SOCIAL FIGURE RESPONSES OF SOCIAL INADEQUATES AND NORMALS

by Sheldon Murray Mooney

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CURRICULUM STUDIORUM

Sheldon Murray Mooney was born June 19, 1934, in Seattle, Washington. He received the Bachelor of Arts degree from the University of Manitoba, Winnipeg, in 1956. He received the Master of Arts degree in Psychology from the University of Toronto in 1960. The title of his thesis was Israeli and Canadian Preferences for Judged Masculine and Feminine Styles.

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INTRODUCTION

James L. Kuethe, in investigating the arrangements made by undergraduates of various sets of social and non-social felt figures, discovered that in addition to there being arrangements having high commonality of response, there were some which were seldom given. He hypothesized that these "idiosyncratic" figure arrangements could be related to disturbed social thinking. Kuethe also discovered that in a free arrangement situation the subjects tended to place some of the figures closer together than other figures, and that in a situation calling for the exact replacement of various pairs of figures, there seemed to be some evidence of systematic distortion. Little theoretical explanation of these results was given.

In order to extend Kuethe's exploratory findings and to generate some theoretical understanding of the phenomena involved, systematic investigation of the social figure responses produced by both normals and socially inadequate individuals seemed warranted.

This report describes three experiments subsequently carried out. The first chapter presents a review of the few studies which to date have been published on the social figure technique. Social inadequacy is then defined, followed by a presentation of Norman Cameron's social role theory.

The formulation of the basic hypothesis is followed by a description of the experimental design. A modified version of Kuethe's technique is described, followed by a description of the three experimental procedures and the two samples. After the definitions of the basic terms are stated, the seven sub-hypotheses are presented along with their required statistical operations.

The results obtained in this investigation of the social figure arrangements of normals and social inadequates are thereupon presented and discussed. The reliability studies for the common-idiosyncratic responses, for the separation distances of the freely arranged figures, and for the reconstructed figure separation distances are presented. Qualitative aspects of the idiosyncratic and common responses are discussed and the frequencies of these responses for the two samples are compared. Concordance studies of the separation distances of freely arranged figures and of the separation distances of replaced figures are discussed. Differences between normals and social inadequates with regard both to freely arranged figure separation distances and to reconstructed distances are described.

Following the conclusions are suggestions for further research. An appendix provides illustrations of the types of responses as well as an abstract of the thesis.

CHAPTER I

REVIEW OF THE LITERATURE

This chapter begins with a discussion of the work that has to date been published on the social schema technique devised by James L. Kuethe. It is followed by a brief justification for the consideration of schizophrenics as individuals with disturbed interpersonal relationships. To provide a theoretical background for the interpretation of the results, Norman Cameron's social role theory is introduced. The chapter concludes with a summary and statement of the basic hypothesis.

1. Kuethe's Social Schema Technique.

A unique series of experiments involving social figure arrangements has recently been published by James L. Kuethe. The central goals of the first experiment were to develop a technique for exploring what Kuethe[1] calls "social schemas" and, utilizing the technique, to investigate specific social schemas used by subjects in a variety of situations. Regarding the use of the term "social

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1 James L. Kuethe, "Social Schemas", Journal of Abnormal and Social Psychology, Vol. 64, January, 1962, p. 31-38.

schema", Kuethe[2] states that when a person indicates that two objects belong together, he has employed some schema or plan, and if these objects are people or people symbols, the schema employed may be considered by definition a social schema.

For his first experiment, Kuethe constructed a tool consisting of a blue felt background, six feet long and seven feet wide, and the following sets of plain yellow felt objects ranging in height from seven to ten inches:

1. Woman and child
2. Man and child
3. Three rectangles, each of different height
4. Man, woman, and child
5. Man, woman, and dog
6. Square, circle, and triangle
7. Man, woman, and two rectangles
8. Two women and two rectangles
9. Three men and three rectangles

No explanation was given for the inclusion of the various figures. The questionable assumption was made that the child figure was ambiguous enough to appear either as a boy or a girl.

The subjects - one hundred male undergraduates of Johns Hopkins University - were instructed to place each set on the field in any manner desired. Relative placement of the objects and distance between the objects were recorded before the removal of the set and the random presentation of the next set.

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2 Kuethe, Op. Cit., p. 31.

