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Final Report--Objective C, Task 5

December 1986

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NEUROPSYCHOLOGICAL ASSESSMENT OF PARTICIPANTS IN PSYCHOENERGETIC TASKS

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I INTRODUCTION

The neuropsychological assessment of participants in SRI International's psychoenergetic program* was begun in an exploratory manner in FY 1986. Client interest in exploring brain mechanisms or processes that correlate with psychoenergetic functioning led to SRI's engagement of Dr. Ralph J. Kiernan, a neuropsychologist at the Stanford Medical School, as a consultant to provide direction in this effort. Dr. Kiernan had provided consultation in the area of psychological testing during the early years of psychoenergetic research at SRI, and in the intervening years has become a specialist in the area of neuropsychology. Our purpose was to begin laying the groundwork for eventual experiments in the area of brain function and psychoenergetic phenomena.

*This report constitutes Objective C, Task 5, discussing neuropsychological assessment of participants in psychoenergetic tasks.

III RESULTS

Using a 1 to 5 scale, where a 1 and 2 would be expected to do poorly on psychic tasks and a 4 and 5 would do well, Dr. Kiernan ranked each of the 95 subjects according to the following WAIS criteria:*

(1) Performance subtest scores (especially picture arrangement, block design, and object assembly) should be higher than verbal subtest scores.
(2) Similarities subtest scores should be higher than information subtest scores.
(3) Object assembly scores should be higher than block design scores.
(4) Picture arrangement scores should be higher than picture completion scores.
(5) Picture arrangement scores should be higher than digit span scores.
(6) In general, picture arrangement should be among the best performed of the subtests.
(7) In general, digit span or arithmetic should be among the lower subtests.

An informal test of the power of Dr. Kiernan's criteria was done by comparing his rankings to the performance of subjects selected for two FY 1986 experiments: a pilot search experiment, and a novice remote viewing training experiment.

Table 1 shows Dr. Kiernan's ratings of 29 subjects used in the pilot search experiment. According to his criteria, those individuals in the High Middle and High categories would be expected to do well on psychic tasks. Four of the persons who showed overall p–values of less than 0.05 ranked in the High Middle and High categories. Subjects 570 and 933 were in the expected direction, although not significant ($p < 0.26$ and 0.14, respectively). Subject 111 showed significant ($p < 0.05$) target avoidance on both the time and space conditions. Three persons who showed significant p–values ($p < 0.05$) failed to fall into one of the expected categories.

*The Appendix contains Dr. Kiernan's review and critique of the PAS, his own theory of how WAIS data could be used to predict psychoenergetic functioning, and recommendations of specific neuropsychological tests to differentiate persons having psychoenergetic talent from the general population.

IV DISCUSSION AND CONCLUSIONS

The results of Dr. Kiernan's WAIS criteria for distinguishing psychoenergetic talent, as derived from his admittedly speculative frontal lobe theory (see Appendix), are encouraging in several areas. First, although the results are only suggestive, it appears that the WAIS criteria effectively separated the abilities required for two different types of psychoenergetic functioning, namely the computer search task from the remote viewing task. The good search subjects fell into his top categories while the good remote viewing subjects ranked in the bottom categories. This result converges with PAS data showing different personality types doing well on some psychic tasks as opposed to others. To test this assumption further, WAIS data from subjects in previous search and remote viewing studies could be blindly ranked by Dr. Kiernan according to his criteria.

A second area for future research would be an experiment designed to test the correlation of quantitative measures of psychoenergetic function with levels of positive frontal function using the tests of positive frontal function recommended by Dr. Kiernan (see the Appendix). High correlations of these data could lead to a beginning understanding of brain processes involved in psychoenergetic functioning.

Regarding Dr. Kiernan's criticisms of the PAS, it should be noted that at the time of his report procedural difficulties made it impossible to give him access to our previous work with the PAS. His criticism of the empirical use of the PAS without the advantage of reviewing these studies must be seen in this light. In fact, we had decided to use the empirical method as a way of testing the PAS, which had been used successfully in other applications. The empirical approach is a common one in an exploratory area. If, at some point, enough clustering can be found with repeated testing of calibrated individuals, the test gains predictive value regardless of how the scores are derived.

The issue of whether we can make valid personality assumptions from PAS scores is a more substantive one. Dr. Saunders has not had the opportunity to formally reply to this critique. However, we recognize that a part of the PAS (the so-called fourth dimension) is still in a developmental phase and, also, that the PAS as a whole has not gained wide

Appendix

STATEMENT OF WORK ACCOMPLISHED FOR THE

SRI PSYCHOENERGETICS PROJECT

By

Ralph J. Kiernan, Ph.D.

