each page of this booklet there are sets of three items arranged in rows. Two of them are alike or fit together in some way. Your task is to select which one is different and doesn't belong with the other two. The two columns on the first page are samples. There are three designs or shapes in each row. Each design has a word printed on it. In the first row of the first column all the words are the same. Most people would say that the first and second shapes go together and the third one doesn't belong. Would you agree? (If not, explain.) Mark the third one with an X then. In the second row most people would say that the first one is different and the last two go together. Do you agree? Then mark the first one with an X.

In the third row the shapes are all the same, but the words HORSE and SADDLE go together and the world FAULT doesn't belong. Do you agree? (If not, explain.) Mark the third one with an X.

Which would you pick as the odd one in the 4th row? [Color (2nd one)]

In the 5th row you could choose either a word that doesn't belong or a shape that doesn't belong. Which is the odd word? (TROUT.) Which is the odd shape? [the CIRCLE (DIME)] Either one of these answers is right. Mark either one of them.

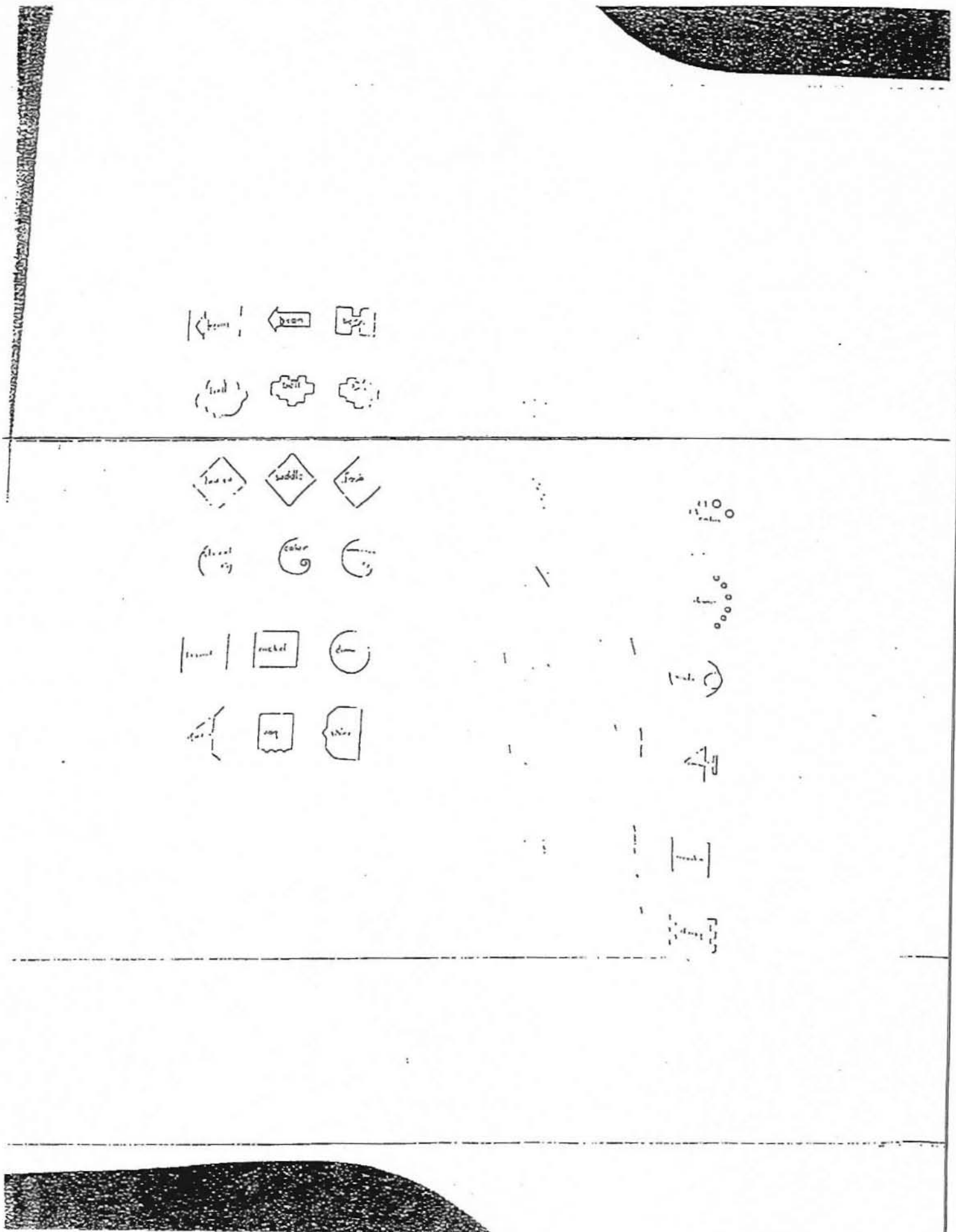
The last row also has two possible right answers. Which is the odd word? (SHIRT.) Which is the odd shape? [The second one (DOG)] Mark either one of them with an X.

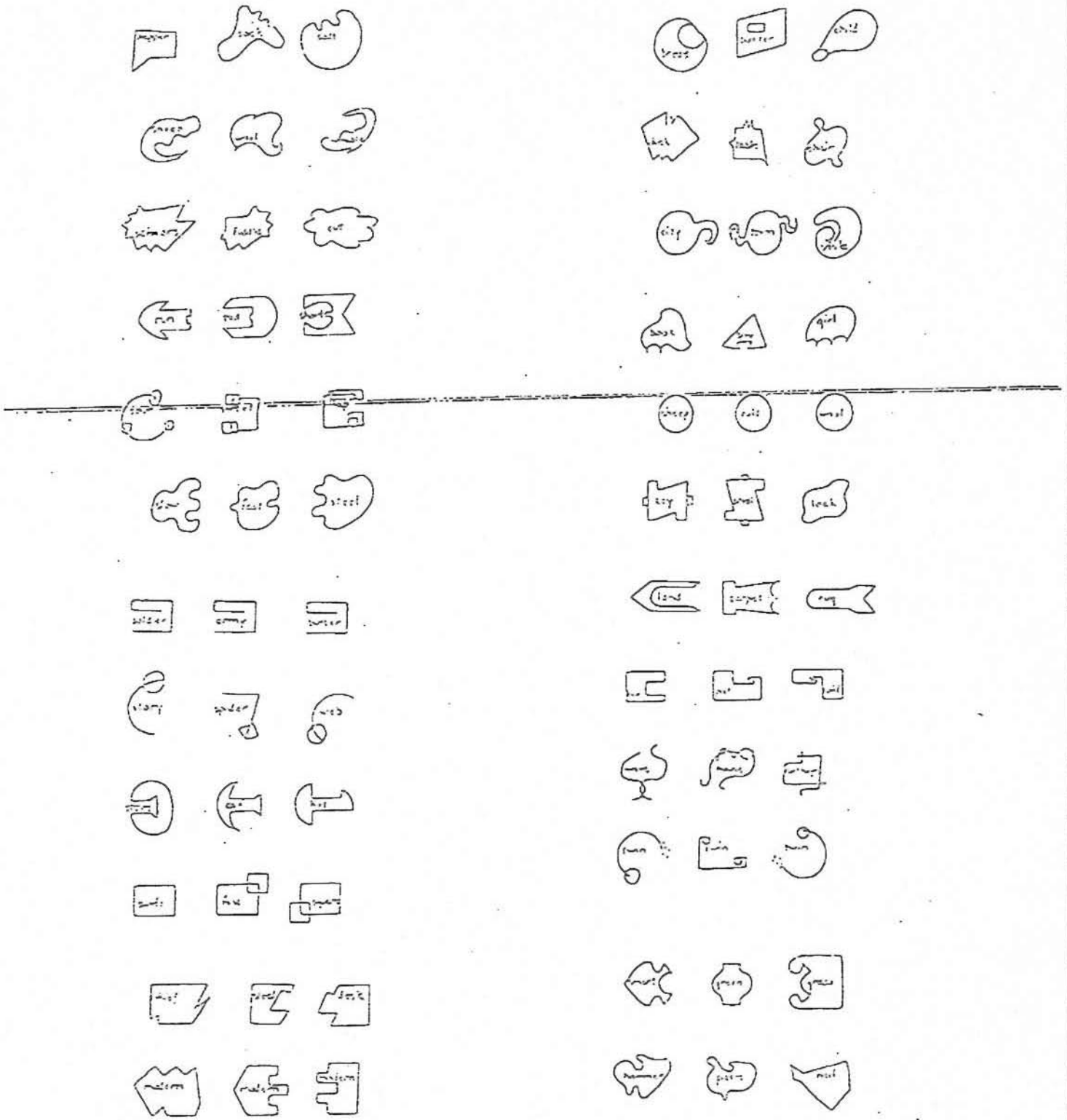
On some of these sets people find it easier or more natural to pick out the odd word, and one some they find it easier to pick out the odd shape. Either way is correct. We want you to make your selections whichever way seems most comfortable and natural to you. Mark only once in each row, and go as fast as you can. Any questions so far?

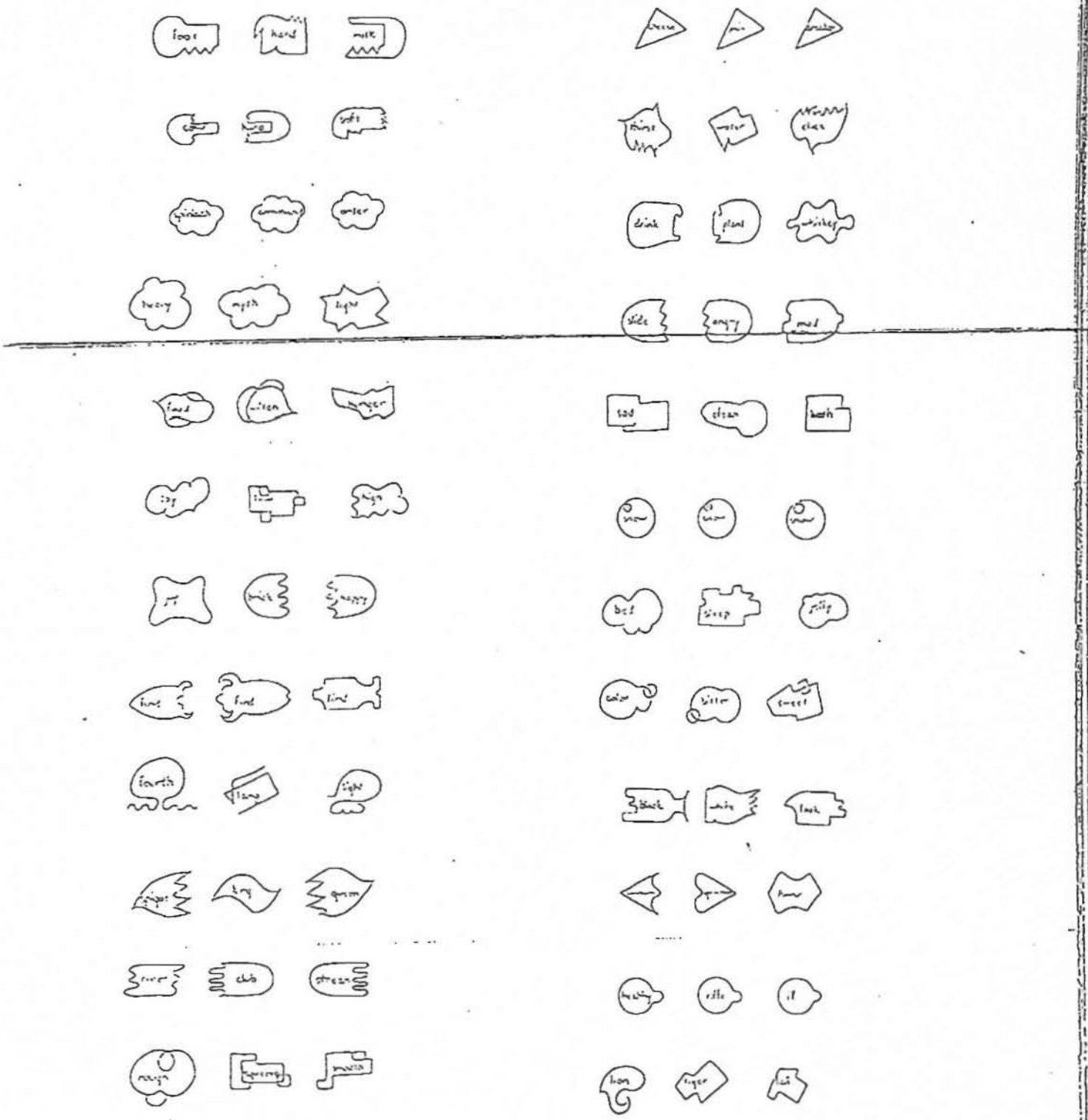
The second column has more samples. When I say begin, please mark an odd member in each row, and say "STOP" as soon as you finish this sample column. BEGIN.

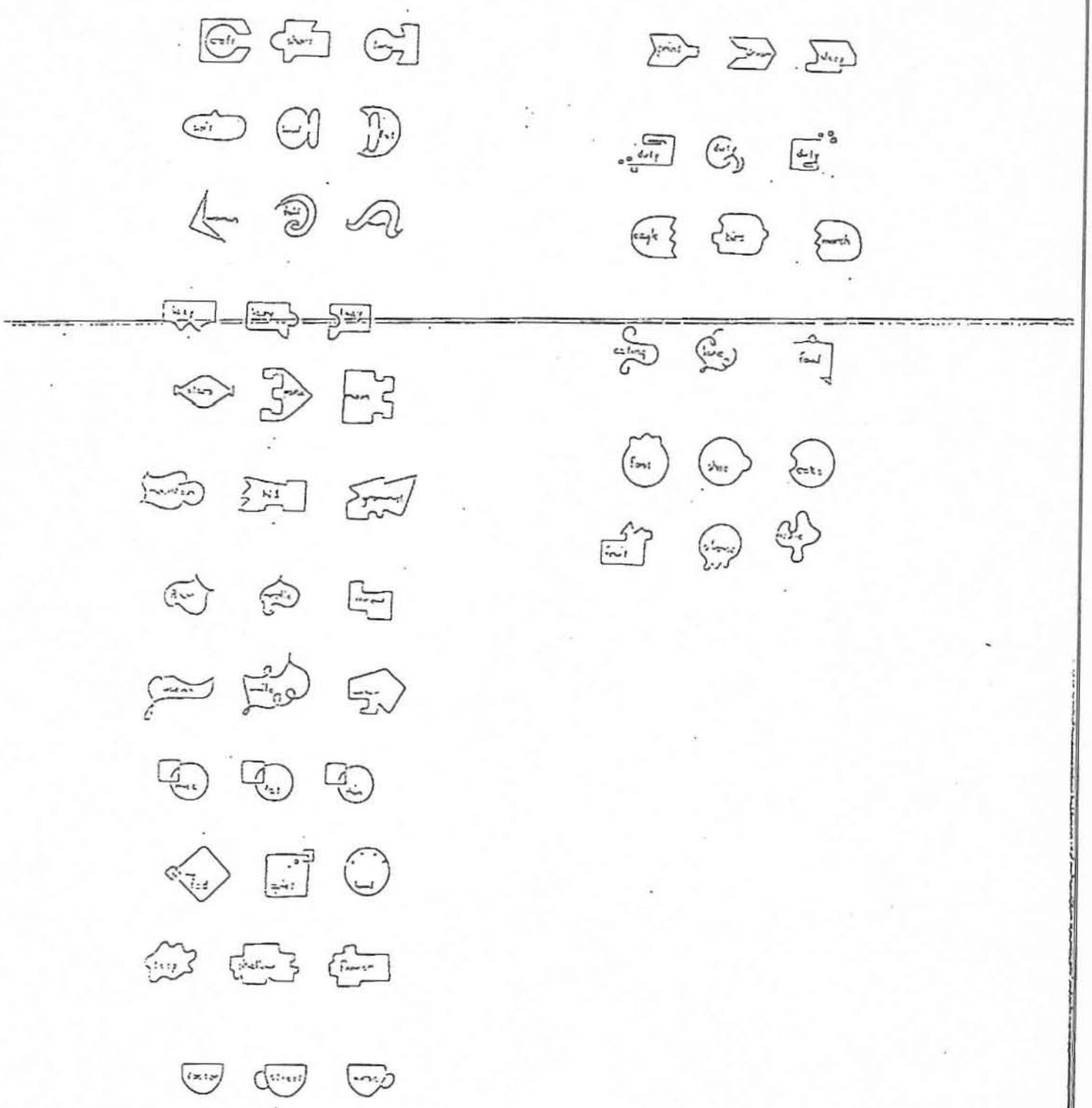
(Check forced choices--)

Any questions? Then when I say "BEGIN" turn over the next page. Work as <u>fast</u> as you can, and continue until you have finished the booklet, then say "STOP". Ready? BEGIN.









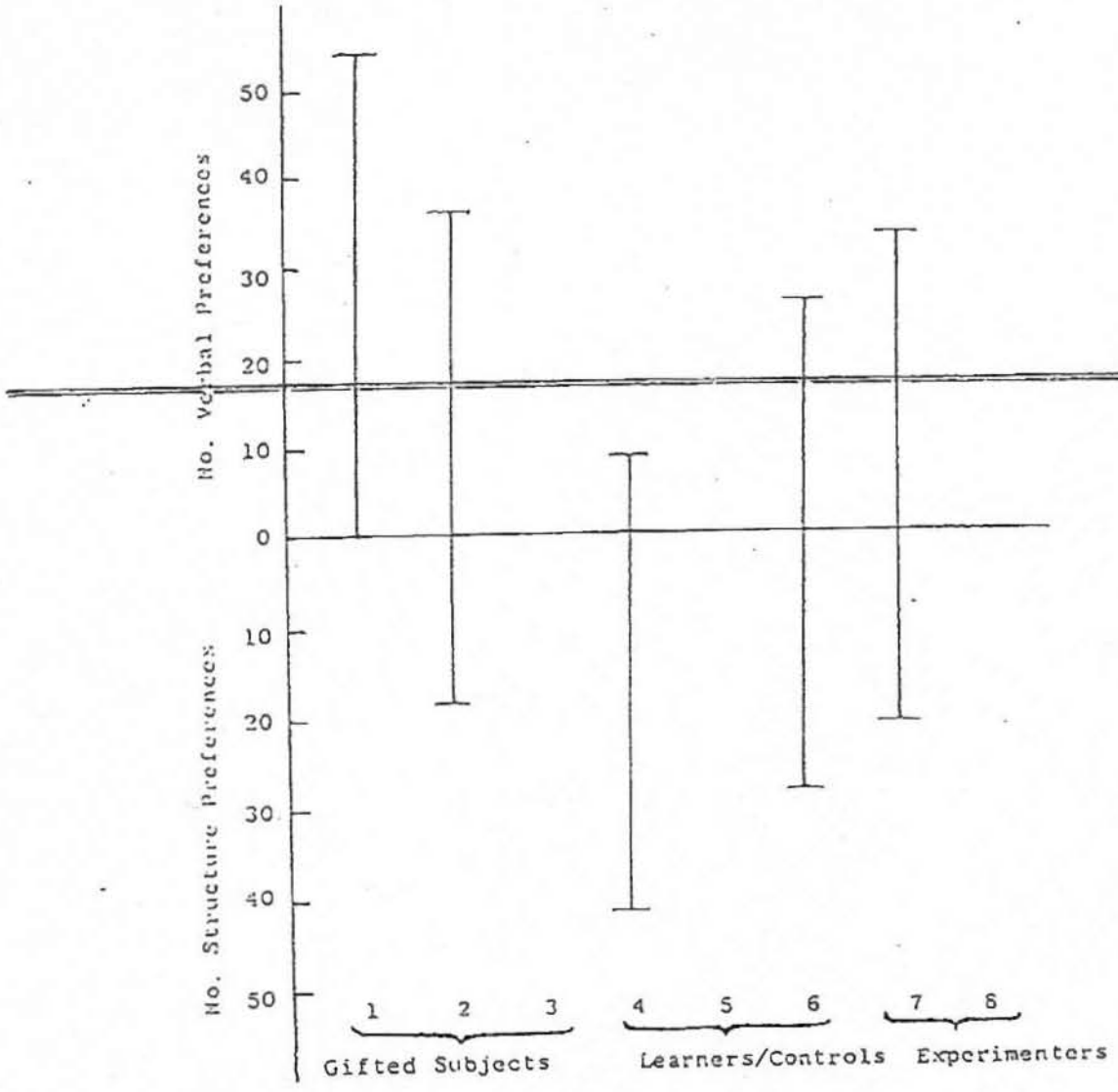


FIGURE 7 SUMMARY ON COGNITIVE STYLE PREFERENCE

(3) Mid-Testing (SRI-Administered)

Ongoing testing associated with daily experimentation is carried out to provide indicators as to the effects of mood and conceptualization on success in experimentation. Conclusions will be drawn in the final stage of project effort.