Kuethe[3] found that for each of the nine sets of objects over ninety per cent of the subjects gave organized arrangements with scattered placement of the figures being very rare. Independent of the schemas based on the specific content of the objects, a general basic schema was evident in the placement of the objects in a horizontal row - the figures being parallel and vertical as though standing on an imaginary base in the middle of the field.

The ordering of the objects was determined by the schemas based on specific content. Kuethe discovered various social schemas having high commonality. He found a strong social schema that people belong together and that nonhuman objects should not intervene. The man and woman figures of set 7 were grouped to a significantly greater extent than were the two identical rectangles of the set, contraindicating the mere grouping of like objects. The man and woman figures of set 7 were also grouped more often than the two woman figures in set 8. However, the tendency to group the two women figures more than the two rectangles was not significant. The tendency to place the woman and child of set 1 closer together than the man and child of set 2 was highly significant. It is noteworthy that in contrast to the tendency to place the child between the man and woman,

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3 Kuethe, Op. Cit., p. 32.

the dog was seldom placed between the man and woman of set 5. While Kuethe did not establish the relevance of the nonsocial sets for his study, he did find a height schema for the three rectangles of set 3, and, as he anticipated, least evidence for any schema for the geometric figures of set 6.

Various "idiosyncratic" modes of arranging the figures were evident, such as the placement of nonhuman figures between the human figures, or the placement of the figures on a vertical axis rather than on a horizontal axis. However, Kuethe did not define "idiosyncratic" operationally.

When many people use the same schema in organizing a social response, Kuethe[4] says there is the implication that comparable experiences have produced the commonality of response. That the same response would be prepotent for many people would also be indicative of the pervasiveness of the tendency in the culture. Similarly, when situations result in low commonality of organization, it may be concluded that there are not shared experiences that result in the same predispositions for different people or that the shared predispositions do not tend to be prepotent because of personality dynamics. The modal response might

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4 Kuethe, Op. Cit., p. 31.

be anxiety provoking or, as Kuethe[5] emphatically hypothesizes, idiosyncratic social figure organizations might reflect disturbance of the normal concepts of human relationships.

In a second experiment, using a successive reconstruction method, Kuethe[6] demonstrated that social schemas function as social response sets in that they introduce constant errors into estimates about the distance between social objects. When subjects viewed two rectangles placed a fixed distance apart on the field, they were quite accurate in replacing the rectangles in their original positions. However, with a set of man and woman figures there was a marked tendency to replace the figures too close together. The schema that man and woman belong together seemed to have interfered with either the original perception of the figures or with the judgment process in the reconstruction period. To clarify the matter, Kuethe[7] conducted another experiment and found that subjects were relatively accurate when they used the two rectangles to reproduce the relative

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5 Kuethe, Op. Cit., p. 38.

6 Ibid., p. 36.

7 James L. Kuethe, "Social Schemas and the Reconstruction of Social Object Displays from Memory", Journal of Abnormal and Social Psychology, Vol. 65, July, 1962, p. 71-74.

positions of the set of man and woman figures. However, subjects erred by placing these two human figures too close together when they attempted to reproduce the relative positions of the two rectangles. Kuethe concluded that the schema that man and woman belong together introduces errors in judgment during the reconstruction of a stimulus display rather than in the original perception of the stimulus figures.

In another experiment Kuethe[8] attempted to test the hypothesis that the strength of a schema, as determined by its frequency of use in a population during a free construction period, would directly relate to the magnitude of the error introduced by the schema into judgments during the reconstruction of stimulus displays. However, as the object sets used in the free construction period were not identical to the sets used in the reconstruction period, his results were inconclusive, though in accord with the hypothesis.

In attempting to determine what social schemas other than the man-woman schema interfere with judgments of figure placements, Kuethe[9] had fifty undergraduates reconstruct five pairs of stimulus figures. Each set was presented with a separation distance of twenty inches between figures on a

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8 Kuethe, Op. Cit., p. 72.

9 Ibid.

display field six feet long and 4.5 feet wide. The average reconstructed separation distance was greatest for the two man figures facing away from each other (23.2 inches). The next largest distance upon replacement was for the two rectangles (20.5 inches) which were replaced with less error than any other pair of figures. The two woman figures facing front were replaced closer together (18.3 inches) followed by the man and woman pair (17.1 inches). The two men facing one another were placed the closest together (16.0 inches). The concordance of all subjects with this ranking was significant at the .05 level. Thus, it was concluded that various social schemas can distort the reconstruction of figure separation distances, the magnitudes of the distortion being determined by the specific content of the figures.