Approved For Release 2000/08/10 : CIA-RDP96-00787R000300160001-3

TASK I: A REVIEW AND CRITIQUE OF THE PERSONALITY ASSESSMENT SYSTEM

In the late 1950s and early 1960s John Gittinger devised an innovative personality assessment system based on scores obtained on a standardized intelligence test, the Wechsler Adult Intelligence Scale (WAIS). He felt that certain WAIS subtests could be used to determine basic response styles of the individual which would have major implications for personality development. He defined three basic factors or "primitive level dimensions." These were thought to represent innate tendencies that the individual is born with. He then added two additional layers of complexity based on other WAIS subtest scores. The first were "compensations," which represented evidence that an individual has partially filled in or compensated for an area of weakness. These compensations were supposed to be accomplished early in development. The second were "modifications," again based on the WAIS subtest scores. These scores were thought to reflect later refinements or developments that were less deeply rooted in the individual and were considered "surface qualities." He also considered an independent dimension called "activity level" which he based upon scores on the Digit Symbol subtest.

The most central and indeed the most interesting aspects of Gittinger's theory involved the primitive level dimensions. There are three such dimensions (1) externalized-internalized --ssessed by the digit span subtest, (2) regulated-flexible--assessed by the block design subtest, and (3) role adaptive-role uniform--assessed by the picture arrangement subtest. The internalized individual is someone who scores high on the digit span subtest and is theoretically oriented toward private or internal mental processes. The externalized individual scores relatively low and is generally oriented toward the outside world. The regulated individual scores high on the block design subtest and is capable of a narrow focus of concentration. The flexible individual scores low on the block design subtest and tends to be distractable, responsive, and sensitive. The role-adaptive individual scores high on the picture arrangement subtest and is thought to be highly adaptive to external social demands. The role-uniform individual scores low on the picture arrangement subtest and tends to be more individualized in social stance often to the point of being socially inappropriate. These three basic dimensions define eight basic primitive types. An example might be the EFA individual who is externalized (E), flexible (F) and role adaptive (A).

Gittinger's basic model appears to have been modified only in a small way by Saunders. The WAIS subtests, which determine compensation and modification, are now included in

nonverbal skills. Certainly the broadest and most coherent factors associated with the WAIS are the verbal and performance factors. These have been shown to meaningfully characterize the major classes of learning disability, and they have been shown to be differentially affected by lateralized left- or right-hemisphere brain dysfunction. The data have been so strong and so consistent on this point that one might suppose that a personality system based on the WAIS would start with these two broad dimensions.

The PAS system has a more fragile basis, the WAIS subtest scores themselves. These scores are less reliable than are the overall verbal and performance IQ scores, and they do not have the expected advantage of representing isolated, pure skills. The WAIS subtests are far from pure, and they often involve multiple factors. Saunders himself pointed out three different types of analysis that appear to be involved in the picture completion task. Picture arrangements, one of the important PAS primitive level determinants, has at least two aspects, a simple recognition of physical action sequences and an appreciation of the human implications of a given scene. The former factor might well relate more to the PAS dimension of regulated versus flexible rather than that of role adaptive versus role uniform. At best, therefore, the subtest scores from the WAIS will only partially reflect the personality variables of interest. In addition, however, one must not lose track of the fact that the WAIS subtests were first and foremost designed as measures of intellectual ability. They are highly intercorrelated with each other, and they each reflect specific skills for any individual. The fact that individuals have poor skill in a highly spatial task (such as block design) does not imply that they are flexible in their thinking. They in fact may be highly focused, regulated individuals who simply lack good spatial abilities. That is why it may be true that the very high score on the block design subtest is not a highly focused, regulated individual; it need not follow that low scores have the opposite personality style. It may, in fact, be hoping to extract too much information from a simple test of skill.

Despite these criticisms, Gittinger's hypotheses about the primitive level type are intriguing. He has established a clear rationale that could easily have substantial validity. I have not even attempted to review the enormous PAS literature on this. Nevertheless, there are a number of specific hypotheses about the relationship between certain WAIS subtests and personality that are potentially easily tested. The problem arises with Gittinger's additional levels of compensation and modification. He appears to be implying that a given individual might well fill in areas lacking in his inherent personality and assume a surface level style dramatically different from his primitive type. When these two variables are added to the model, the implications of the initial primitive types becomes unclear. Indeed, now almost

have psychic abilities. The PAS is essentially a statistical system which can only determine the cells that such subjects might occupy within the PAS and speculate that individuals in the same cells should have similar abilities.

TASK 2: A GENERAL MODEL FOR PSYCHIC ABILITY

Background

I had become interested in developing a new idea to explain the functioning of the frontal lobes long before my association with the SRI Psychoenergics Project. I had been attracted by a unique feature of the neuroanatomy of the frontal lobes; they represent the only area in the cerebral cortex that receives direct external sensory information from all cortical association areas, as well as direct input from enteroseptors monitoring the internal state of the organism. The confluence of cognitive data from the one system and affective data from the other could have important implications for the unique and important functions of the frontal lobes. It was clear to me from the research literature and from my own experience in neuropsychology that the frontal lobes did not have a primary involvement in simple cognitive functions such as are measured by standardized intelligence tests. However, they did appear to have a principal role in human affect and in the basic personal sensitivity that defines us as individuals. I knew also that intellectual tasks that were more open ended and unstructured were affected by frontal lobe dysfunction. Although I understand very little about the nature of psychic abilities, I thought that there may be some important similarities worthy of further exploration. With this in mind I proceeded on my portion of the SRI project.