Test: Mood Adjective Checklist

Source: Psychology Department, Stanford University (Hypnosis Lab)

Purpose: The Mood Adjective Checklist is one of a number of pre-experiment instruments designed to provide a measure of a subject's feelings of the moment as he enters the experimental situation. The purpose is to determine whether measures of success in the experimental phase correlate with pre-experiment mood indicators.

MOOD ADJECTIVE CHECKLIST

Each of the words in the following list describes feelings or mood. Please use the list to describe your feelings at this moment. Work each word according to these instructions:

If the word definitely describes how you feel at the moment you read it, circle the double check (VV) to the right of the word. For example, if the word is calm and you are definitely feeling calm at the moment, circle the double check as follows:

calm	(VV)	v	?	no	(This means you definitely feel calm at this moment.)

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

calm	VV	(v)	?	no	(This means you feel slightly calm at this moment.)

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

calm	VV	v	(?)	no	(This means you cannot decide whether you are calm or not.)

If you clearly decide that the word does not apply to your feelings at this moment, circle the no as follows:

calm	VV	v	?	(no)	(This means you are sure you are not calm at this moment.

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

angry	vv	v	?	no	energetic	vv	v	?	no
concentrating	vv	v	?	no	playful	vv	v	?	no
drowsy	vv	v	?	no	suspicious	vv	v	?	no
affectionate	vv	v	?	no	startled	vv	v	?	no
apprehensive	vv	v	?	no	relaxed	vv	v	?	no
blue	vv	v	?	no	defiant	vv	v	?	no
boastful	vv	v	?	no	engaged in thought	vv	v	?	no
elated	vv	v	?	no					
active	vv	v	?	no	pleased	vv	v	?	no
nonchalant	vv	v	?	no	tired	vv	v	?	no
skeptical	vv	v	?	no	fearful	vv	v	?	no
shocked	vv	v	?	no	regretful	vv	v	?	no
calm	vv	v	?	no	egotistic	vv	v	?	no
bold	vv	v	?	no	overjoyed	vv	v	?	no
earnest	vv	v	?	no	vigorous	vv	v	?	no
sluggish	vv	v	?	no	witty	vv	v	?	no
forgiving	vv	v	?	no	serene	vv	v	?	no
clutched up	vv	v	?	no	rebellious	vv	v	?	no
lonely	vv	v	?	no	serious	vv	v	?	no
cocky	vv	v	?	no	warmhearted	vv	v	?	no
lighthearted	vv	v	?	no	insecure	vv	v	?	no
quiet	vv	v	?	no	self-centered	vv	v	?	no
					still	vv	v	?	no

Test: Semantic Differential Checklist

Source: SRI Urban and Social Systems Division

Purpose: The Semantic Differential Checklist is one of a number of pre-experiment instruments designed to provide a measure of subject conceptualization about an experiment in which he is about to participate. The purpose is to determine whether measures of success in the experiment correlate with pre-experiment conceptualization.

Semantic Differential Checklist

The purpose of this rating sheet is to obtain your candid reactions regarding the conditions surrounding the experiment.

For each numbered item you will find a concept to be judged. You are to rate each in order.

This is how you are to use the scales: If you feel that the concept is highly or closely related to one end of the scale, you should place your checkmark as follows;

impractical ✓ ___ ___ ___ ___ practical

impractical ___ ___ ___ ___ ✓ practical

If your feelings on the concept are neutral, place your checkmark in the middle space, etc.

Work at fairly high speed through this rating sheet. Do not puzzle over individual items. Give your first impressions, your immediate feelings about each item.

Conditions surrounding experiment

1. good ___ ___ ___ ___ ___ bad
2. unfriendly ___ ___ ___ ___ ___ friendly
3. stimulating ___ ___ ___ ___ ___ dull
4. positive ___ ___ ___ ___ ___ negative
5. unhelpful ___ ___ ___ ___ ___ helpful
6. right ___ ___ ___ ___ ___ wrong
7. uninteresting ___ ___ ___ ___ ___ interesting
8. unorganized ___ ___ ___ ___ ___ organized

	9. satisfying	___	___	___	___	___ disappointing
	10. unprepared	___	___	___	___	___ prepared

My involvement in experiment

	1. good	___	___	___	___	___ bad
	2. useless	___	___	___	___	___ valuable
	3. stimulating	___	___	___	___	___ dull
	4. positive	___	___	___	___	___ negative
	5. passive	___	___	___	___	___ active
	6. capable	___	___	___	___	___ incapable
	7. important	___	___	___	___	___ unimportant
	8. unsuccessful	___	___	___	___	___ successful
	9. prepared	___	___	___	___	___ unprepared
	10. impractical	___	___	___	___	___ practical

(c) Neuropsychological Evaluation

In addition to the measurement of the physiological components of the neurological system covered in the medical evaluation, a neuropsychological profile is being obtained by the administration of the Halstead-Reitan Neuropsychology Test Battery, which includes the Category Recognition Test, Tactual Performance Test, Halstead-Wepman Aphasia Screening Test, and other appropriate measures. This phase of the program is being handled by Dr. Donald Lim of the Palo Alto Veteran's Administration Hospital, who has personally consulted with Dr. Reitan on testing procedures and interpretation. The neuropsychological evaluation program is scheduled for the first half of September.

3. Identification of Neurophysiological Correlates Which Relate to Paranormal Activities (20%)

High on the list of priorities for the program is the identification of neurophysiological correlates accompanying paranormal activity. The purpose of this part of the study is twofold: (a) to obtain information about the neurophysiological state associated with paranormal activity in general, and (b) to obtain indicators which differentiate between correct and incorrect responses to a paranormally applied stimulus, so that an independently determined bias factor can be applied during the generation of data by the subject.

Two facilities are in use for the purposes described above. One is a standard EEG facility under the direction of Dr. Jerry Lukas, head of SRI's Sleep Studies program. This facility consists of two sound-isolated rooms with appropriate signal lead connections, an eight-channel polygraph for visual recording, and a magnetic tape/computer processing/printer readout which provides on-line processing of the polygraph data. In our configuration we obtain a hardcopy printout of 5-second

averages of eight channels of polygraph information 15 minutes following a 15 minute run. At present we monitor broad alpha (7-14 Hz) and beta (14-34 Hz) brainwave components from the left and right occipital regions, galvanic skin response, and two channels of plethysmograph data (blood volume and pulse height).

The second facility is a smaller semiportable, four-channel polygraph with a GSR channel, reflected-light plethysmograph indicating blood volume/pulse height, one channel of unfiltered EEG activity, and a fourth EEG channel with zero-crossing digital filtering. The last permits percent-time measurements in any band, with upper and lower band edge settings in 1-Hz increments.

Considerable data have been obtained with both facilities. The bulk of the data awaits further analysis which will occur at completion of various series under way. However, several results have been obtained which we describe below.

(a) Bilateral EEG Measurements--Remote Strobe Experiment

As discussed in Report No. 2, a variety of evidence from clinical and neurosurgical sources indicates that the two hemispheres of the human brain are specialized for different cognitive functions. The left hemisphere is predominantly involved in verbal and other analytic functioning, the right in spatial and other holistic processing.

In consultation with Dr. Robert Ornstein of the Langley Porter Neuropsychiatric Institute, an hypothesis was formed based on certain observed characteristics that paranormal functioning might involve right hemispheric specialization. To test this hypothesis, the EEG remote strobeflash experiment, discussed in the original proposal and in the paper attached to Report No. 1, was repeated with Subject 4 three

times in the sleep lab under the direction of Dr. Lukas with monitoring of right and left occipital regions. Each experiment consisted of twenty 15-second trials, with ten no-flash trials, and ten 16-Hz trials randomly intermixed. Reduction of alpha activity (arousal response) correlated with remote stimuli was observed as in previous experiments, but essentially only in the right hemisphere (average alpha reduction 16 percent in right hemisphere, 2 percent in left, during the 16-Hz trials as compared with the no-flash trials). The trial-to-trial variation is larger than in previous work, however, due to use of a wider-band filter for the alpha band, and therefore the system is being modified before further work.

(b) Physiological Correlates of Remote Viewing

In this series of experiments a subject takes part in a remote viewing protocol as described in Section A.1 (c) (Remote Viewing with Feedback). In this case, however, the subject is connected to the physiological recording instruments of the smaller semiportable four-channel polygraph described above. Baseline and experimental measures of the following observables are made: (1) galvanic skin response (GSR) is recorded using finger electrodes taped in place on second and fourth fingers; (2) blood volume/pulse height is recorded using a reflected-light plethysmograph; (3) unfiltered EEG is recorded from the right occipital region; (4) percent-time in alpha (8-12 Hz) is recorded on the fourth channel. The alpha filter is a sharp cutoff digital type with essentially zero-pass outside the prescribed bandpass limits.

During the course of an experiment, the subject is asked to describe his perceptions as to the nature of the remote target. His comments are tape-recorded and noted on the polygraph, along with the time. A correlation is then attempted between those descriptions which

are found to be uniquely correct and accurate, and the corresponding sections of polygraph recording.

In our investigations to date we have not found a strong correlation between the observed physiological states and the subjects' descriptions. Of the correlates being monitored, the one which seems the most promising is the unfiltered EEG. In our preliminary analysis of the data it appears that there is often an overall reduction in EEG power in the 20-second period just before a subject renders a correct description. Subsequent to this observation, we have learned that Ms. Janet Mitchell at the American Society for Psychical Research made similar observations in her work with Subject 3, also in remote viewing experiments. A sample chart record is shown in Figure 8. (Time runs from right to left.)

The traces, top to bottom, are the unfiltered EEG, blood volume/pulse height, GSR, and filtered (alpha) EEG. Protocol, verbal description, and photograph of the location accompanying this chart are given in Section A.1 (c).

Seven experiments of this type have been completed as a pilot study. Upon completion of the analysis of these data, any findings will be tested under rigorous no-feedback conditions.

4. Identification of the Nature of Paranormal Phenomena and Energy (10%)

This portion of the program is devoted to efforts to understand the nature and scope of paranormal phenomena, including investigation of the physical and psychological laws underlying the phenomena; determination of the manner and degree to which known processes are mediated by little understood or undiscovered mechanisms or energies, definition of the precise nature of the channels involved, etc.

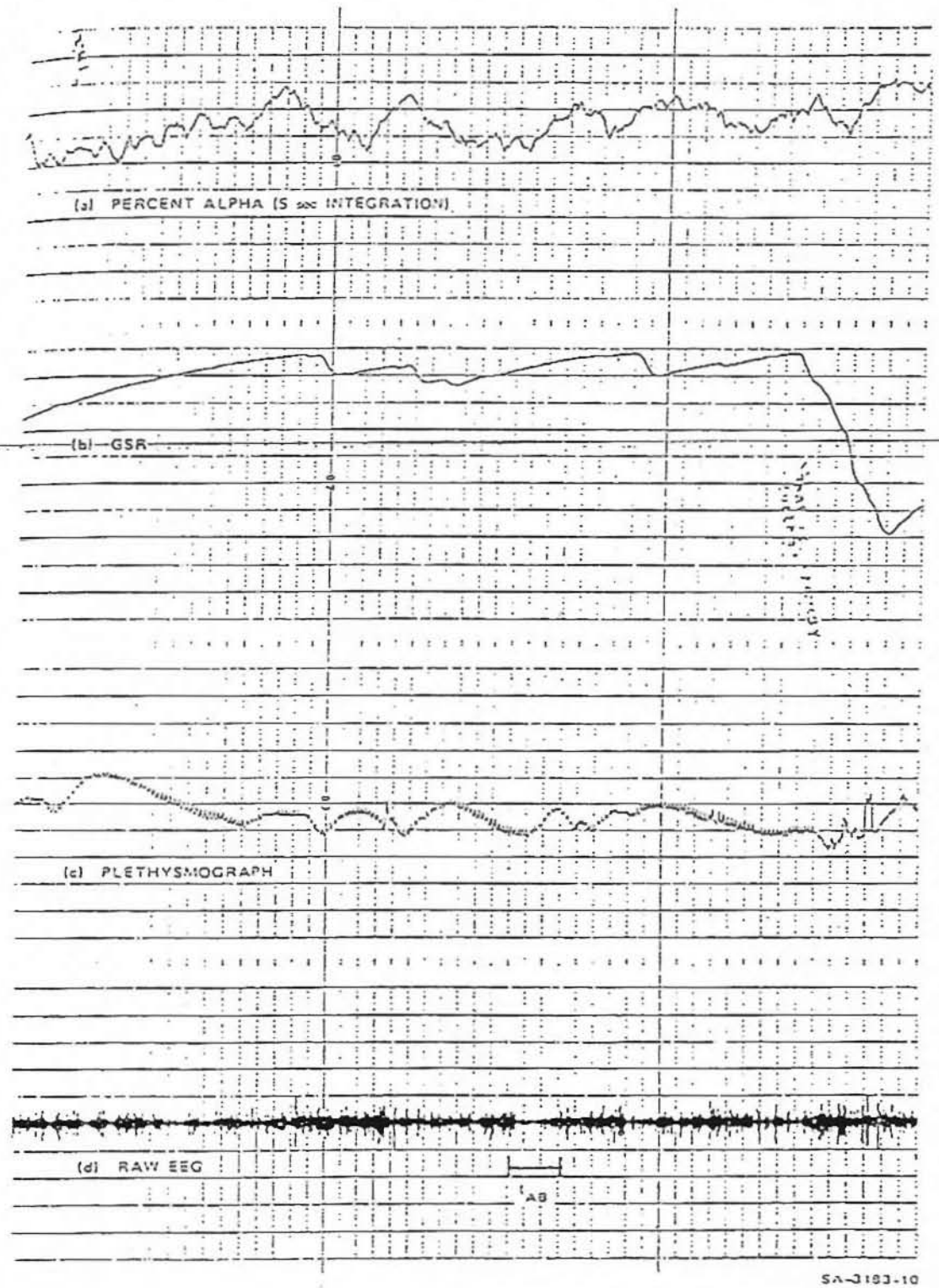


FIGURE 8 POLYGRAPH DATA

Correct verbal description given during time interval t_{AB}.

At this point in the effort three "psychokinetic" tasks have been investigated beyond the pilot stage, and are reported below.

(a) Universal Randomization Protocol

It was deemed desirable in our work to establish a universal randomization protocol independent of the particular experiment under consideration. The only exceptions were to be automated experiments where target selection is determined by radioactive decay or electronic randomization.

The randomization procedure is designed around a ten-unit base, e.g., ten targets, ten work periods, etc. A ten-digit sequence governing an experiment is blind to both experimenter and subject, and is uncovered by means of the following procedure. A three-page RAND Table of Random Digits (Table 3) is entered to obtain the ten-digit sequence, the entrance point being determined by four throws of a die,* the first 1, 2, or 3 determining page, the next 1, 2, 3, or 4 determining column block, and the final throw determining from which of the first six rows in the block the ten-digit sequence is to be taken. An opaque card with a single-digit window is then moved across the row to uncover digits one at a time. If a multiplicity of targets exist, the digits 0 through 9 are employed directly. If a binary command is required (e.g., increase/decrease or activity/no activity) the parity of the digit (even or odd) is employed.

*A technique found in control runs to produce a distribution of die faces differing nonsignificantly from chance expectation.

Table 5

Table of Random Digits*

11	16	43	63	18	75	06	13	76	74	40	60	31	61	52	83	23	53	73	61
21	21	59	17	91	76	83	15	86	78	40	94	15	35	85	69	95	86	09	16
10	43	84	44	82	66	55	83	76	49	73	50	58	34	72	55	95	31	79	57
36	79	22	62	36	33	26	66	65	83	39	41	21	60	13	11	44	28	93	20
73	94	40	47	73	12	03	25	14	14	57	99	47	67	43	54	62	74	85	11
49	56	31	28	72	14	06	39	31	04	61	83	65	91	59	15	46	98	23	85
64	20	84	82	37	41	70	17	31	17	91	40	27	72	27	79	51	62	10	07
51	48	67	28	75	38	60	52	93	41	53	29	98	38	80	20	12	51	07	94
99	75	62	63	60	64	51	61	79	71	40	63	49	99	43	33	88	07	64	13
71	32	55	52	17	13	01	57	29	07	75	97	86	42	93	08	07	46	20	55
65	28	59	71	98	12	13	85	30	10	34	55	53	93	61	88	26	77	60	63
17	25	45	73	27	38	22	42	93	01	85	99	05	70	43	25	06	77	75	71
95	63	99	97	54	31	19	99	25	58	16	35	11	50	69	25	41	68	78	75
61	55	57	64	04	86	21	01	18	06	52	45	88	88	90	78	35	26	79	13
78	13	79	87	68	04	68	95	71	30	33	00	78	56	07	92	00	84	43	97
62	49	09	92	15	84	98	72	87	59	35	71	23	15	12	08	58	85	14	90
24	21	66	34	44	21	28	30	70	44	58	72	20	36	78	19	18	66	96	02
16	97	59	54	28	33	22	65	59	03	25	18	86	94	97	51	35	14	77	99
59	13	83	95	42	71	16	85	76	09	12	89	35	40	43	07	25	58	61	49
29	47	85	96	52	50	41	43	19	66	33	18	68	13	46	85	09	53	72	82
96	15	59	50	09	27	42	97	29	18	79	89	32	94	48	65	39	25	42	11
29	62	16	65	83	62	96	61	24	68	43	44	91	51	02	44	12	61	94	38
12	63	97	52	91	71	02	01	72	65	94	30	50	42	59	68	98	35	05	61
14	54	43	71	34	54	71	40	24	01	38	64	80	92	78	81	31	37	74	00
83	40	38	88	27	09	83	41	13	33	04	29	24	60	28	75	66	62	59	54
67	64	20	52	04	30	69	74	48	06	17	02	64	97	37	85	87	51	21	39
64	04	19	90	11	61	04	02	73	09	48	07	07	68	43	02	53	19	77	37
17	04	89	45	23	97	44	45	99	04	30	15	99	54	50	83	77	84	61	15
93	03	98	94	16	52	79	51	06	31	12	14	89	22	31	31	36	16	05	50
82	24	43	43	92	96	60	71	72	20	73	83	87	70	67	24	86	39	75	76
96	99	05	52	44	70	69	32	52	55	73	54	74	37	59	95	63	23	95	55
09	11	97	45	03	97	30	38	87	01	07	27	79	32	17	79	42	12	17	69
57	66	64	12	04	47	58	97	83	64	65	12	84	83	34	07	49	32	80	98
46	49	26	15	94	26	72	95	82	72	33	71	66	13	50	60	21	20	50	99
08	43	31	91	72	03	32	02	05	39	31	92	17	64	53	73	72	00	86	57
10	01	17	50	04	86	05	44	11	90	57	23	82	74	64	61	48	75	23	49
92	42	06	54	31	16	53	00	55	47	34	21	94	10	90	08	53	16	15	78
35	54	25	58	65	07	30	44	70	10	31	30	94	93	37	02	33	00	24	75
86	59	52	62	47	13	55	22	94	91	20	75	09	70	24	72	61	96	66	28
72	11	53	49	85	58	03	69	91	37	28	53	78	43	95	26	65	43	78	51

* This table appears through the courtesy of The RAND Corporation and the McGraw-Hill Book Company, Inc. and is reprinted by permission from The Compleat Strategyst, by J. D. Williams, pp. 219-221 (1954).

07 42 85 88 63	96 02 38 89 36	97 92 94 12 20	86 43 19 44 85
35 37 92 79 22	28 90 65 50 13	40 56 83 32 22	40 48 69 11 22
10 98 22 28 07	10 92 02 62 99	41 48 39 29 35	17 06 17 82 52
90 12 73 33 41	77 80 61 24 46	93 04 06 64 76	24 99 04 10 99
63 00 21 29 90	23 51 06 87 74	76 86 93 93 00	84 97 80 75 04
40 77 98 63 82	48 45 46 52 69	02 98 25 79 91	50 76 59 19 30
43 21 61 26 08	18 16 78 46 31	94 47 97 65 00	39 17 00 66 29
96 16 76 43 75	74 10 89 36 43	52 29 17 58 22	95 96 69 09 47
70 97 56 25 93	35 68 47 26 07	03 68 40 36 00	52 83 15 53 81
85 81 26 18 75	23 57 07 37 54	58 93 92 83 66	86 76 56 74 65

37 10 06 24 92	63 64 24 76 38	54 72 35 65 27	53 07 63 82 35
53 40 61 38 55	38 51 92 95 00	84 82 88 12 48	25 54 83 40 75
55 17 28 15 56	18 85 65 90 43	65 79 90 19 14	81 36 30 51 73
40 35 38 48 07	47 76 74 68 90	87 91 73 85 49	48 21 37 17 08
18 89 90 96 12	77 54 15 76 75	26 90 78 81 73	71 18 92 83 77
68 14 12 53 40	92 55 11 13 26	68 05 26 54 22	88 46 00 63 52
51 55 99 11 59	81 31 06 32 51	43 58 76 81 49	88 14 79 97 00
92 21 43 33 86	73 45 97 93 59	97 17 65 54 16	67 64 20 50 51
15 08 95 05 57	33 16 68 70 94	53 29 58 71 33	38 26 49 47 08
96 46 10 06 04	11 12 02 22 54	23 01 19 41 08	29 19 66 51 87

28 17 74 41 11	15 70 57 38 35	75 76 84 95 49	24 54 36 32 85
66 95 34 47 37	81 12 70 74 93	86 66 87 03 41	66 46 07 56 48
19 71 22 72 63	84 57 54 98 20	56 72 77 20 36	50 34 73 35 21
68 75 66 47 57	19 93 79 22 22	27 93 67 80 10	09 61 70 44 08
75 02 26 53 32	98 60 62 94 51	31 99 46 90 72	37 35 49 30 25
11 32 37 00 69	90 26 98 92 66	02 93 59 53 03	15 18 25 01 66
55 20 66 34 70	13 15 82 52 83	89 96 51 02 05	95 83 09 54 06
11 47 40 87 86	05 59 46 70 45	45 58 72 96 11	98 57 94 24 81
81 42 28 68 42	60 99 77 96 69	01 07 10 85 30	74 30 57 75 09
21 77 17 59 63	23 15 19 02 74	90 20 96 85 21	14 29 33 91 94

42 27 81 21 60	32 57 61 42 78	04 98 26 84 70	27 87 51 54 80
17 69 76 01 14	63 24 73 20 96	19 74 02 46 37	97 37 73 21 12
05 68 63 02 43	34 13 40 29 36	50 19 77 98 69	86 49 76 87 09
52 99 24 66 50	89 91 05 73 95	46 95 46 75 36	28 96 88 19 36
94 51 89 39 84	81 47 86 77 50	82 54 96 26 76	31 12 34 98 99
00 18 47 21 86	78 90 67 54 89	61 79 88 16 00	80 01 88 47 42
87 45 26 31 65	79 81 66 16 30	57 66 62 90 55	46 51 80 14 87
88 69 25 87 16	12 27 34 81 76	29 80 56 49 94	66 87 26 22 30
20 09 44 27 62	41 38 21 67 68	06 71 13 49 39	19 59 97 62 47
60 93 58 13 04	50 52 08 21 53	13 93 44 68 85	58 31 58 83 66

51 39 28 59 36	43 89 85 05 96	28 54 99 83 27	99 94 32 53 77
54 23 94 19 18	79 52 64 62 74	40 87 16 18 03	25 76 75 54 84
57 89 27 33 94	07 16 09 02 62	47 70 43 83 55	71 70 88 01 17
02 33 07 47 36	53 27 44 44 68	62 61 11 96 98	09 30 42 92 65
76 11 52 92 47	55 34 25 12 99	03 04 78 39 81	11 91 60 92 67
63 31 28 18 86	29 08 52 01 01	26 46 05 05 01	31 73 11 89 38
27 63 22 15 70	34 27 45 64 26	01 76 42 59 59	69 29 38 98 75
06 33 56 21 11	44 01 45 25 67	11 76 25 48 06	02 65 15 29 12
64 14 28 76 76	21 35 88 87 73	31 73 63 16 95	11 52 36 42 13
28 43 62 54 68	75 23 57 53 70	97 15 54 87 06	52 23 92 18 31
09 52 28 38 55	85 57 31 58 88	31 18 14 96 72	17 23 70 40 24
93 71 41 54 14	93 71 20 27 42	32 11 58 26 83	67 18 28 90 30
15 68 15 35 99	58 18 57 38 40	07 06 87 59 47	71 74 36 92 85
77 71 22 39 14	08 90 74 37 68	26 62 27 41 84	75 16 69 67 48
78 45 35 48 44	61 50 90 12 45	02 80 55 26 76	22 51 94 78 48
24 86 06 82 84	19 36 72 90 73	32 30 15 87 01	04 19 33 01 42
37 28 40 68 44	78 88 75 72 76	26 33 95 69 09	39 33 14 21 01
35 48 85 24 73	37 63 43 25 69	95 27 40 95 08	81 01 24 24 13
51 59 55 99 09	35 22 34 49 91	24 27 53 96 32	09 77 79 88 00
90 66 03 51 71	30 02 19 11 20	36 11 64 21 28	65 40 19 41 99
47 50 50 20 08	20 30 08 71 88	96 19 50 70 59	13 26 63 13 89
13 35 00 84 14	64 04 99 43 77	22 40 89 49 58	19 09 55 80 35
33 00 69 26 90	69 24 89 74 43	53 89 62 35 08	16 22 75 69 29
55 21 66 38 86	06 80 41 18 61	22 56 50 24 75	00 25 87 90 18
21 59 12 62 28	14 80 11 91 92	49 43 82 07 72	60 84 66 97 32
71 02 52 82 12	10 47 42 75 22	65 62 03 46 84	00 21 00 48 63
65 52 21 52 42	84 55 47 45 60	20 24 62 69 41	41 29 80 47 63
27 97 55 49 23	90 65 00 61 70	09 43 30 91 67	35 16 63 27 31
07 30 00 97 04	36 09 96 15 77	95 55 27 34 54	16 57 88 81 40
54 35 71 36 89	19 56 90 38 14	76 03 30 51 50	69 12 56 94 42
00 97 70 44 81	42 04 40 86 49	34 82 23 58 43	78 46 88 23 80
13 92 07 87 61	12 31 19 28 08	07 75 30 40 73	58 52 08 00 22
08 39 53 70 43	37 88 03 41 72	04 20 49 44 34	62 79 88 19 02
45 16 66 72 06	01 61 94 37 69	96 77 01 94 40	29 70 04 20 93
87 76 77 76 07	03 74 20 16 13	65 98 96 28 43	10 91 73 44 58
29 88 09 52 88	21 64 44 65 87	06 64 49 47 84	66 99 56 18 12
36 24 83 66 66	14 89 45 92 73	88 95 04 60 77	34 65 11 20 38
12 38 62 95 56	30 47 42 59 64	21 48 29 54 22	02 00 23 36 71
52 06 87 38 01	52 18 81 94 91	55 13 76 10 39	02 00 66 99 13
41 72 75 21 71	56 71 90 60 54	98 44 18 15 29	59 60 76 52 25

(b) Experiments with Develco Superconducting Differential Magnetometer (Gradiometer)

One of the first psychoenergetically produced physical effects observed by SRI personnel in early research (1972) was the apparent perturbation of a Josephson effect magnetometer. The conditions of that pilot study, involving a few hours use of an instrument committed to other research, prevented a proper investigation. The number of data samples was too few to permit meaningful statistical analysis, and the lack of readily available multiple recording equipment prevented investigation of possible "recorder only" effects.

Therefore, at the suggestion of the client, a series of experiments were carried out using a client-supplied Develco Model 8805 superconducting second-derivative gradiometer manufactured by Develco, Inc., Mountain View, California. The assembled device is shown in Figure 9.

Basically, the gradiometer is a four-coil Josephson effect magnetometer device consisting of a pair of coil pairs wound so as to provide a series connection of two opposing first-derivative gradiometers, yielding a second-derivative gradiometer (i.e., a device sensitive only to second and higher order derivative fields). As a result, the device is relatively insensitive to uniform fields and to uniform gradients. This arrangement allows for sensitive measurement of fields from nearby sources while discriminating against relatively uniform magnetic fields produced by remote sources. The device is ordinarily used to measure magnetic fields originating from processes within the human body, such as action currents in the heart which produce magnetocardiograms. The sensitive tip of the instrument is simply placed near the body area of interest.

In our application, however, the subject is located at a distance of four meters from the gradiometer probe. As a result the

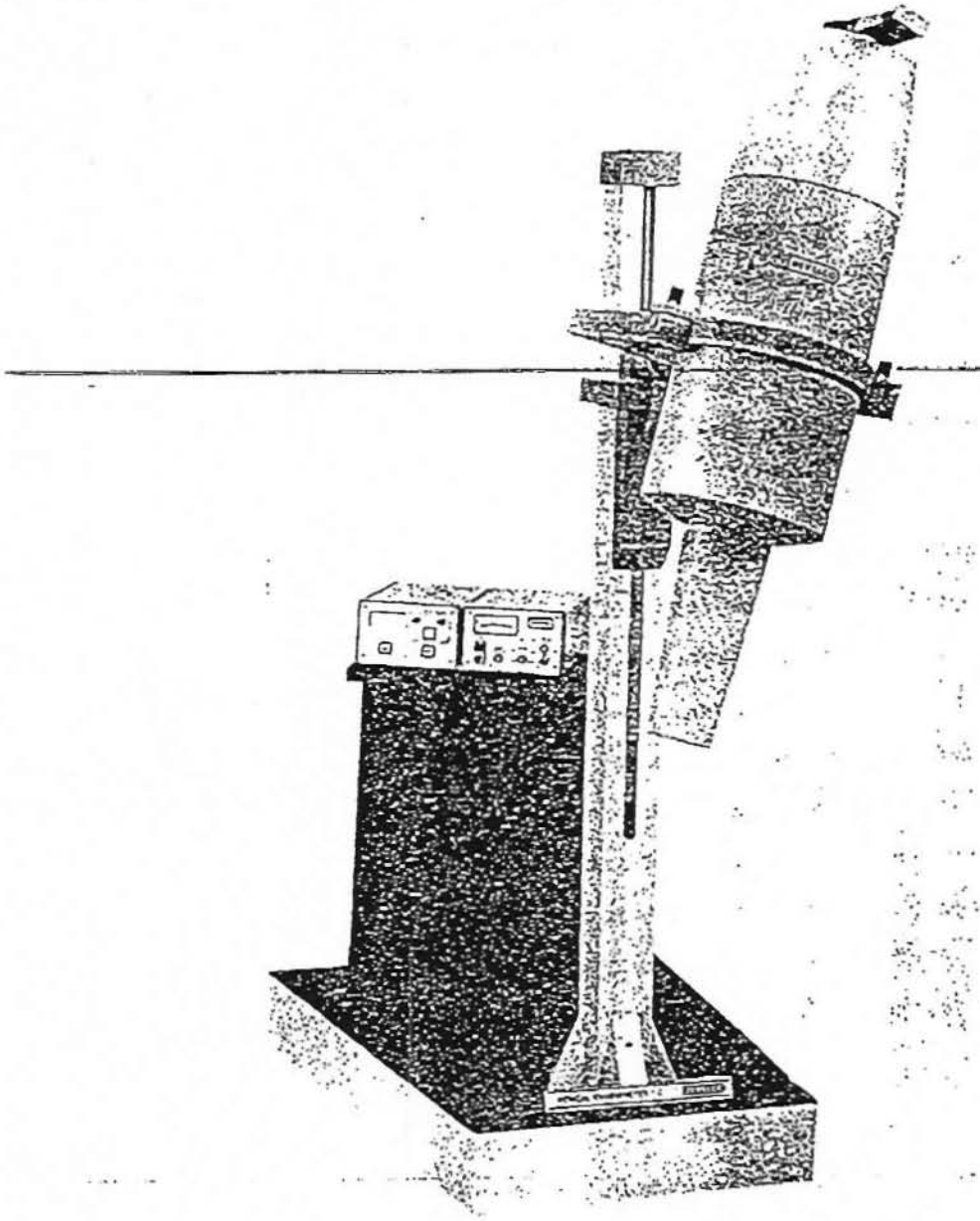


FIGURE 9 SUPERCONDUCTING DIFFERENTIAL MAGNETOMETER

subject is located in a zone of relative insensitivity; e.g., standing up, sitting down, leaning forward, and arm and leg movements produce no signals. From this location the subject is asked, as a mental task, to affect the probe. The results of his efforts are available to him as feedback from three sources: an oscilloscope, a panel meter, and a chart recorder, the last providing a permanent record.

After initial difficulty with the instrument due to RF interference effects, which required modification by the manufacturer, the gradiometer was available for use by the contractor from 10 June to 21 June. Some RF interference effects remained, due in part to environmental proximity to other instrumentation, but the device was usable nonetheless.

Protocol for subject participation was instituted as follows. The subject removes all metal objects, and the effects of body movements are checked at the start of each experimental period. The subject then works with the machine in a learning mode, observing effects being produced, if any, via feedback from the instrumentation. Once satisfied that a possibility exists of producing effects on command under experimenter control, the experimenter announces the start of the experiment. The universal randomization protocol (discussed in previous section) is then used to generate ten activity/no activity periods of equal length (e.g., 25 seconds) predetermined by the experimenter.

A sample run (Run 1, Subject 1) is shown in Figure 10. The randomly generated ON (activity) periods are Nos. 2, 8, and 9. As observed, signals appear in each of these three periods. The signal appearing in period 9 was strong enough to cause loss of continuous tracking. This latter type of signals can be the result of an exceptionally strong flux change, or an RF burst whether subject-generated or artifactual, and are handled on the basis of statistical correlation as

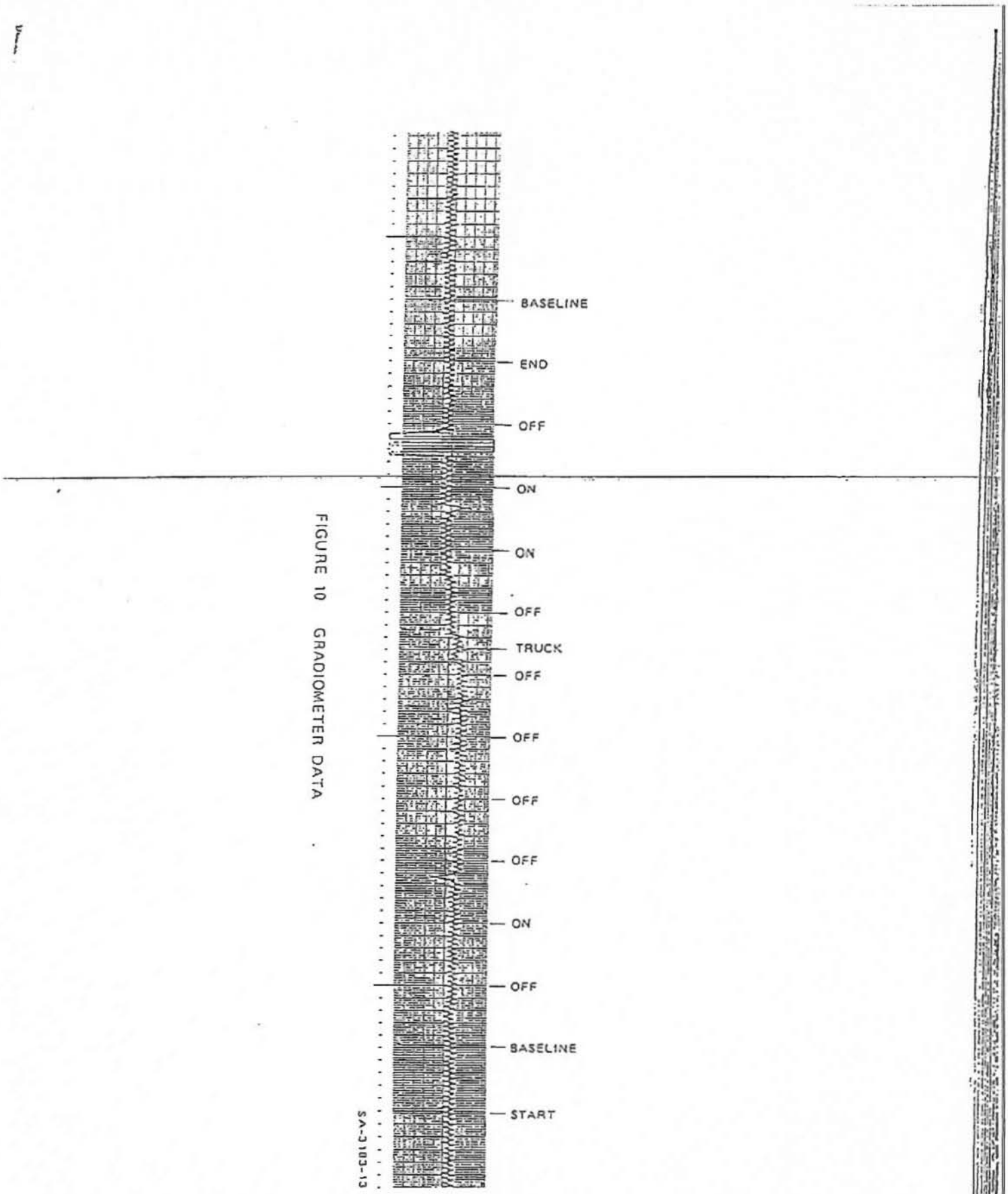


FIGURE 10 GRADIOMETER DATA

discussed below. An artifact due to the passage of a truck in the parking lot adjacent to the laboratory (under continuous surveillance by the experimenter) is noted in period 6. Each of the signals on scale corresponds to an input $\sim 1.6 \times 10^{-9}$ Gauss/cm^2 (second derivative $\partial^2 B_z / \partial z^2$), which is equivalent to $\sim 3.5 \times 10^{-7}$ Gauss referred to one pickup coil.

The interpretation of such observations must be subjected to careful analysis. For example, the emphasis on "corresponds to" is based on the following: although the probe is designed to register magnetic fields, and the simplest hypothesis is that an observed signal is such, in a task as potentially complex as "psychokinesis," one must be cautious about assigning a given observed effect to a specific cause. Therefore, without multiple measurement employing equally sensitive apparatus, which time and lack of instrument availability did not permit, one can only conclude that generation of a magnetic field is the most probable cause. With regard to signal display, the signal was observed simultaneously on three recording devices, and thus a "recorder only" effect can be considered low probability, although an electronics interference effect ahead of all display cannot be ruled out. We therefore treat the magnetic cause as tentative, although most probable, and concentrate our attention on whether a correlation exists between system disturbances and subject efforts.

Subject 1 logged the most time in controlled runs, 13 ten-trial runs. Each of the ten trials in the run lasted 50 seconds each,* the activity/no-activity command for each trial being generated by the universal randomization protocol technique. In the 13 x 10 = 130 trials, consisting of a random distribution of 64 activity and 66 no-activity periods, 63 events of signal-to-noise ratio > 1 were observed. Of these

*With the exception of the first run where 25-second trials were used.

63 events, 42 were distributed among the activity periods, 21 among the no-activity periods, a correlation significant at the $p = 0.004$ level.

Subjects 2 and 6 also interacted with the device. Although subject efforts and observed perturbations sometimes coincided, activity was generally low and did not appear to be that of a signature of correlated activity under control. A controlled ten-trial run with Subject 2 and two such runs with Subject 6 yielded nonsignificant results.