I had to pose the question to myself about the nature of psychic abilities. I judged such skills to be subtle ones that are easily lost track of when everyday intellectual processes take over. Support for this idea came from my knowledge of the SRI subject training. In training for the remote viewing experiment, subjects had to give up specific verbalizing or visualizing techniques. That is, if they rushed too quickly to name what they were viewing, they would more often than not select incorrect names and obtain poor results. Similarly, if they pushed too hard for a specific visual picture, they would close off on a well formed incorrect image and again lose track of the subtle signal. In fact, they were trained to give up well established intellectual structures and proceed in an almost totally unstructured way. It impressed me that

and second is to formulate rules based on the WAIS data already available to me for selecting psychic subjects.

In order to select an appropriate test battery, it was crucial to distinguish between frontal-positive and frontal-negative tests. By frontal-negative tests I mean those neuropsychological instruments that are easily performed by the normal individual but difficult for the frontal-damaged patient. These tests therefore are sensitive to dysfunction or negative function in the frontal lobes. The counts and sort test, the Strupe color naming test and Milner Bolt Head Maze Ttst are three good examples of frontal negative tests. These tests, however, are of little use in a study of psychic subjects because they, in fact, have no potential for distinguishing average individuals from those having high psychic ability. This is why the concept of frontal-positive tests was postulated. Frontal-positive tests are those that require the special functions of the frontal lobe but which have wide range of functioning within the normal population. Assuming that the skill that produces this range is precisely that one that makes it sensitive to frontal functioning, such tests might be positive measures of frontal lobe function. The Halstead Categories test and the Verbal Concept Attainment test are two good examples. Assuming that I am correct in postulating frontal mechanisms for psychic functioning, such tests should be particularly sensitive.

I am presently assembling a battery of tests that draws from three sources: (1) commonly used frontal-sensitive tests, (2) other available tests not usually associated with frontal functioning, and (3) new tests of my own development. I have already mentioned the Halstead Categories test and the Verbal Concept Attainment test; I also plan to use the Controlled Word Fluency test. Available tests that are not typically associated with frontal functioning are the whole class of productive operations tests designed by Gilford and his colleagues. These tests, most often considered tests of creativity, have been ordered and will be available shortly for use. The third source is tests of my own development. I have found this work far more difficult than I initially imagined. It was easy to create frontal-negative tests, but far a ranging frontal-positive test is much more difficult to design and, to date, I have made progress in developing only one such measure. I plan to finish the development of this shortly and use it in my test battery.

Second, the frontal model was used to formulate criteria based on the WAIS subtests for selecting subjects from the pool of 95 evaluated by SRI. The following criteria were proposed.

1. In general, the performance subtests should be better performed than the verbal ones. In this comparison primary weight was given to three of the performance subtests (picture arrangement, block design, and object

6. In general, I wanted picture arrangement to be among the highest or best performed WAIS subtest.

7. In general, I preferred digit span or arithmetic to be among the lower subtests.

Based on all of these comparisons, I made an informal summation in ranking of each subject in terms of potential psychic ability. I kept to the 1-to-5 scale and ranked each subject accordingly. I was surprised to discover that very few subjects in the pool of subjects scored high, that is 4 or 5 by my criteria. Indeed only 2 of the 95 subjects received ratings of 5. These were subjects numbers 158 and 300. Only 11 subjects received ratings of 4: 111, 415, 428, 432, 530, 615, 677, 697, 790, 854, and 933. I expected that my selection criteria would be, at best, weak in predicting psychic ability because I had little hope of the sensitivity of the WAIS subtests in general. However, I did hope that they would at least predict subjects in the right direction. I had the opportunity to do a partial testing of these criteria by reviewing with Nevin Lantz the results of his random number generator search experiment. My predictions were surprisingly effective. Although I had only selected a few of the 95 subjects in my two highest groups, I had in fact correctly identified a number of his best performers.

In summary, I have reviewed the PAS, and I feel that it has tried to do far too much on such a narrow basis (the WAIS). Although Gittinger's initial hypotheses are intriguing, the present statistical model of the PAS (including the fourth dimension) impresses me as arbitrary and unconvincing. I personally would prefer some specific hypotheses about the skills involved, the skills possessed by individuals in certain PAS cells and how those skills might relate to psychic abilities. Instead, only statistical charts are offered. I have also gone far in developing my own model of the frontal lobe. I believe that this model explains a number of disparate facts in the literature that have previously been difficult to reconcile. Lastly, I have used this model to propose a new battery of tests for use with SRI's psychic subjects, and to devise new criteria based on the WAIS for selecting subjects with psychic ability. I expect to continue using this model and testing it over the coming year.