Given the limited availability of the instrument and somewhat noisy environment, from our best effort we nonetheless conclude that for Subject 1 the observed number of precisely timed events in pilot work coupled with the statistically significant ($p = 0.004$) correlation between subject effort and signal output in controlled runs indicate a highly probable cause-effect relationship. Thus it appears that a gifted subject can interact with a second derivative magnetic gradiometer of sensitivity $\sim 10^{-9}$ Gauss/cm^2 from a distance of four meters. Further work would be required to determine absolutely the precise nature of the interaction, although given the equipment design the generation of a magnetic field is the most probable mechanism.

(c) Experiments with Laser-Monitored Torsion Pendulum

In this series of experiments we examine the possibility that a subject may be able to exert a physical influence on a remotely located physical system. The target is a torsion pendulum suspended by a metal fiber inside a sealed glass bell jar. The pendulum consists of three 100-gram balls arranged symmetrically at 120° angles on a 2-cm radius. The entire apparatus is shock mounted, and protected from air currents by the enclosing bell jar.

The angular position of the pendulum is measured by means of an optical readout system. The system consists of a laser beam from

a low power argon laser* reflected from a small mirror on the pendulum onto a position sensing silicon detector† 1.5 meters from the pendulum. The detector yields an output voltage proportional to spot position. The output from the detector is monitored by a chart recorder‡ which provides a continuous sine wave record of pendulum position.

The system exhibits a sensitivity of approximately 10 microradians. Under typical experimental conditions random acoustical fluctuations drive the pendulum in its torsional normal mode of 10 second period to a level ~100 microradians angular deviation. During control runs the pendulum executes harmonic motion with a maximum variation in amplitude of ±10 percent over an hour period. Sudden vibrational perturbations in the environment produce oscillation of the pendulum in the vertical plane at a frequency of 1 Hz, as contrasted with the torsional mode in the horizontal plane at 0.1 Hz.

The subject is asked, as a mental task, to affect the pendulum motion, the results of which would be available as feedback from the chart recorder. The subject is then encouraged to work with the pendulum from a distance of 1 meter, observing effects being produced. If satisfied that there is a possibility of producing effects (typically following a week's activity, a couple of hours per day), an experiment is begun.

As in other experiments, subject efforts to increase or decrease oscillation amplitude are determined by an experimenter utilizing the universal randomization protocol described in (a). Each experiment

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*Spectra Physics Model 262.

†United Detector Technology Model SC/10.

‡Brush Model Mark 200.

lasts one hour and consists of six 5-minute work periods alternated with six 5-minute rest periods.

In later work, the subject is removed to a room 12 meters down the hall with three intervening office spaces to determine whether effects can be produced from a remote location. The subject is provided feedback at the remote location either by closed circuit video or by a second chart recorder in parallel with the recorder in the enclosed target laboratory. The remote aspect was instituted both to prevent artifactual effects from body heat, etc., and also to determine whether energy can be coupled with the remote viewing channel to a remote location.

In pilot studies we observed considerable evidence indicating that a gifted subject located in the same room is able, by concentration, to increase or decrease pendulum motion on command while sitting quietly one meter from the bell jar. The change-to-baseline ratio is often 5:1 or better so the effects are not small. A sample chart showing a rest period followed by a decrease period is given in Figure 11.

Vibrational artifacts can be ruled out on the basis that when such inputs occur, a marked 1-Hz oscillation signal due to vertical motion is superimposed on the 0.1-Hz torsional motion. Especially interesting are the decreases that take the motion below that generally observed due to environmental noise driving. Such observations indicate the application of a constraint which couples energy out of the pendulum motion. Similar observations have been observed with the subject removed

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*Both experimental evidence and theoretical work indicate that distance may not be a strong factor in paranormal phenomena. See, for example, E. H. Walker "Properties of Hidden Variables in Quantum Theory: Implications for Parapsychics," U.S. Army Ballistic Research Laboratories, Aberdeen Proving Ground, Maryland.

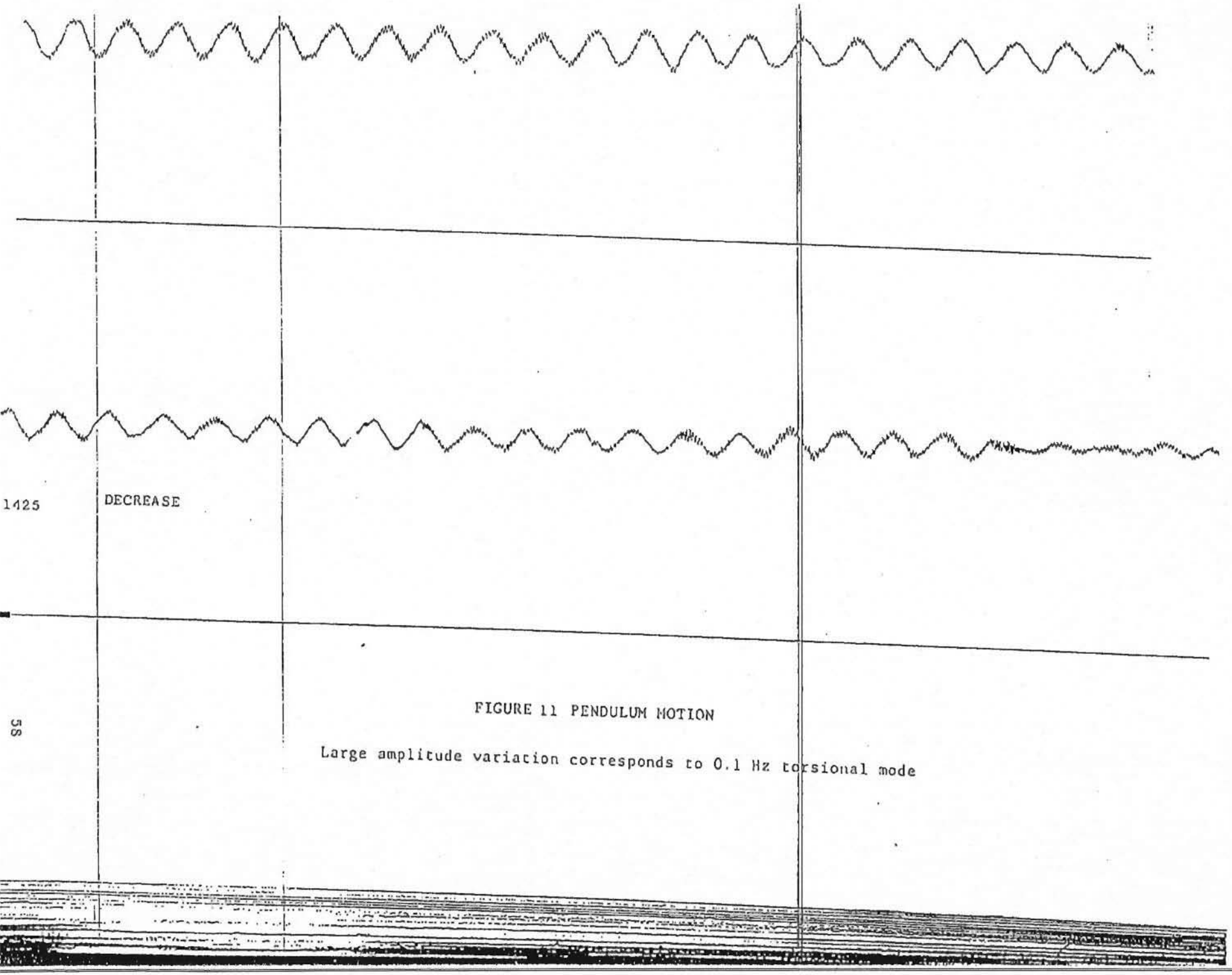

FIGURE 11 PENDULUM MOTION

Large amplitude variation corresponds to 0.1 Hz torsional mode

to the second location 12 meters away. Although less pronounced (change-to-baseline ratios typically 2:1), the effect remains easily observable.

The universal randomization protocol is used throughout to determine increase/decrease periods. Control run data are being collected to be subjected to the same analysis. Multiple recording is used throughout to rule out artifacts due to recorder effects. Finally, an electrometer with the base of the bell jar serving as one electrode is monitored to record acoustic vibration independently. Due to the potential significance of such findings, considerable data are being taken in order that the matter can be subjected to statistical analysis over a large sample involving hundreds of work periods. A few hundred data samples have already been collected for this purpose, and the results will be published when available.

(d) Experiments with Geiger Counter

As part of a continuing search for mechanisms involved in paranormal phenomena, a series of experiments were conducted with Subject 1 to determine whether a Geiger counter in the γ-ray mode (i.e., beta shield in place) would register subject-directed efforts.

The output of a Geiger counter,* fed into a Monsanto Model 1020 counter/timer, indicates a background count due to cosmic rays ~35 counts/minute. Experimental protocol requires the subject to try to change the registered count by concentration on the Geiger counter probe from a distance ~0.5 meters. Each run consists of fifteen 60-second trials, with 10-second separations between the trials. Preceding each subject run is a control run of equal duration.

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*OCDM Item No. CD V-700, Model No. 66, Electro-Neutronics, Inc., Oakland, California.

In four runs to date the results, shown in Table 8, indicate no effect of statistical significance, either in the mean or standard deviation of counts.

Table 6

GEIGER COUNTER EXPERIMENT

	Control Runs		Experimental Runs	
Run	Mean	Standard Deviation	Mean	Standard Deviation
1	36.07	5.73	35.33	6.00
2	34.87	6.23	33.87	7.27
3	33.87	5.88	34.00	5.25
4	35.20	5.09	35.67	5.77

5. Basic Research Summary

The basic research program to date has been spread over a number of subjects and over a number of activities, generating a considerable amount of data. It was deemed desirable in the first half of the research program to cover as much material as possible in a horizontal development to determine the best subjects and the fruitful directions for concentrated effort in the second half of the program.

We intend to concentrate on analysis of the large amounts of data already obtained while subjects are involved in extramural medical and psychological testing. Based on the findings, a few carefully-chosen items will be culled for final specific testing following discussion with client representatives.

Appendix 1

RANDOMNESS TESTS OF FOUR-STATE ELECTRONIC RANDOM STIMULUS GENERATOR

Appendix 1

RANDOMNESS TESTS OF FOUR-STATE ELECTRONIC RANDOM STIMULUS GENERATOR

The design objective was to build a four-state machine, with each state equally likely to occur on each trial, independent of the past sequence of states. If the machine meets this objective, it should not be possible to devise a rule for future play that significantly differs from chance. A simple example of such a rule would be to select the machine state observed in the preceding trial; if this strategy were to produce scores significantly above chance (25 percent hits), we would reject the hypothesis of randomness of the machine under test.

Before experimentation, four machines, purchased from Aquarius Electronics, Albion, California, were extensively tested for randomness. Data were analyzed on a CDC-6400 computer, and the three machines finally selected for use in screening met established criteria for randomness.

In developing randomness tests, we are guided in part by a knowledge of the machine logic. When one of the four choice keys or the pass key is depressed, the current machine state is displayed; then a brief time after release of the key, a new machine state is established (but not shown to the subject) by sampling the instantaneous state of a high-speed four-state electronic counter. For the machine to be random, the times of dwell of the counter in each of the four states must be precisely equal; otherwise, the distribution of outcomes will be biased. The first randomness test is thus based on tallying the number of occurrences of each of the four states. This test should detect a stable bias, yet may miss a drifting bias. To test for this second possibility we also tally the distribution of outcomes in each group of 100 trials, then compute a

likelihood ratio test statistic (see below) for each group. Under the null hypothesis of equal likelihood of the four states, these statistic values are distributed approximately as chi-square with three degrees of freedom and their sum for m groups distributed approximately as chi-square with three m degrees of freedom. This test may also detect stable bias, but is not as powerful for this purpose as the first test. Variable bias of still a shorter period, if substantial, can be tested for by tallying the frequency with which the previous machine state is repeated; an overall repeat ratio ("all") significantly above 0.25 is indicative of such bias.

If for any reason the machine were to fail to sample the counter to establish a new state, the previous machine state would be repeated. To test for this possibility, we tally the number of repeats following the depression of each key. A repeat ratio significantly greater than 0.25 should be considered a danger signal.

We also tally the initial machine states following reset and the transitions between states. In each case, the number of occurrences of each of the four possible outcomes should be approximately equal. When repeats are deleted from the sequence of trials ("nondiagonal transitions"), the four states should also be approximately equal in frequency.

In testing the null hypothesis of four equally likely outcomes of a trial, a likelihood ratio test is used. The statistic

$$-2 \sum_{i=1}^{4} n_i \ln\left(\frac{n/4}{n_i}\right)$$

under the null hypothesis is distributed approximately as chi-square with three degrees of freedom, with rejection for large values of this

statistic.* The computer program used in testing randomness includes a subroutine for computing the probability of a chi-square value as large or larger than that observed.

In testing the null hypothesis that the probability of a repeat is 0.25, the binomial probability of obtaining the observed number K or more repeats in N trials is computed. For K greater than 1000, a normal distribution approximation is computed, assuming the statistic

$$\left(\frac{K - 1/2}{N} - 0.25\right)\sqrt{\frac{N}{3/16}}$$

to be approximately normal with mean zero and standard deviation one.

The typical test pattern used was six passes followed by 25 choices of one color, repeating this for each of the four colors. In this way each of the five keys other than rest were given approximately equal use. Typically, 2000 to 6000 trials were made in each sitting. In the absence of any unusual results in the randomness tests, a minimum of 10,000 trials were made before using a machine with experimental subjects. With 10,000 trials, the expected fraction of repeats is 0.25 with a standard deviation of $3/200 = 0.00866$.

A sample computer listing of the results of randomness tests on Machine 4 is included in Table A-1. Of the four machines tested, three were found suitable for use in screening activity. The fourth machine was returned to the manufacturer for adjustment.

*Alexander Mood, Introduction to the Theory of Statistics (McGraw Hill, New York, 1950).

Table A-1

RANDOMNESS TESTS--MACHINE 4

	Buttons				Number of Trials	Chi-Square	Binomial Probability
	Yellow	Green	Blue	Red			
Initial states	107	116	113	128	464	1.996	0.57
Transitions	728	764	765	790	3,047	2.573	0.46
	777	784	773	863	3,197	6.745	0.08
	776	796	810	773	3,155	1.158	0.76
	787	852	803	805	3,247	2.877	0.41
All states	3,175	3,312	3,264	3,359	13,110	5.667	0.18
Nondiagonal transitions	2,340	2,412	2,341	2,426	9,519	2.630	0.45

	Key	N-Trials	Repeats	Ratio	Binomial Probability
Diagonal transitions	Yellow	2,774	705	0.2541	0.313
	Green	2,755	674	0.2446	0.748
	Blue	2,761	706	0.2557	0.250
	Red	2,742	667	0.2433	0.793
	Pass	1,614	375	0.2323	0.953
	All	12,646	3,127	0.2473	0.763

Note: Randomness in groups of 100 trials: Chi-square = 299.6141; D.F. = 345; Probability = 0.9628.

Appendix 2

PERSONAL OBSERVATIONS ON THE USE OF THE FOUR-STATE
ELECTRONIC RANDOM STIMULUS GENERATOR

Appendix 2

PERSONAL OBSERVATIONS ON THE USE OF THE FOUR-STATE ELECTRONIC RANDOM STIMULUS GENERATOR*

The following notes are based solely upon my experience and I therefore make no claim that they are generalizable to other persons. Since I am still learning about ESP phenomena, I am confident that additional work in this area will expand, modify, and refine the perceptual processes discussed below. While I have tried to describe these experimental processes with as much precision as possible, the use of seemingly precise language should not leave the impression that the perceptions themselves were equally precise. To the contrary, I found these perceptions to be delicate, transient, and ephemeral--and yet, at the same time--and somewhat surprisingly--unmistakably real.

1. Perceptual Processes

Working with the ESP machine proved to be a venture into unfamiliar perceptual territory which functioned according to new and different rules. It took some time (five hours or so with the ESP machine) to begin to learn not only which perceptual processes would work but, equally important which would not work. There was clearly a learning process in finding those delicate and subtle internal cues that would allow me to make perceptually based choices. After approximately 1000 trials with the ESP machine, five dominant perceptual modes emerged. Subsequent work

*Prepared by a policy research analyst at SRI, who was a high-scoring subject ($p < 10^{-6}$) with the four-state electronic random stimulus generator.

with the machine seemed to essentially expand and refine these perceptual processes that emerged initially.

Direct Knowing (Used approximately 5 to 15 percent of the time)--This perceptual cue came as a "gift" that I did not have to work for. This is not to say that this "cue" was always right, but when there was a direct perception of the appropriate response unmediated by any of the other cues described below, my chances of being right seemed quite high (say 75 percent of the time). Internally, this was simply the feeling that I should push one specific button and the knowing was almost immediate. If it were not immediate then, typically, one of the other cues would be used.

"Closure Cues" (Used perhaps 75 percent of the time)--This cue manifested itself in a variety of ways; a sense of "fullness" with respect to a particular button, an internal anticipation of the bell ringing, a sense of "hardness" or "firmness" and a sense of being "locked into" the correct response. The validity of this cue could be tested by acting and thinking as if I were going to push a particular button and then noting the extent to which these "closure cues" became present. This sense of active intentionality--both physically and psychologically--seems important in that it allowed me to sort out many real from imagined perceptions. Also, this cue often gave a kind of veto power; i.e., it did not necessarily assure me as to the right answer but it would tend to tell me if I had picked the wrong one, i.e., I would not experience the aforementioned cues.

Pattern Recognition (Negligible use initially, but then used approximately 75 percent of the time during Phase IV)--Although I used this perceptual mode very infrequently during the initial stages of the

experiment, it emerged rather naturally toward the end. This was similar to the "direct knowing" but not isolated to a single button; rather, there was a sense of the next two to three buttons that would be the correct responses. These perceptual cues were obtained in a less objective rational way and in more of a meditative state, highly concentrated but without specific focus on a particular button. Interestingly, in using this perceptual process, I was able to go somewhat faster and have greater access to all of the buttons in an equivalent way. Thus, this mode had the advantage of loosening habituated perceptual patterns but ~~it also made selections less amenable to conscious control and testing.~~ This process proved to be either highly accurate or highly inaccurate. Accuracy seemed to be a function of the degree to which I could become synchronized with the evolving pattern of machine selected choices--and it was easy to get out of phase/sequence with this pattern.

Rational Guessing (Used approximately 5 percent of the time)--Although I virtually never did try to superimpose some rationally predicted pattern upon the random, machine selection of buttons, I would sometimes override my selections (very seldom for the better) by noting that one button had come up too often for it to be likely on the next trial or, conversely, had not come up so seldom that it should be given special consideration as a likely possibility on the next trial. Again, although this was a testing strategy, I found that random processes were not amenable to rational anticipations and my rational guesses seemed often to be wrong.

Tension/Vector Analysis (Used approximately 75 percent of the time)--Here the cue was manifested as a sense of tension(s) pulling in one direction or another with the selection buttons as the locus for that tension. The cue was also manifested as a feeling of "emptiness" and conversely as a sense of "fullness." To describe this process further, it felt analogous

to vector analysis in physics where, in sorting out competing tugs and pulls. one finds the "dominant" vector; i.e., the one with the strongest "pull" or the one that best "balances" the other vector tensions. Figure A-1 illustrates this phenomenon.

Although the tension/vector cues were very useful and among the most reliable of all the cues, I found them to be at times quite misleading. The source of confusion stemmed from the role of time as a variable rather than a constant in extrasensory reality (discussed in more detail under Section 2, "Comments on Perceptual Processes"). If my assumptions as to the temporal nature of my perceptions did not fit with the actual nature of those perceptions, then the perceptions were quite misleading. (Recall that precognition refers here to a button that will be selected in the future--typically the next trial.) The nine-cell matrix shown in Figure A-2 may clarify the complexity of the perceptual process, the need for discriminating awareness and the possibility for error. Out of nine possible combinations of the assumed/actual nature of perceptions, only three are matched or congruent and yield accurate understandings. Each of these primary cases is discussed below:

- Clairvoyant--Here the feeling which allows sorting and selection is like that described in Figure A-1.
- Precognitive--The feeling, sorting, and selection is like that described in Figure A-1 with clairvoyance; the primary difference being a shift in the time dimension to refer, not to the present target of the machine, but to the one to be selected next. To act on this perception I would press the pass button to bring the future into the present and then press the button that corresponded to my precognitive perceptions.
- Clairvoyant and Precognitive--The perception is of a pattern of buttons, distributed through time, that are and will be selected by the machine--the "pattern" usually consisted of two to three buttons. Again, the time variable was most troublesome--typically with greater difficulty

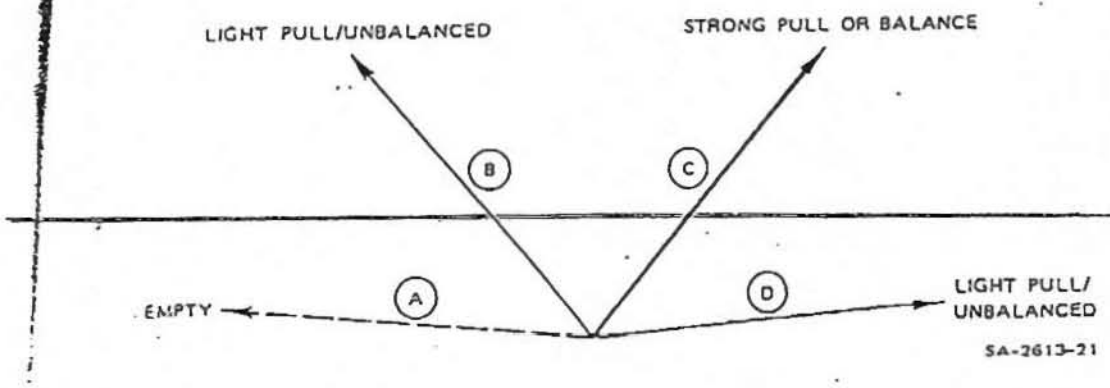

FIGURE A-1 ILLUSTRATION OF TENSION/VECTOR ANALYSIS IN OPERATION
With Button C being the one selected using these cues.

ACTUAL
NATURE OF PERCEPTIONS

ASSUMED NATURE OF PERCEPTIONS	Clairvoyant	Precognitive	Clairvoyant and Precognitive
Clairvoyant	Correct Perception	Misperception	Misperception
Precognitive	Misperception	Correct Perception	Misperception
Clairvoyant and Precognitive	Misperception	Misperception	Correct Perception

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FIGURE A-2 MATRIX SHOWING CORRECT PERCEPTION AND MISPERCEPTION IN THE USE OF TENSION/VECTOR CUES VIA THE INTERFACE BETWEEN ASSUMED AND ACTUAL NATURE OF PERCEPTIONS

in determining the order in which the buttons would appear as targets and lesser difficulty in determining which buttons were targets.

Confusion and error would arise when I assumed the tension/vector perceptions were clairvoyant when in fact they were (say) clairvoyant and precognitive. To explain how this felt, I refer back to Figure A-1. If the actual sequence of correct answers were Buttons B and D, and if I were assuming the perceptions were clairvoyant only, then it was not uncommon to have the perception that the intervening button (C) was the correct choice. The rationale for this perception was that it felt like a balance point between Buttons B (present target) and D (next target).

In retrospect, when I am more rationally aware of the room for error in the use of this cue mechanism, I am somewhat surprised as to how useful it was in operation.

It should be clear from the preceding descriptions that selections were made by a variety of processes which were used sometimes in isolation and oftentimes in combination. A typical sequence in the selection process was: (1) check for "direct knowing" cues, if not there, then (2) use "tension/vector" cues, then (3) make final selection with "closure cues."

2. Comments on Perceptual Processes

Rather than work rapidly, I chose to work deliberately, consciously, and therefore slowly. I would typically take five to thirty seconds to select a button--enough time to have a firm and conscious sense of my internal cues and what I thought they meant. The typical sequence would be as follows:

- Clear mind and become quiet
- Concentrate internal awareness

- Observe various cues
- Rationally interact with cues to sort them out
- Select a button and press it
- Integrate feedback from response
- Clear mind and become quiet.

Except during "pattern recognition," when all buttons seemed equally accessible, I found that the top two buttons on the machine were much more accessible than the bottom two. Three plausible explanations emerge to account for this. First (and least likely I think) is a psychological predisposition against the bottom two buttons--perhaps because of the color of the buttons or because of the pictures associated with the targets. Second is the possibility that the circuitry of the ESP machine in some way favors the top two buttons or obscures the bottom two. Third (and most plausible to me) is the possibility that to the extent I used the "tension/vector" cue, then the bottom two buttons would be without a vector below them--making it more difficult to "bracket" the bottom two buttons with this perceptual process. In later phases of the experiment, I was more able to access the bottom two buttons and this seemed to correspond with increasing use of the "pattern recognition" cues and the decreasing use of tension/vector cues.

The longer I worked with the ESP machine, the more apparent it became that, in an extrasensory perception reality, time becomes fluid. In other words, although the experiment was designed to test clairvoyance (selecting the current target) only, I found that the perceptual cues did oftentimes be equally applicable to precognition (selecting a future target--usually the next one). Therefore, making a correct selection required doing two things: first, finding the correct "pattern" of buttons that would be randomly selected by the machine (typically the pattern consisted of two to three buttons), and second, associating a

time component with the buttons in that pattern. Stated differently, the same cues discussed above held equally well for precognition or for clairvoyance--so the problem of making a selection was compounded by the additional difficulty of having to determine whether a perceptual cue was associated with the button that had already been selected by the machine or the button that would be selected in the next or even subsequent trial. I definitely felt that if I could consistently separate clairvoyant from precognitive dimensions of identical cues, that I could substantially increase the accuracy of overall scores.

The cues were not always consistent in their presence and meaning. For example, I might be obtaining good results with the use of tension/vector cues and then find them become ambiguous, with a commensurate decline in my score. Then I would rely more heavily upon other cues. Or, the cues might work well for clairvoyant perceptions for a while but then shift to operate for precognition--then I would have to "recalibrate" myself to the cue mechanisms. So, it was a fluid, dynamic perceptual process which required flexibility and patience. Highly significant scores and perceptions seemed to go in spurts of ten trials or so, then I would fall back to a chance level until I could resynchronize myself with the machine and the character of my perceptual cues.

I tend to agree with the notion that it might be more appropriate to call these processes "extraconceptual perception" rather than "extrasensory perception." The perceptual cues were definitely present and they had sensory dimensions even though they do not fit into our traditional sensory categories. Just "where" and "how" these sensory cues were present is not clear to me--but these are essentially conceptual rather than sensory issues.

3. Problems in Perceptual Translation

A basic problem in using the ESP machine was not so much the obtaining of perceptual data as the translating of those data into sufficient information to allow the action of selecting the correct button. While the act itself is so simple as to be trivial, the information processes (gathering, filtering, dynamically translating) underlying that act seemed to me very substantial. It is within this unseen and unrecorded portion of the ESP testing process that most of the "action" takes place. From this vantage point I would like to suggest two impediments that might partially account for relatively low scores.

First, I am still not fluent in the "language" of extrasensory perceptions--analogously, it is like hearing many separate commands in Russian (or another unfamiliar language), each time spoken in slightly different ways and with different intonations and inflections. The call for action may be clearly heard but the translation of that command into operational reality is an imprecise process until the language can be better understood.

Second is the problem created by shifting back and forth between rational and intuitive knowledge processes during the course of the experiment. In selecting a single button I would use intuitive knowledge processes for perception and oftentimes, rational or semirational knowledge processes to interpret those perceptions. This is not to say that the rational component is absolutely necessary, but it did seem to be useful [illegible]. In any event, since the experiment covers thousands of trials (button selections) it required thousands of translations from one knowledge mode to another. Although the rational mode did seem helpful for interpretation, it was also "costly" (i.e., by shifting to a rational mode, I could be thrown slightly off-balance in maintaining contact with

the subtle and delicate intuitive processes--thereby introducing an additional element of ambiguity and error).

Related to the problem of differential knowledge processes is the problem of having to translate between states of consciousness in order to act upon extrasensory perceptions. LeShan* analyzed the experiential properties of what he has termed Clairvoyant Reality and found that while certain events (such as telepathy, precognition, and clairvoyance) are "normal" to this reality, certain other events (such as being able to take directed action toward a goal) are "paranormal." For me this was manifested experientially as the feeling that when I obtain extrasensory perceptions, I am so much a part of, and immersed in the Clairvoyant Reality that in order to act, I must causally separate myself from the Clairvoyant Reality and enter the dualistic, subject/object Reality that LeShan terms "Sensory Reality." Encouragingly, the "pattern recognition" process seemed to offer a means of both perception and action, which did not require the same degree of transfer between these subtly different states of consciousness.

The preceding points suggest that one difficulty in testing and assessing extrasensory perception may be the apparent need to translate it into an output that is not isomorphic with the perceptions themselves--a person must translate the perceptual "language" to a familiar form, across rational and intuitive dimensions, and relatedly, from one state of awareness to another. Is it possible, then, that our means for testing it may not be highly congruent with the nature of the phenomenon, and this may inherently reduce the significance of the test results that can be obtained?

---

*Lawrence LeShan, The Medium, the Mystic, and the Physicist (Viking Press, New York, 1974).

4. Two Views of the ESP Process

I suspect that, to an external observer, my work with the ESP machine might appear as fairly consistent scoring slightly above chance--the logical inference could then be made that a small amount of extrasensory perception was mixed with a substantial amount of pure guessing. While the scoring data may support this inference, my awareness of the input process does not. Consider the following: on the first run, a person could get 6 "hits" out of 25 by pushing buttons at random; then on the second run, he could get 6 "hits" out of 25 by using extrasensory perception. To the statistician who looks only at the output, the scores are identical--they are no more than would occur by chance--and the logical inference would be that the input processes were identical or at least very similar. However alike they might appear externally, internally they could feel like quite different runs. In the second instance, the chance level of scoring would be the result of an imperfect but operative extrasensory perception process. Obviously, then, measurement of ESP by statistical output alone obscures the nature and extent of the extrasensory input. A relatively modest score on the ESP machine can--I think--substantially understate the amount of learning and perceptual development that actually occurs. The foregoing is consistent with my impression that my scores, though statistically significant, still did not reflect the actual amount of learning that had occurred.

5. Supportive Mind Set

There emerged, after a time, what seemed to be a series of preconditions to good performance in terms of mind set. These were:

- A high level of motivation seemed essential. The task of pushing one of four buttons over thousands of trials could be rather boring--enough to allow one's attention to wander. With each trial, it was necessary to have a high level of

motivation to ensure adequate levels of concentration and focused attention.

- Although motivation concentration, and attention were important, it was also necessary not to be too concerned with the success or failure associated with each selection. If I became "attached" to the outcome of a previous trial, whether a success or a failure, it could divert a significant amount of attention from the present trial. Therefore, each trial must be separate/fresh/clear/unconditioned by the actual success or failure of previous trials and separate from the imagined successes or failures of upcoming trials.
- A relatively stable, undisturbed emotional state also seems important. I noticed the most substantial fluctuation in my scores when I was emotionally stressed (angry, hassled, and so on).
- Feeling rested physically also seemed important. This was particularly true if I were to work with the machine for an hour or two--as this required a substantial amount of energy.
- A positive attitude--a feeling that I could do well and could always score at least at the chance level--was also important. A corollary to this was that I found I did better when I "always liked myself" even if I did poorly. Self-deprecation seemed to be a sure way of rapidly diminishing the accuracy of the perceptual processes.

6. The Environment

There were attributes of the surrounding environment that seemed to enhance the accuracy of my selections. The more significant factors seemed to be the following:

- It was helpful to have a relatively quiet working environment. Or, if there were noises, to have them of a sort--fairly constant ones that remained in the background--that could be readily filtered out of my consciousness. My impression was that external sensory information--particularly sounds--could readily overload/override subtle and delicate internal sensory information.
- It also seemed to help to have low light levels--I would always turn out the overhead lights in the testing room. I

experimented with closing my eyes to further reduce external sensory stimulation and I found that this would increase the sensitivity of sensory cues, but this increase in sensitivity was offset by a lack of visually based feedback to verify the accuracy of the selections. As a consequence, I chose to keep my eyes open.

- I found it essential to work with the ESP machine by sitting somewhat above it so that I could look down on the face of the machine. For some reason, perceptual discrimination seemed much more difficult when I would sit at a lower level which placed the buttons in a plane more nearly horizontal to my face and upper body.

7. Transferability of Processes

The perceptual learning gained in this experiment seemed generally transferable to other situations where I might use ESP abilities, in particular, telepathy, precognition, and clairvoyance. The inference is that a process or faculty is being developed which has numerous applications in other situations which would rely upon ESP. Analogously, just as jogging could exercise muscles to make a person more adept at playing football, dancing, swimming, and the like, the use and development of these "psychic" muscles seems to have some degree of transference to other situations.

8. Conclusions

I found the experiment to be a very substantial learning experience in which, I feel, I learned much more than was reflected in the scores. It allowed me to begin to identify an ability which I presume was largely latent within--never having had a prior opportunity for overt expression. Finally, it suggests to me that this must be a common ability among many people that they simply do not recognize--primarily because they have never had the opportunity to explore it as a legitimate and "real" phenomenon.

Appendix 3

SAMPLE OF RAW DATA--MEDICAL EVALUATION OF SUBJECT 1

RODNEY PERKINS, M. D.
MEDICAL CORPORATION
OTOLOGY AND NEURO-OTOLOGY
1801 PAGE MILL ROAD
PALO ALTO, CALIFORNIA 94304
TELEPHONE (415) 321-9000

August 8, 1974

Harold Puthoff, Ph.D.
Stanford Research Institute
333 Ravenswood
Building 30 K-1029
Menlo Park, Calif. 94025

Dear Dr. Puthoff:

Enclosed you will find copies of our results from 5-1 : audiological evaluation.

~~The results as shown on the enclosed audiogram indicate that~~ hearing is within normal limits for all frequencies tested except 3000 Hz. At that frequency, a mild hearing loss was found in both ears. This audiometric configuration is often found in people who have been exposed to high levels of noise.

stated that he had a history of noise exposure.

Speech reception thresholds were consistent with pure tone findings and speech discrimination scores were excellent, bilaterally. was able to discriminate monosyllabic words better at slightly lower levels than is typically observed for persons with normal hearing.

ability to detect small changes in loudness of pure tones was not as good as is generally found with normal hearing individuals. This is demonstrated by his low SISI scores.

Copies of Bekesy tracings bor both ears are also enclosed. These test results may be classified as Type I tracings which are those associated with normal hearing. His pen excursions on this test were no smaller than found with normal subjects.

In summary, it is my impression that has normal hearing with the exception of a slight loss at 3000 Hz. He does not demonstrate that he has superior hearing abilities.

Thank you for referring this patient to us. If you have further questions, please call.

Sincerely,

Diane Barrager

Diane Barrager, Ph.D.
Audiologist

DB/md
enclosures

CC: Robert H. Armbruster, M.D.

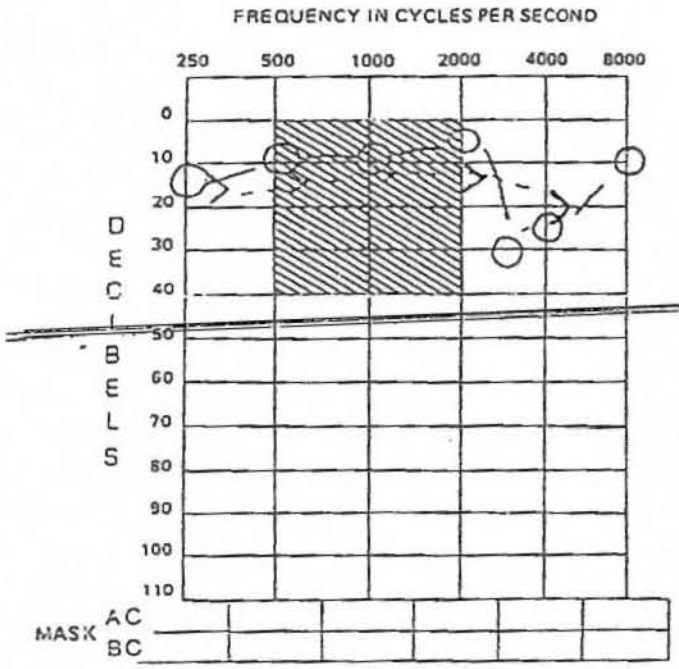
AUDIOLOGIC EXAMINATION

RODNEY PERKINS, M.D.
MEDICAL CORPORATION
OTOLOGY AND NEURO-OTOLOGY

1801 PAGE MILL ROAD
PALO ALTO, CALIFORNIA 94304
[redacted]
(415) 494-1000

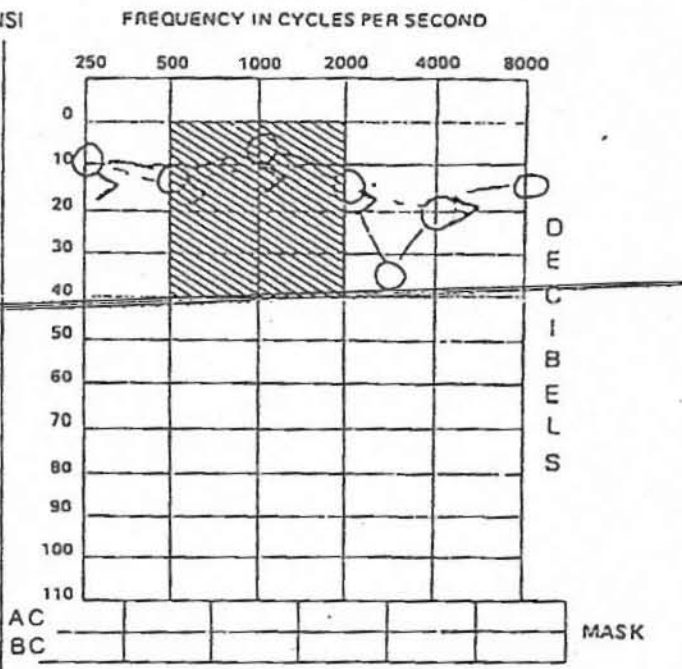
NAME S-1 AGE 55 DATE 3/1/74 TESTED BY DB

RIGHT EAR



ANSI

LEFT EAR



MASK

SPEECH RECEPTION THRESHOLD 5 dB

SPEECH DISCRIMINATION *

92 %@ +25 dB (LIST F)

96 %@ +15 dB (LIST G)

MOST COMFORTABLE LOUDNESS ____ dB

LOUDNESS TOLERANCE ____ dB

TONE DECAY ____ dB @ 0.5 Hz ____ dB @ 2 Hz

AVERAGE 8 dB

MASK

SPEECH RECEPTION THRESHOLD 5 dB

SPEECH DISCRIMINATION *

96 %@ +25 dB (LIST E)

92 %@ +15 dB (LIST H)

MOST COMFORTABLE LOUDNESS ____ dB

LOUDNESS TOLERANCE ____ dB

TONE DECAY ____ dB @ 0.5 Hz ____ dB @ 2 Hz

AVERAGE 10 dB

RIGHT EAR	OTHER TESTS	LEFT EAR
* 72% @ +5dB List D		* 56% @ +5dB List C
SISI @ 70dB @ 2KHz 60%; @ 50dB 10%		SISI @ 70dB @ 2KHz 40; @ 50dB 0%

COMMENTS:

O AIR CONDUCTION	⊙ AIR CONDUCTION MASKED	CNT COULD NOT TEST
› BONE CONDUCTION	‹ BONE CONDUCTION MASKED	DNT DID NOT TEST

TRACE	TONE		MASKING		20 dB	dB/SEC	OCTAVE/ MIN.
	[illegible]	[illegible]					
	[illegible]	[illegible]					
COLOR	C, P	(L) R, B		dB	0, +, -	1x, 2x, 5	½, 1, 2

SIS:	
FREQ.	%

NAME S-1 NO.
SEX M AGE 55
DATE 3/1/74 TIME BY: DB

HEARING THRESHOLD LEVEL IN DECIBELS
1964 ISO VALUES

-10 0 10 20 30 40 50 60 70 80 90 100

TO CONVERT ISO READINGS TO ASA READINGS SUBTRACT APPROPRIATE "DIFFERENCE IN dB" AT EACH FREQUENCY.

9 15 14 (17) 10 10 8.5 8.5 6 9.5 11.5

125 1.5 2 250 3 4 500 6 7 8 9 750 1000 1500 2000 3000 4000 6000 8000 10

FREQUENCY IN HERTZ

BÉKÉSY AUDIOMETER
GRASON-STADLER COMPANY, INC.
MODEL NO SERIAL NO

TRACE	TONE	MASKING	20 dB	dB/SEC	OCTAVE/MIN.	SISI FREQ.	SISI %
COLOR	C, P	L (R) B	dB	0, +, -	1½, 2½, 5	½, 1, 2	

NAME _____ S-1 NO. _____

SEX M AGE 35

DATE 8/1/74 TIME _____ BY DR

HEARING-THRESHOLD LEVEL IN DECIBELS — 1964 ISO VALUES

-10 0 10 20 30 40 50 60 70 80 90 100

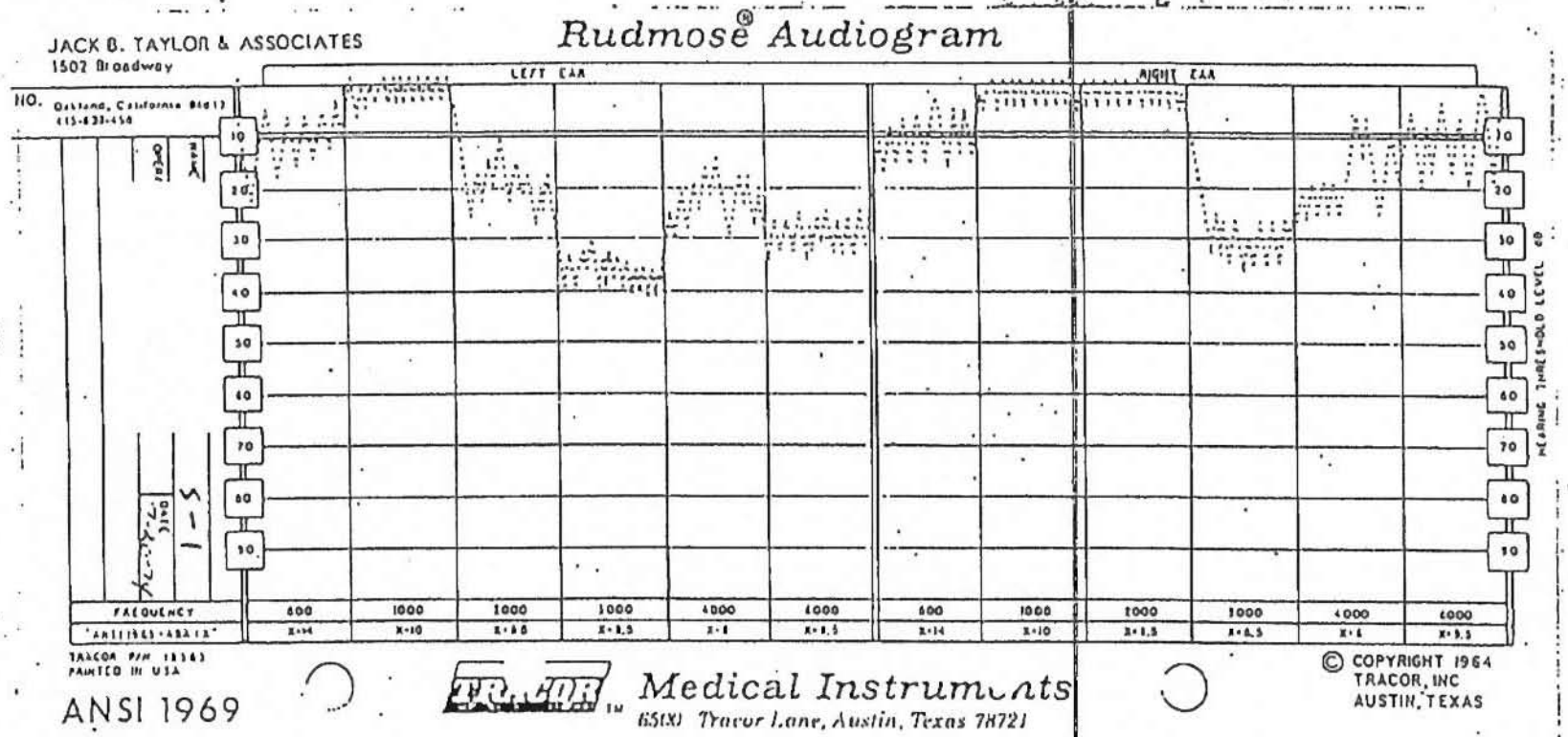
TO CONVERT ISO READINGS TO ASA READINGS SUBTRACT APPROPRIATE "DIFFERENCE IN dB" AT EACH FREQUENCY.

125	250	500	750	1000	1500	2000	3000	4000	6000	8000
9	15	14	(12)	10	10	8.5	8.5	8	9.5	11.5

1.5 2 3 4 6 7 8 9 10

FREQUENCY IN HERTZ

BÉKÉSY AUDIOMETER
GRASON-STADLER COMPANY, INC.
MODEL NO SERIAL NO



PALO ALTO MEDICAL CLINIC

300 Homer Avenue • Palo Alto, CA 94301 • (415) 321-4121

EMI COMPUTERIZED BRAIN SCAN

PATIENT'S NAME (Last / First / Middle)	PT. EMI NO.	PAMC NO.
5-1	370	55-88-60-3
COMPLETE ADDRESS (Street / City / State / Zip)		**PHONE:**
22444 Ainsworth Ave., Los Altos, Ca.		
REFERRING DOCTOR: COMPLETE ADDRESS		**BIRTH DATE:**
R. Armbruster, M.D. PAMC		12-18-18
REFERRING DOCTOR: COMPLETE ADDRESS		**BILL TO:**

7-30-74

There is slight enlargement of the entire right lateral ventricle while the left appears normal in size. The septum pellucidum, third ventricle, and pineal are midline. No parenchymal abnormality can be identified.

IMPRESSION: Negative scan except for slight enlargement of the right lateral ventricle.

Richard A. Kramer, MD./jab

17.146

CHART COPY

PALO ALTO MEDICAL CLINIC

Patient: S-1 Age: 55 EEG No.: 74-553

Referring Dr.: Armbrustor History No.: 55 88 60 3 Date: 7/31/74

PURPOSE: A 55 year-old right-handed man involved with a medical and psychological research program. pro

CONDITIONS: Patient alert and relaxed. Light sleep was obtained. Medications none.

BACKGROUND: Background activity consists of fairly well developed, rhythmical, 10/second alpha activity that blocks normally with eye opening. There was also some lower voltage faster rhythm seen in the anterior regions extending centrally. There is a minor asymmetry in that the alpha development is somewhat better on the right as compared with the left. As the patient drowses the background rhythm slows symmetrically, sleep spindles are seen, and normal vertex sharp waves are seen.

HYPERVENTILATION: No significant effect.

PHOTIC STIMULATION: Normal driving responses are seen.

IMPRESSION: This record is within normal limits. There is a minor asymmetry of alpha development in that it is slightly better developed posteriorly on the left as compared with the right. No other significant features are noted.

31 July 1974
bjw

George Perlstein, M.D.

S7

PALO ALTO MEDICAL CLINIC
300 HOMER AVENUE · PALO ALTO, CALIFORNIA 94301

July 1974
Perlstein/bjw

S-1 55 88 60 3

cc: Dr. Armbruster

NEUROLOGICAL CONSULTATION

He is a 55 year-old right-handed man who is referred by Dr.Armbruster for neurological consultation regarding a research project at Stanford Research Institute.

History is obtained from the patient.

He denies any health problems other than mild obesity and excessive smoking. has never been under the care of a neurologist in the past for any medical reason. He denies any headaches, difficulty with vision other than needing a correction for reading, numbness over the face or difficulty with his speech or swallowing. He reports no difficulties with gait, strength, sensory function or his coordination. There is no history of neurological-urological difficulties.

He reports that the last time he had to see a physician was in 1966 at the time of a vasectomy. He has had perfect health in the interval. The only other surgery than he has had besides the vasectomy was a tonsillectomy. In 1952 he was hospitalized overnight following a car accident in which he did not sustain any significant head injuries.

He denies any faints, episodes of unconsciousness or seizures.

He uses no medications on a regular basis. He denies the use of any alcohol. He smokes 2-2½ packs of cigarettes daily.

He is an SRI consultant, working on a parapsychology project.

On EXAMINATION he is a very pleasant, mildly obese gentleman who appears in no immediate distress. His speech and comprehension appear quite satisfactory. No word orders, perseveration or praphasias are noted.

His blood pressure is 130/80 in the right arm supine and standing. The carotid pulses are normal. No carotid or cranial bruits can be heard.

Detailed CRANIAL NERVE examination including fundi, extraocular movements visual fields, pupillary size and response, corneal response, facial sensation, facial motility, palate and tongue function are completely within normal limits. The optic kinetic response is symmetrical. There is no ocular dysmetria.

MOTOR SYSTEM: There is no drift to the outstretched upper limbs. Strength, tone and coordination with finger-nose testing and rapid alternating movements with the upper extremities are normal. His heel-knee-shin maneuver and rapid alternating movements with the feet are normal. The patient's gait is characterized by a mild decrease in swing of the left upper extremity as compared with the right, but it is otherwise satisfactory. He is able to balance quite satisfactorily on a single foot and tandem walk normally.

The Romberg is normal.

SENSORY EXAMINATION: Sensation in the 4 limbs is normal to touch, double

PALO ALTO MEDICAL CLINIC
300 HOMER AVENUE · PALO ALTO, CALIFORNIA 94301

S-1 55 88 60 3

July 1974
Perlstein/bjw

continued

stimulation, joint position sense and vibration. 2-point discrimination is intact in the upper extremities.

REFLEXES: The biceps, triceps, brathioradialis, knee and ankle jerks are trace with reinforcement bilaterally. There is no significant asymmetry. The plantar responses are downgoing.

IMPRESSION: I see no significant abnormalities on his neurological examination. His neurological history is unremarkable.

Aug 1974
Beal/gw

See letter this date.

89

[redacted]

August 9, 1974

Dear

It was a pleasure to do your physical examination and to report to you that by and large, you seem to be in good physical condition.

I do note however, that the cardiologist indicated that your EKG was not entirely normal. There are some changes suggesting coronary artery problem. Such changes of course, if progressive, can lead to eventual heart disease or heart attacks and I think it would therefore be very useful for you to consult your own physician in regard to preventive measures. If you do not have a physician, we would be happy to arrange for one of our cardiologists to see you here.

Sincerely,

Charles B. Beal, M.D.

CBB:gw

PALO ALTO MEDICAL CLINIC — ELECTROCARDIOGRAPHY SAI

5 -1 Dr. Bird Date 7-30-74

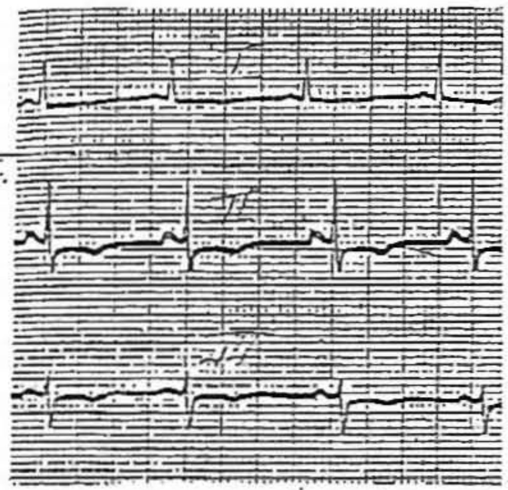
Hist. No. Age 55

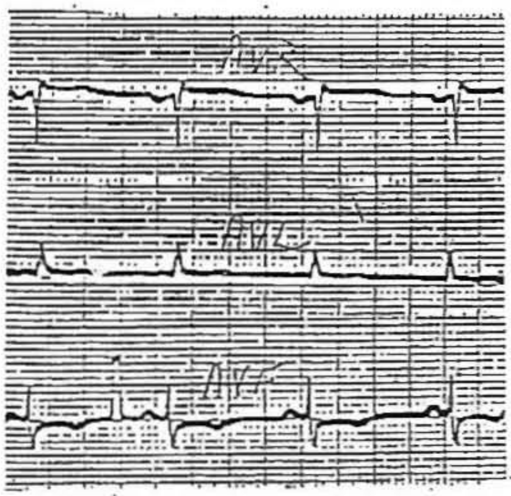
Rate: 75 Vent. Rate: 75 PR: .16 QRS: .10 Hx:

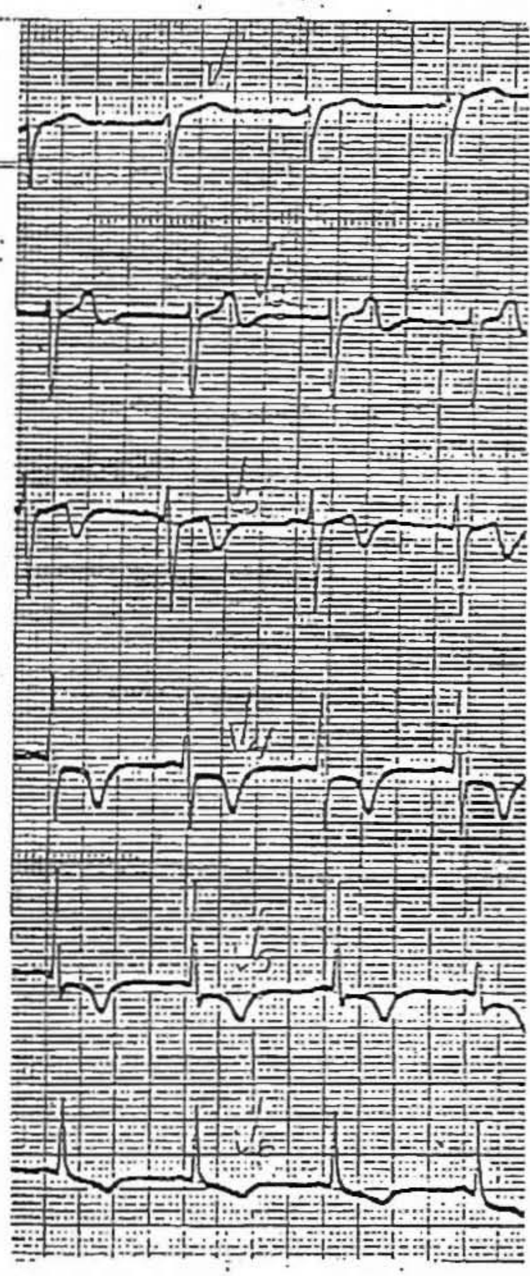
QT: QTc:

Interpretation: Abnormal EKG characteristic of Coronary Artery Disease incl. late and symmetrically inverted T waves with depressed ST segments in left precordial leads,

IOS







MORI DocID: 98322

PALO ALTO MEDICAL CLINIC

300 HOMER AVENUE · PALO ALTO, CALIFORNIA 94301

PATIENT NAME	HIST. NO.	DATE	DOCTOR
S-1	55-88-60	1/31/74	BEAL

ACCOUNT NO.: PAMC | ADDRESS | CITY | STATE

CHEMISTRY

Calcium	Phosphorus	Gluc. F.	BUN	Uric Acid	Cholest.	Tot. Protein	Albumin	Bilirubin	Ptase. Alk.	LDH	SGOT
8.5-10.5 mg%	3.0-4.5 mg%	65-110 mg%	10-20 mg%	2.5-8.0 mg%	150-260 mg%	6.0-8.0 gm%	3.5-5.5 gm%	0.2-1.0 mg%	30-85 IU/L	100-250 IU/L	10-40 IU/L

Magnesium	Gluc. 2 Hr. P.P.	Creatinine	Triglyceride	Cholest.	Globulin	Bill. Dir.	Ptase. Acid	Amylase	Lipase
1.5-2.5 mg%	<120 mg%	0.7-1.5 mg%	<165 mg%	150-280 mg%	1.5-3.0 gm%	0.1-0.4 mg%	1-5 KA units	50-180 units	<0.3 units
			207*	285*					

CPK	Gluc. Tol.	Gluc. Load	Sodium	Potassium	Chloride	BSP	Bill. Ind.	Ptase. Alk.	LDH	SGOT
0-70 IU/L	mg%	<120 mg%	135-145 meq/l	3.5-5.0 meq/l	98-106 meq/l	5 mg/kg <5%	0.2-0.7 mg%	5-13	29-92 IU/L	5-18 IU/L

Urine

ACCESSION NO.			CHARGE	LESS ADJ.
	F			
	1 hr.			
	2			
	3			
	4	APPEARANCE OF SERUM		
	5	SUPRA: NORM... CREAM.... SERUM: CLEAR... TURBID...	$10.00	

UNITED MEDICAL CLINICS LABORATORY • PALO ALTO, CALIFORNIA • M. A. KRUPP, M.D.

NAME (LAST, FIRST, MIDDLE) | NO. 55-88-60 | DATE 1/31/74 | DR. BEAL

ADDRESS: NUMBER, STREET | ACCT. NO. | CITY, STATE

BILL TO: S. R. I. NUMBER, STREET, CITY

INDUSTRIAL EXAMINATION

SEROLOGY

Hemophile Agglut	No.		Antibody Screen
	PATIENT	DONOR	
Rheum Factor	Blood Grp. A-B		
	Rho (D) pos		Coombs Dir.
ASO Titre	Hr' (c)		Indir.
Rubella antibody	Rh' (C)		Rh Antibody Titre 4:2
☐ Serol evidence past infection	Rh" (E)		
☐ No serol evidence of immunity	Du		
STS RL STS (NR) WR R	Cross Match 8/1		
☐ Pre marital ☐ Prenatal	☐ New Obs.	PALO ALTO MEDICAL CLINIC PALO ALTO, CALIFORNIA CHARGE / LESS ADJ.	No. 44454

UNITED MEDICAL CLINICS — M. A. KRUPP, M.D.

NAME (LAST, FIRST, MIDDLE) | NO. | DATE 7/30/74 | DR. BEAL

ADDRESS: NUMBER, STREET | ACCT. NO. | CITY, STATE

BILL TO: S. R. I. NUMBER, STREET, CITY

URINE

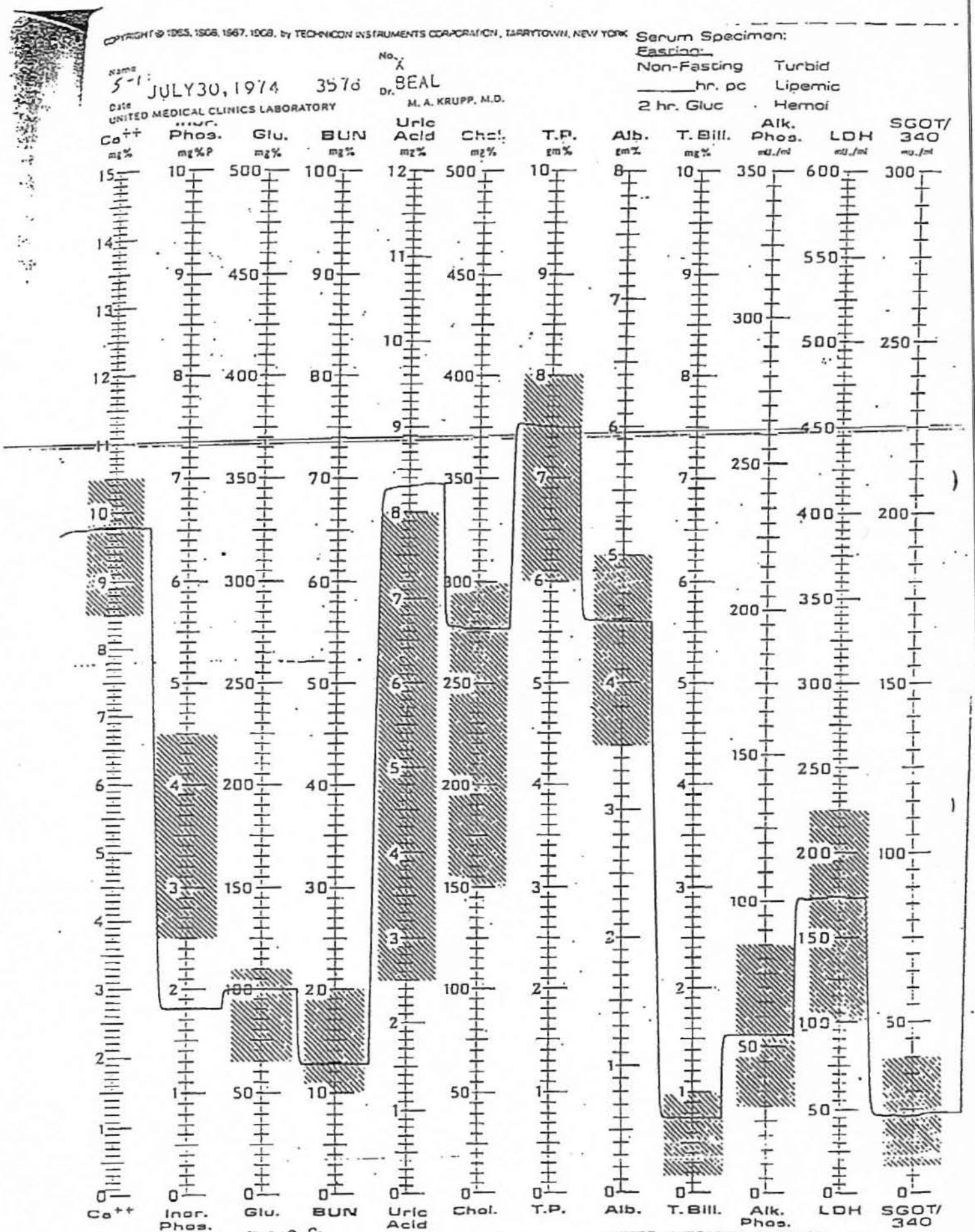
CHEMICAL TESTS		SEDIMENT: CHEM + MICRO
SG	1.0 14	Epithel EC.C
pH	(acid) neut base	WBC 0-1
		RBC 0-2
Protein	—	Casts
Glucose	—	sl mucus
Ketones	—	
Occ. Blood	—	
Bilirubin		
Urobilinogen		

PALO ALTO MEDICAL CLINIC PALO ALTO, CALIFORNIA CHARGE / LESS ADJ. — No. 36958

M. A. KRUPP, M.D.

92

MORI DocID: 98322



Name [redacted] 5-1 Date 7-30-74

Age 55 Sex M Height 67 Weight 166 Body Surface Area (BSA) _____ m²

Doctor Beal Tested By Bleyl

Forced Expiratory Volumes and Flow Rates (Before) (After) Bronchodilator

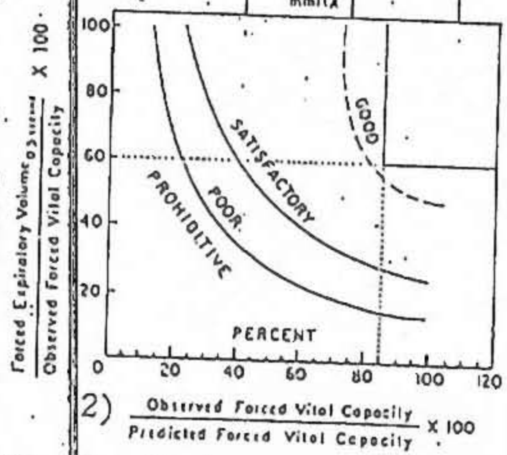
	Observed Volume, CC.	Determined Value	Predicted Value	Result
$FEV_{0.5}\%$ (½ Second)		1)		
$FEV_{1.0}\%$ (1st Second)	3000			
$FEV_{2.0}\%$ (2nd Second)				
$FEV_{3.0}\%$ (3rd Second)	2700			
Forced "Mid-Expiratory" Flow ($FEF_{25-75\%}$)		Liters Per Second		
Forced Expiratory Flow ($FEF_{0-25\%}$)		Liters Per Minute		
Forced Inspiratory Flow ($FIF_{0-25\%}$)				
Maximal Voluntary Ventilation (MVV_F) (or Maximal Breathing Capacity)		Liters Per Minute		
Minute Ventilation				
Degree of Dyspnea (MVV_F Minus Min. Vent./MVV_F)			Minimum Normal 70%	

Conclusions:

*Requires Residual Volume Modular Accessory ··Requires Rebreathing Pco_2 Analyzer

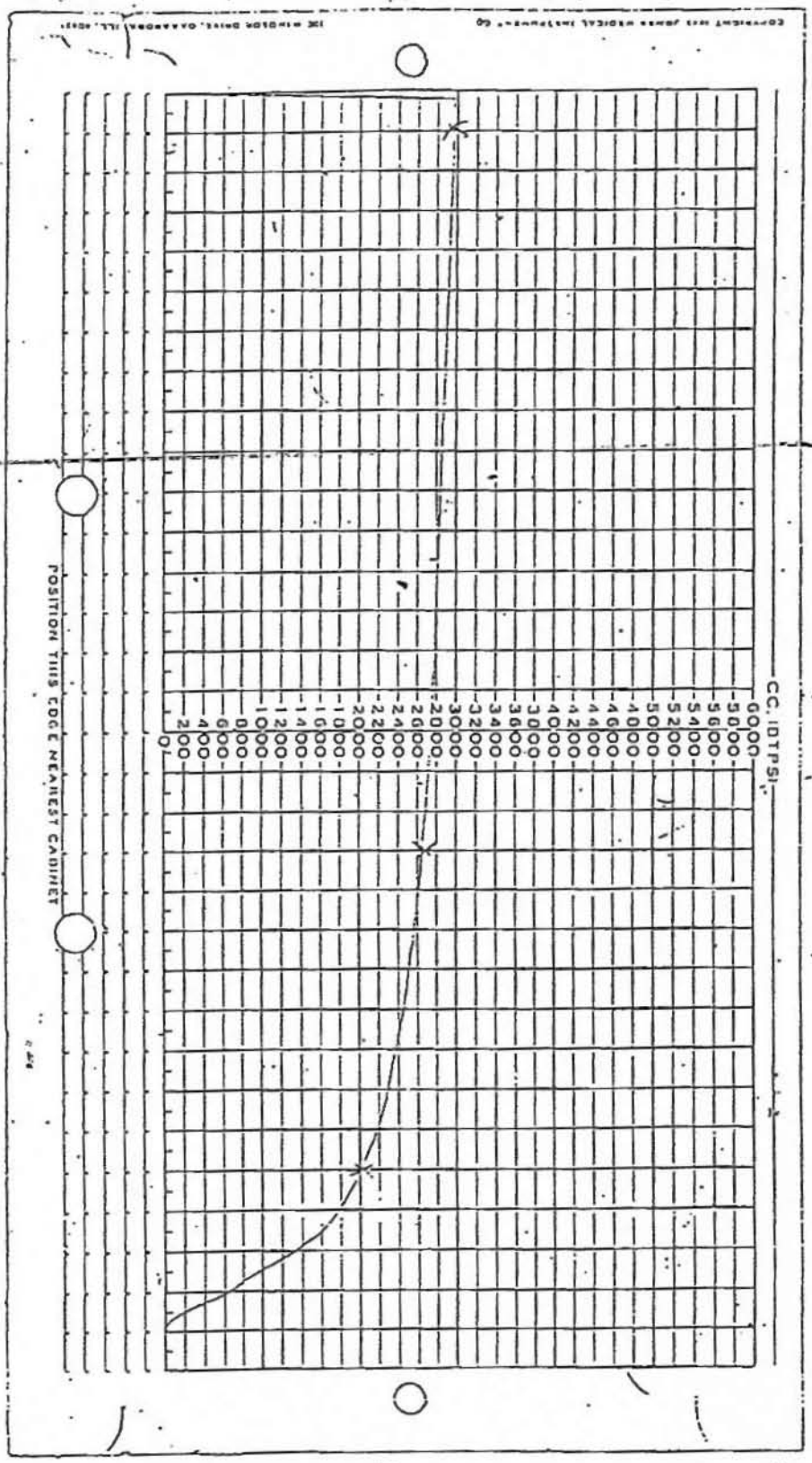
LUNG VOLUMES	Determined Volume	Predicted Value	% of Predicted
Vital Capacity	3000		2)
Inspiratory Capacity (IC)			
Expiratory Reserve Volume (ERV)			
Tidal Volume			
Functional Residual Capacity (FRC)	*		
Residual Volume (FRC−ERV)	*		
Total Lung Capacity (FRC + IC)	*		
RV/TLC	%*		
Rebreathing Arterial Pco_2	mmHg**		

1)



2) $\frac{\text{Observed Forced Vital Capacity}}{\text{Predicted Forced Vital Capacity}} \times 100$

Published with permission of Anesthesiology (Miller, W. F.; Wu, N.; and Johnson, R. L., Jr.: Convenient Method of Evaluating Pulmonary Ventilatory Function with Single Breath Test: 17:480-493 (May) 1956).
NOTE: Estimate of anesthetic surgical risk, altered by other disease factors.



PALO ALTO MEDICAL CLINIC

300 HOMER AVENUE · PALO ALTO, CALIFORNIA 94301

NAME [redacted] S-1 — NO. — DATE 7/30/74 — M.D. Pitts

LAST / FIRST / MIDDLE — ADDRESS: NUMBER / STREET / CITY / STATE

ACCT. NO.

BILL TO S.R.I.

SEROLOGY

Heterophile Agglut		No.		Antibody Screen
		PATIENT	DONOR	
Rheum Factor	Blood Grp.			
	Rho (D)			Coombs Dir
ASO Titre	Hr' ($\bar{c}$)			Indir.
Rubella antibody	Rh' (C)			Rh Antibody Titre
☐ Serol evidence past infection	Rh" (E)			
☐ No serol evidence of immunity	Du			
STS RL STS (NR) WR R	Cross Match			

☐ Pre-marital ☐ Prenatal ☐ New Obs.

UNITED MEDICAL CLINICS — M. A. KRUPP, M.D.

PALO ALTO MEDICAL CLINIC, PALO ALTO, CALIFORNIA — CHARGE — LESS ADJ.

No. 44455

NAME [redacted] S-1 — NO. — DATE 7/30/74 — M.D. Beal

LAST / FIRST / MIDDLE — ADDRESS: NUMBER / STREET / CITY / STATE

ACCT. NO.

BILL TO S.R.I.

HEMATOLOGY

DATE (Month/Day)	TEST	WBC x 10^3	RBC x 10^6	Hgb gm	Hct %	MCV μ^3	MCH $\mu\mu g$	MCHC %
NORMALS Male		5-10	4.6-6.2	14-18	40-54	80-97	27-32	32-36
NORMALS Female		5-10	4.2-5.4	12-16	37-47	80-97	27-32	32-36
7 30	146	07.6	5.34	16.3	48.2	09J.	.30.8	34.1

ESR	
DIFFERENTIAL	
N Seg	55 %
N Band	%
L	32 %
M	9 %
E	4 %
B	%
RETIC	%
PLAT.	

COMMENT: C.B.C. Edta, slide

PALO ALTO MEDICAL CLINIC — PALO ALTO, CA. M. A. KRUPP, M.D.

CHARGE — LESS ADJ. — No.

PALO ALTO MEDICAL CLINIC

300 HOMER AVENUE
PALO ALTO, CALIFORNIA

BLOOD AND RH TYPE

[redacted]

SRI

BLOOD TYPE: AB

RH: pos — M.D.: Meg

Du:

TO MEDICAL CLINIC [redacted] S-1 7/30/74

PHYSICAL EXAMINATION

Last First Middle Date Soc. Sec. No.

Date	S.R.T.		
BP / Pulse	WT 166 / BP 136/86 / P 84	WT / BP / P	WT / BP / P
Vision 20/	Far B 25 R 100 L 30 / Near B 20 R 25 L 22	Far B R L / Near B R L	Far B R L / Near B R L
Aided-with correction / Unaided-no correction	depth 50 / color ok / field R 90 L 85 / tonometry R L	depth / color / field R L / tonometry R L	depth / color / field R L / tonometry R L
Hearing R	500 1000 2000 3000 4000 6000	500 1000 2000 3000 4000 6000	500 1000 2000 3000 4000 6000
Hearing L			
Urinary Function	MBC / Fev 1 sec / 3 sec	MBC / Fev 1 sec / 3 sec	MBC / Fev 1 sec / 3 sec
Urinalysis	SpGr pH Alb Glucose 2hr K Blood	SpGr pH Alb Glucose 2hr K Blood	SpGr pH Alb Glucose 2hr K Blood
Micro			
Serology-Hematology	VDRL / Hgb gms / WBC	VDRL / Hgb gms / WBC	VDRL / Hgb gms / WBC
	L % N % E % M % B %	L % N % E % M % B %	L % N % E % M % B %
Chemistry	Glucose F / 2 hr / Uric Acid / Cholesterol	Glucose F / 2 hr / Uric Acid / Cholesterol	Glucose F / 2 hr / Uric Acid / Cholesterol
Papanicolaou Smear			
Xray	Chest / Mammography	Chest / Mammography	Chest / Mammography

	Defects or Diagnosis	Defects or Diagnosis	Defects or Diagnosis
Head, Face, Neck, Scalp			
Nose, Sinuses			
Mouth, Throat			
Teeth			
Ears			
Eyes			
Lungs and Chest	Attached		
Breasts			
Heart			
Vascular system			
Abdomen and Viscera			
Anus and Rectum			
Endocrine System			
G. U. System			
Upper extremities			
Hands - Feet			
Lower extremities			
Spine-musculoskeletal			
Body mark, scar, tattos			
Skin-Lymphatics			
Neurological			
Psychiatric			
Pelvic			

Recommendations:

Physicians Signature:

Social Security No. _____

Medical Record No. _____

PHYSICAL EXAMINATION

[redacted] [redacted] 5-1

(last) (first) (middle)

MEN

DATE 7/30/74

Audiometry Attach Tracing

	Loss: None	Slight	Moderate	Severe
45. R		V		
L		V		

Vital Signs

Temperature _____ Pulse 84 B.P. (sitting) 136/86

Body Structure

Height 6'4" Weight 166 lbs.

Skin Fold Triceps _____ cm

Abdomen _____ cm

Gross Abnormality or amputation 0

Mobility (if indicated)

(measurements from 0° neutral standing position)

Cervical Spine: Flexion deficit (to chest) 0 cm

Extension _____

Rotation R ___° L ___°

Lateral bending R ___° L ___°

Trunk: Flexion deficit (toes to floor) _____ cm

Extension _____

Rotation R ___° L ___°

Lateral bending R ___° L ___°

Legs: Disturbance of: Ordinary gait 0

Heel walk 0 Toe walk 0

Deep knee bend deficit: Flex 0 Recover 0

Shoulders: Elev. weakness (against resistance) 0

Arms: Rotation loss: Internal 0 External 0

Motion loss: Elbows 0 Wrists 0 Fingers 0

Painful joint motion 0

Head

Asymmetry 0 Masses 0 Edema 0

Skin or scalp lesions 0

Tremor 0 Fasciculations 0 Tic 0

Abnormal hair distribution 0 Other 0

Vision

	Both	R	L	Both	R	L
Uncorrected 20/						
Corrected 20/						

Wears Contacts attached

25 Depth	26 Color	27 Field R	27 Field L	28 Tonometry R	28 Tonometry L

Eyes

19. Eyebrow defects 0
20. Eyelid lesions 0 Crusting 0
21. Protrusions (beyond plane of rim of orbit) 0
22. Extraocular muscle imbalance 0
23. Nystagmus 0
24. Conjunctiva: Injection 0 Lesions 0
25. Scleral discoloration 0
26. Visual field defect (confrontation) 0
27. Pupillary light reaction absent 0 Asymmetrical 0
28. Iris: Asymmetry of shape and color 0
29. Arcus senilis 0 Corneal opacities 0
30. Opacities of lens or media 0
31. Discs: Cupping 0 Hazy margins 0
32. Vascular changes: Nicking 0 Other 0
33. Retinal or macular lesions 0
34. Other 0

Ears

46. Auricle: Lesions 0
47. Canal: Occlusion 0 Lesions 0
48. Drums: Perforated 0 Inflamed 0 Distorted 0
49. Other 0

Nose and Sinuses

50. Obstruction to breathing 0
51. Septal deviation Slight left
52. Mucosa: Pallor 0 Edema 0 Lesions 0
53. Discharge 0 Other 0

Mouth

54. Smile asymmetrical 0 Lip Lesion 0
55.* Teeth: Caries + Loss + Prosthesis 0
56. Gums: Inflammation + Hypertrophy 0 Pigmentation 0
57. Tongue: Asymmetry 0 Deviation 0 Tremor 0
58. Lesions of surface 0 Side 0
59. Lymphatic Tissue: Tonsils absent absent
Hypertrophy _____ Inflammation _____
60. Palate elevates asymmetrically 0
61. Mucosal lesions: Pharynx 0 Palate 0 Buc. 0
62. Other 0

* Not all teeth present or damaged

Neck

63. Asymmetry 0
64. Thyroid: Palpable 0 Enlarged 0 Nodularity 0
65. Other 0

Lymph Nodes (superior)

	Palpable	Enlarged	Tender
66. Submandibular	0		
67. Post Cervical	0		
68. Jugular chain	0		
69. Supraclavicular	0		
70. Axillary	0		

Dynamometry (grip)

71. R _____ lbs L _____ lbs adequate

Upper Extremities

72. Asymmetry 0 Atrophy 0 Nail Lesions 0
73. Tenderness: Joints 0 Muscles 0
74. Grip: Tenderness 0 Weakness 0
75. Finger tracking: Ataxia 0 Tremor 0
76. Other 0

NOTES: _____

MORI DocID: 98322

MEN

Deep Tendon Reflexes

R 0 L 0
R 0 L 0 } areflexia
R 0 L 0
R 0 L 0

Thorax and Back

...mmetry of shape 0
...lesions: Posterior 0 Anterior 0
...derness: Thorax 0 Spine 0 Muscle 0 CVA 0
...ture: Kyphosis 0 Lordosis 0 Scoliosis 0
...er 0

Lungs

...mobility of diaphragms 0
...ymmetry of breath sounds 0 Dullness 0
...les 0 Wheezes 0 Ronchi 0
...ther

Heart

...ythm Irregularity 0
...urmurs: Sitting 0 Reclining 0 Radiation 0
...rotid Murmur 0
...pex pulse palpable 0 Heaves 0
...levated venous pressure 0
...ther 0

Breasts

Nodules 0 Gynecomastia 0
Other 0

Abdomen

...rtic or renal artery bruit 0
Protrusions 0 Scars 0 Tenderness 0
Length of liver dullness in MCL 7 cm
Organs palpable: Liver 0 Spleen 0
Kidneys: 0 Aorta 0 Bowel 0
Tenderness 0
Hernia: Ventral 0 Umbilical 0
Femoral pulse asymmetry 0
Inguinal nodes: Palpable 0 Enlarged 0 Tender 0
Other

Lower Extremities

106. Asymmetry 0 Atrophy 0 Edema 0
107. Tenderness: Joints 0 Musculature 0
108. Motion loss of hips 0 knees 0 ankles 0
109. Painful motion 0 Knee crepitation R 0 L 0
110. Sciatic nerve stretch pain 0
111. Dorsalis pedis pulses absent R 0 L 0
112. Plantar reflexes abnor. Vibra. sense loss
113. Touch sensation Pin wheel
114. Heel-shin test abnormal Rhomberg sign 0
115. Foot configuration abnormal 0
116. Varicosities 0
117. Other 0

Genitalia

118. Skin Lesions 0 Edema 0
119. Penis: (Circ ✓ Uncir) Phimosis 0
Lesions of Glans 0 Meatus 0
Discharge 0
120. Testicles: Atrophy 0 Enlarg 0 Hydrocele 0
121. Epididymus Enlargement 0
122. Cord enlargement 0 Varicocele 0
123. Inguinal Hernia Small Hernia bilaterally
124. Other

Anus and Rectum

125. Skin lesions 0
126. Pilonidal cyst or sinus 0
127. Hemorrhoids 0 Skin tabs 0
128. Mucosal lesions of Anus 0 Rectum 0
129. Prostate: Tenderness 0
130. Enlargement 1+ symmetrical Nodules 0
131. Other

Mental

132. Perception: Disoriented 0 Unobservant 0
133. Thinking: Confused 0 Unintelligent 0
134. Emotion: Anxious 0 Depressed 0
135. Behavior: Uncooperative 0 Evasive 0
136. Speech: Hesitant 0 Stutters 0 Other defect 0
12 Language barrier (Native tongue)
137. Other

...ES:

...ARY: (1) Dental Caries — in process of restoration
(2) Areflexia — should be referred to Neurologist
(3) Small inguinal hernia bilat.
(4) Spots 2t ... Cigs daily

...ment Recommendation: Acceptable ✓ Not acceptable
Acceptable with Restrictions

...up Recommendations: To have EKG, [illegible], Ophth. exam, CBC, U/A, SMA panel, thyroid function. [illegible]

99

[redacted]

Social Security No. _____

Medical Record No. _____

MEN

INDIVIDUAL HEALTH SURVEY

[redacted] 5-1 (First) [redacted] (Initial) [redacted] Marital Status: M S W D Sep.

[redacted] CITY Los Altos STATE CALIF PHONE _____

CALIF PLACE OF BIRTH SALT LAKE BIRTH DATE: MO. 12 DAY 8 YR. 16 AGE 55

TITLE OR POSITION CONSULTANT WORK LOCATION: SRI HIRE DATE: _____

Countries you have visited in past two years

Date(s)	Country	Date(s)	Country

Check the YES or NO column for the following questions:

Yes	No		
	✓	1.	Have you received a medical discharge or disqualification from Military service or employment?
	✓	2.	Have you ever changed jobs for health reasons?
	✓	3.	Have you ever worked in a very dusty trade?
	✓	4.	Have you been frequently exposed to toxic chemicals?
	✓	5.	Do you often sleep less than 6 hours daily?
	✓	6.	Do you usually sleep more than 9 hours daily?
	✓	7.	Do you fail to get regular fairly strenuous exercise?
	✓	8.	Do you ever smoke?
	✓	9.	Do you usually smoke more than 10 cigarettes daily?

Has any member of your family had the following? Check YES or NO. If yes, indicate relationship:

Yes	No		
	✓	36.	Tuberculosis
	✓	37.	Syphilis
	✓	38.	Kidney Disease
	✓	39.	Cancer
	✓	40.	Anemia
	✓	41.	Diabetes (Sugar Disease)
	✓	42.	High blood pressure
	✓	43.	Heart attack before age 60

List all operations, and important illnesses you have had:

Date	Operation, Accident or Illness	Serious or Illness After-effects
1951	TONSILECTOMY	—
1971	VASECTOMY	—

Have you ever had: Chickenpox ✓ Mumps _____ Measles _____ German, 3-day, Rubella _____?

Have you EVER had, or have you NOW (Check at left of each item — If yes, state age):

Yes	No		
	✓	10.	Poor vision (interfering with driver's test)?
	✓	11.	Double vision, crossed eyes, or strabismus?
	✓	12.	An eye injury or disease?
	✓	13.	Difficulty in hearing?
	✓	14.	A draining ear?
	✓	15.	A sore in your mouth that healed poorly?
	✓	16.	Sinus trouble requiring medical treatment?
	✓	17.	Asthma or hay fever?
	✓	18.	A chronic cough?
	✓	19.	Coughing in which you brought up blood?
	✓	20.	Soaking night sweats or tuberculosis?
	✓	21.	Pleurisy or Pneumonia?
	✓	22.	Habit of heavy smoking?
	✓	23.	A broken rib or chest injury?
	✓	24.	Anemia?
	✓	25.	Scarlet Fever or Streptococcal sore throat?
	✓	26.	Rheumatic Fever, growing pains, St. Vitus Dance?
	✓	27.	Diphtheria, Malaria, or relapsing fever?
	✓	28.	Recurrent chills or fever (other than colds)?
	✓	29.	High blood pressure?
	✓	30.	A heart murmur?
	✓	31.	A heart attack or heart condition?
	✓	32.	An electrocardiogram (ECG) which was abnormal?
	✓	33.	Varicose veins of your legs?

Yes	No		
	✓	44.	Thyroid trouble or Goiter?
	✓	45.	Diabetes or sugar in your urine?
	✓	46.	Low blood sugar (Hypoglycemia)?
	✓	47.	Noises or ringing in your ears?
	✓	48.	Dizziness?
	✓	49.	A choking lump in your throat?
	✓	50.	Difficulty in swallowing?
	✓	51.	Hoarseness or loss of your voice?
	✓	52.	Need to constantly clear your throat?
	✓	53.	Heavy chest colds or bronchitis?
	✓	54.	Bleeding gums or nosebleeds?
	✓	55.	Pyorrhea or abscessed teeth?
	✓	56.	Bruising without obvious cause?
	✓	57.	Pain in your chest?
	✓	58.	Your heart pounding or racing?
	✓	59.	Shortness of breath while lying down?
	✓	60.	Inability to walk 6 blocks without stopping?
	✓	61.	Swollen ankles, hands or face?
	✓	62.	Tendency to black out when you stand up?
	✓	63.	Severe weakness or tiredness?

Social Security No. _____

Medical Record No. _____

MEN

Have you EVER had, or have you NOW (Check at left of each item — If yes, state age):

Yes	No		
	☑	Allergy to any medication?	
	☑	Eczema, hives or skin allergy?	
	☑	A mole becoming larger, darker, or sore?	
	☑	Psoriasis or other chronic skin conditions?	
	☑	A tumor or cancer?	
	☑	Arthritis or Rheumatism?	
	☑	Polio or a muscular disease?	
	☑	Bursitis or inflamed tendons?	
☑		A joint injury or dislocation?	FINGERS
	☑	A torn cartilage or fractured (broken) bone?	
	☑	A back injury or herniated disc?	
	☑	Osteomyelitis or a draining bone?	
	☑	A hernia (rupture)?	
	☑	Hemorrhoids (rectal piles)?	
☑		Stomach or Duodenal trouble or ulcer?	1952
	☑	Blood in your stools or black stools?	
	☑	Worms, parasites, amoeba, or tropical disease?	
	☑	Jaundice (yellow eyes or skin)?	
	☑	Liver disease or hepatitis?	
	☑	Tendency to drink too much alcohol?	
	☑	Gall bladder trouble or gall stones?	
	☑	Typhoid fever?	
	☑	Meningitis, Encephalitis or sleeping sickness?	
	☑	A skull fracture or serious head injury?	
	☑	Prolonged unconsciousness (10 min. or more)?	
	☑	Amnesia (loss of memory)?	
	☑	A stroke or paralysis of any part of your body?	
	☑	A fit, convulsion, seizure, or epilepsy?	
	☑	Mental illness or nervous breakdown?	
	☑	Seriously contrived or attempted suicide?	
	☑	Nephritis (Bright's Disease) or protein in your urine?	
	☑	A kidney or bladder infection or stones?	
	☑	Blood in your urine?	
	☑	Syphilis, Gonorrhea, or venereal disease?	
	☑	An abnormal swelling or disease of your genitals (privates)?	
	☑	A discharge from your genitals?	
	☑	Prostate gland trouble?	

Yes	No		
	☑	101. Itching, burning, or pain of the skin?	
	☑	102. Skin rash, eruptions, or acne?	
	☑	103. Cuts or sores which heal too slowly?	
	☑	104. Boils or staphylococcal infections?	
	☑	105. Severe or disabling backache?	
	☑	106. Stiff or painful neck?	
	☑	107. Stiff or swollen muscles or joints?	
	☑	108. Severe pains in your arms or legs?	
	☑	109. Weak or painful feet or bunions?	
	☑	110. A poor appetite?	
	☑	111. Indigestion or heart burn?	
	☑	112. Inability to eat certain foods?	
	☑	113. A bloated feeling or belching after meals?	
	☑	114. Indigestion relieved by milk or antacids?	
	☑	115. Severe weakness relieved by food?	
	☑	116. Frequent nausea or vomiting?	
	☑	117. Loose bowels, diarrhea, or stomach cramps?	
	☑	118. Constipation of *recent* origin?	
	☑	119. Severe headaches or migraine?	
	☑	120. Numbness or tingling in any part of your body?	
	☑	121. Fainting spells?	
	☑	122. Trembling or tremor in any part of your body?	
	☑	123. Nervousness or tenseness or worry?	
	☑	124. Frightening thoughts or recurrent bad dreams?	
	☑	125. Crying spells or depressed feelings?	
	☑	126. Desire to be dead or away from it all?	
	☑	127. Visions or voices unknown by others?	
	☑	128. The feeling that life has lost its meaning for you?	
	☑	129. The need to urinate frequently during the day or night?	
	☑	130. Burning, pain or spasm before, during or after urination?	
	☑	131. Loss of control of your bladder?	
	☑	132. Difficulty in starting your stream of urine?	
	☑	133. Dribbling after urination?	
	☑	134. Being impotent (unable to have an erection)?	

What medicines do you regularly or frequently take? None

Have you had recent exposure to any infectious disease? NO

What is your estimate of your health ? EXCELENT

When was your last complete physical examination? 1964

What frequent minor illnesses do you have? None

Do you have any symptoms at the moment? NO If so, describe them _____

Write out any additional facts the physician should know in order to better evaluate your health: _____

Notes: _____

ALTO MEDICAL CLINIC — MEDICAL HISTORY

Name [redacted] Last First Middle S-1 Date July 30, 1974 Soc. Sec. No. 560-14-0811

Address 22444 AINSWORTH Street — Sex ☑ Male ☐ Female — Race: — Marital Status ☑ Single ☐ Married ☐ Widowed ☐ Divorced

LOS ALTOS Telephone ____ Birthdate DEC 8 1918 Birthplace SALT LAKE CITY

Emergency Notify: (Next of Kin) Name ____ Address ____ City ____ Telephone: Home ____ Business ____

Personal Physician's Name: ____ Address ____

Fill in Answers and Check Positive Answers

Occupation:

Completed ___ Grade ☐ College ☐ Trade ☐ Technical
Completed ___ Yrs

Ever claimed Workman's Compensation? Yes ☐ No ☑
In past 3 years:
Number of Employers ____
Approx. Sick Days Lost ____

Have you ever worked in?
☐ Dusty trade (mining etc)
☐ Radioactive materials
☐ High Noise areas
☐ Work limited for health

☑ Had military service
☐ Deferred
☐ Medical Deferrment
☐ Medical Discharge
☐ Rejected for insurance

Where have you lived most of your life USA / Overseas

Family History:

Relation	Age	State of Health	If Dead, cause	Age
Father		DECEASED	HEART	91
Mother	92			
Spouse	37			
Brothers and Sisters	9			
	1	HILL WELL		
Children	SON			14
	DAUGHTER	HILL WELL		35
	"			33

Has any blood relation or spouse had? (check positive answers) — Relation

Yes		Relation
____	Diabetes	
____	Cancer	
____	Tuberculosis	
____	Asthma, Hay Fever, Hives	
____	Epilepsy	
____	Arthritis, Rheumatism	
____	Stomach Ulcers	
____	Heart Trouble	FATHER
____	Kidney Trouble	
____	Psychiatric Problem	

What operations have you ever had? Year 1932
Operation: JANUARY 1967
TONSILECTOMY

Were you hospitalized in the past 5 yrs? Year ____
Reason:
NO

Are you presently under your physicians care? Yes ☐ No ☑

Do you take medication regularly? Yes ☐ No ☑

Do you have or have you ever had? (check positive answers only)

Yes	Yes	Yes	Yes
____ Anemia	____ Broken Bones	____ Chest Pains	____ Nervousness
____ Allergies	____ Back Trouble	____ Ear Infections	____ Nervous Breakdown
____ Hemorrhoids	____ Back Brace/Support	✓ Hearing Difficulty	____ Recent Weight Change
____ Diabetes	____ "Whiplash" Neck Injury	____ Ringing in Ears	____ Poor Appetite
____ High Blood Pressure	____ "Trick" Knee	____ Dizziness	____ Change In Bowel Habits
____ Heart Disease	____ Painful Feet	____ Serious Head Injury	____ Recent Toothache
____ Frequent Headaches	____ Frequent Colds	____ Eye injury, disease, pain	____ Hoarseness
____ Fainting Spells	____ Persistant Cough	____ Kidney Disease	____ Difficulty Swallowing
____ Epilepsy	____ Asthma	____ Bladder Trouble	____ Abdominal Pain
____ Varicose Veins	____ Tuberculosis	____ Prostate Trouble	____ Blood in Stools
____ Heartburn or Indigestion	____ Pneumonia	____ Painful Urination	____ Stomach Ulcer
____ Swelling of Ankles	____ Pleurisy	____ Blood, Sugar in Urine	____ Hernia (Rupture)
____ Excessive-Fatigue	____ Sinus Trouble	____ Frequent Urination	____ Gall Bladder Trouble
____ Weakness	____ Hay Fever	____ Difficulty Sleeping	____ Tumor of any kind
____ Leg Cramps with Walking	____ Shortness of Breath	____ Nightmares	____ Cancer
____ Rheumatic Fever	____ Nosebleeds	____ Constant Worry	____ Skin Disease
____ Arthritis	____ Blood Spitting	____ Depression	____ Venereal Disease
____ Kidney Stones			____ Malaria
____ Hepatitis			____ Glaucoma
____ Are you Disabled			
____ Do you receive a pension			✓ Are you right handed
____ Have you ever received a pension			____ Are you left handed
✓ Have you ever received tetanus shots			✓ Do you use tobacco
			____ Do you use alcohol

FEMALES ONLY

____ Do you menstruate	____ Do you have bleeding between periods
____ Are your periods regular	____ Do you have excessive bleeding
____ Are your periods painful	____ Are you pregnant
____ Do your periods require bedrest	____ Number of pregnancies
	____ Number of miscarriages

The preceding answers are true to the best of my knowledge.

Signature [redacted]

Reviewed by: Physician's signature ____

Appendix 4

PRELIMINARY NOTES ON PSYCHOLOGICAL TESTING

Appendix 4

Preliminary Notes on Psychological Testing

Subject: 1 — Stanford Research Institute Study

Subj. 1 came in for testing on August 8, 1974. He was vociferous in expressing his opposition to testing, repeatedly stating that he came only to help out Dr. Puthoff, who had to have the data in order to complete his study. He seemed at pains to keep reassuring me that nothing we could do here would have any validity, and in fact there was one test which he refused to do outright, the Thematic Apperception Test, on the grounds that it was so subjective that no useful data could possibly come out of it and he wasn't going to waste his time on it. With all the other tests he gave at least a minimum degree of cooperation. On intelligence testing, his ambivalent feelings showed up consistently in that his efforts were quite sporadic. With some tasks he would work efficiently, clearly with a motivation to do well; with other tasks he would be haphazard and spend a lot of time telling me that the tasks didn't mean anything. In personality testing, motivational ambivalence of this sort can be compensated for in that there are built in aspects of most of the tests which are designed to cope with the different testing sets with which patients come in to the setting. Intelligence test materials are different, however. An invalid measure tends merely to under-estimate the subject's true abilities and the degree to which these abilities are under-estimated cannot be predicted accurately.

Test Data:

I. Intellectual Functioning

Subj. 1's responses to the Wechsler Adult Intelligence Scale show an overall Intelligence Score of approximately 121, with Verbal and Performance Skills about equally balanced. There is a spottiness of subskills within each of the major scales, which is typical when testing subjects have ambivalent motivation either about intellectual functioning per se or about intelligence tests specifically. Generally, motivational interference does not depress the intelligence score by more than 10 I.Q. points but, as stated earlier, this is a generalization and there can be exceptions. On this testing Subj. 1 showed highest subskill scores on tasks involving the acquisition of general information about the world, vocabulary skills, abstract reasoning, and interpersonal social perception. These high points may or may not reflect consistent aspects of his abilities. If they do reflect them, it would appear that Subj. 1 is somewhat better at dealing with whole concepts, with generalities, and with whole perceptions than he is at dealing with small analytical pieces of information.

The two specific memory tests used, the Wechsler Memory Scale and the Benton Visual Memory Scale, showed short-term memory which is about on a par with what one would expect from his overall ability. It showed no particular facility for verbal material, visual material or rote memory material, but his short-term memory was about equally good regardless of the information channel employed.

On the Bender Gestalt Visual Motor Coordination Test, Subj. 1's figures were approximately accurate. The overall configuration was adequate in all cases, but he had very little patience for working out details or making them precisely the same as the figures shown. This would appear to have been a motivational issue for him at the time, since he was complaining about wasting his time on testing which couldn't mean anything.

II. Personality Test Data

At present, only projective test data is available. Subj. 1 is to mail back the remaining tests after he has completed them on his own. The most outstanding aspects of the Rorschach are: (1) the overuse of shape and form determinants at the expense of color and shading, and (2) the relative infrequency of human figures. To explain further, Subj. 1 appeared to be frequently responding to elements of the ink blots other than the form and shape. That is, he saw a coal mine on a card on which there is a heavily shaded black area, but he denied that either the color or and shading had anything to do with his seeing a coal mine. Rather, it was just the outline form of the figure. This kind of apparent use of color and shading, followed by denial that they were being used, was frequent in the record. Typically, such a pattern of response accompanies tendencies to deny emotionality, both strong and soft emotionality, and tendency to over-emphasize intellectuality. People who are uncomfortable with their own feelings and with the feelings of other people tend to over-emphasize intellectuality in this way. That is, they act on their feelings but they deny the feelings to their awareness and find logical reasons for what they do instead.

An absence or relative infrequency of human figures is common in adults who have not developed mature empathy for other people and who tend instead to fill their lives with activities, work, business, objects, and occasionally animals. Typically, a lack of empathy for other people is accompanied by a lack of insight into the self and particularly into one's own emotions. Once again, discomfort with emotionality would be predicted.

A third aspect of the Rorschach record, not as outstanding as the first

two but still fairly consistent throughout, is the tendency to see whole responses in each card and to omit any reference to partial images. Whole responses are common to two groups of people: (1) very intelligent people, and (2) very ambitious people. When whole responses are so predominant that they are more than half of the total test record, one suspects a tendency toward over-achievement. When these responses retain good form and content, the person may be overstriving but appears to be doing so successfully. When the form level and content of the whole images break down, one is likely to find unsuccessful attempts to achieve at levels above the person's ability and one is also likely to find that other aspects of the person's life are suffering in the service of constant achievement. This record certainly shows an overbalance of whole responses; that is, more than half of the responses given are whole responses. But by and large, the content and the form level are good, above average, showing the retention of essentially good ego strength even if personal needs are suffering at the expense of achievement.

Finally, the Luscher Color Test: Subj 1's choices of colors on both trials were the same. Most test subjects retain some similarity on both trials but show more flexability in color preferences. Luscher's thesis is that when both choices are identical, there is evidence of rigidity in personal style, a dogmatic approach to life. The color choices made predict a desire for release and contentment, a need for approval from others and help from others, a need for warmth and understanding and openness to new ideas, and a changeability of interests, particularly interests in other people. The color choices also predict an existing personal style which tends to be self-interested, stubborn, determined, refusing of compromise or concession with others. Certain characteristics are also predicted to be present but currently under restraint. In this case, under restraint would be distress when his needs and desires are misunderstood, feelings of needing someone to rely on, hurt feelings when such needs are disappointed. Characteristics which are actively rejected tend to be willingness to become emotionally involved and to achieve sexual satisfaction, and effort to avoid conflict. By this, Luscher means that sexual frustrations are present, that bodily needs as well as emotional needs are being denied, and that the emotional needs which are particularly denied tend to involve interpersonal relationships. There is predicted an unsatisfied need to ally the self with others. The frustration occurs because such an alliance is regarded as evidence of weakness, which should be overcome so that individual self-sufficiency is regarded as an ideal of strength. According to Luscher, the current problem is a fear of being prevented from achieving all the things he wants to achieve, which leads him into a restless search for satisfaction and a pursuit of meaningless activities.

Further notes will be made as the objective personality data comes in and a comprehensive report will follow at the end of the study.

s/ Karen L. Nelson

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