Kuethe[10] states that since high commonality social schemas introduce distortion into judgments concerning social objects, an individual who possesses a schema, yet rejects it in a free figure arrangement situation in an attempt to be creative, would still be expected to show errors of judgment consistent with the popular schema in the reconstruction of the placement of social objects. Conversely, an individual who really lacked the popular

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10 Kuethe, Op. Cit., p. 74.

schema would not be expected to show distortions of judgment consistent with the popular schema but rather would be more likely to show distortions consistent with his idiosyncratic schema. Kuethe concluded that his results suggested a technique for the evaluation of idiosyncratic social schemas.

Kuethe presents no information regarding the age, education, and intelligence of the subjects used in his exploratory studies. However, considering his particular undergraduate population, it seems likely that his samples were relatively homogeneous with respect to such characteristics. It also seems possible that in such groups many of the obtained idiosyncratic responses could be related to creativity factors as well as to social immaturity. Also, as cultural background was not controlled for, some of the idiosyncratic responses could reflect unique cultural factors.

Kuethe presents no evidence regarding the reliability of either the free figure arrangements or the reconstructed social figure displays.

Kuethe's hypothesis that idiosyncratic responses involving social objects are related to disturbed social thinking could be tested by comparing the social figure responses of individuals having no known serious social difficulties with the responses of individuals who have severely disturbed interpersonal relationships.

2. Definition of Social Inadequates.

The clinical literature indicates that schizophrenics have great difficulty with respect to social relationships. Rabin and King,[11] for example, in their review of psychological studies of schizophrenia state:

> It seems safe to say that the dominant orientation toward schizophrenia is a psychogenic one, the general view being that basically schizophrenia represents a disturbance in interpersonal relationships. The notion is especially congruent with the theoretical positions held by Cameron and Sullivan. One way to translate this theoretical orientation into research implications would be to consider variables referring to interpersonal processes as being central ones in psychopathology.

Utilization of a common schizophrenic subgroup, such as paranoid schizophrenia, might ensure greater reliability of diagnosis as well as greater consistency in intragroup performance. Arieti[12,13] has pointed out the social origin of suspiciousness, one of the major characteristics of this group.

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11 Albert Rabin and Gerald King, "Psychological Studies", in Schizophrenia: A Review of the Syndrome, Leopold Bellak, Ed., New York, Logos Press, 1958, p. 237.

12 Silvano Arieti, Interpretation of Schizophrenia, New York, Robert Brunner, 1955, p. 139.

13 Silvano Arieti, "Schizophrenia", in American Handbook of Psychiatry, Silvano Arieti, Ed., New York, Basic Books, p. 455-484.

In view of the above, social inadequates have been defined as paranoid schizophrenics for purposes of the present investigation.

3. Cameron's Social Role Theory.

The social orientation towards schizophrenia has been especially encouraged by Norman Cameron. Basic to his theoretical position on both normal and schizophrenic social development is the concept of "social role" which Cameron[14] defines as "a comprehensive and coherent organization in behaviour of functionally related, interlocking attitudes and responses".

Cameron[15] states that the human infant is born into a prefabricated behavioural environment whose design is an expression of the social roles of his associates. For example, there are the mutually complementary masculine and feminine biosocial roles which have been indefinitely expanded from sexual reciprocity. These reciprocal roles, taken together, form an organizational unit. The family unit thus conceived is a dynamic field whose organization

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14 Norman Cameron and Ann Magaret, Behaviour Pathology, Boston, Houghton Mifflin, 1951, p. 116.

15 Norman Cameron, "Role Concepts in Behaviour Pathology", American Journal of Sociology, Vol. 55, March, 1950, p. 464-467.

is determined by the interactions of its members. The infant's first role is the one he first learns to live - that of the baby of the family. What behaviour this role shall include will be determined biologically by the child's structure at the time and culturally by the kinetic design of the social field in which his behaviour is immersed. Gradually new roles and subroles become differentiated in the behaviour of the growing child in accord with his increasing bioscocial maturation. The child, immersed as he is in the role behaviour of his associates, can not help acquiring role behaviour of his own in response to theirs. The roles he thus learns will of course be defined by the socially organized behaviour of those with whom he is continually interacting in a reciprocal or participative relationship. Cameron refers to the above as the progressive socialization of the child and the acquisition of bioscocial maturity.

Regarding the social development of the schizophrenic, Cameron[16] notes that schizophrenia appears to develop most readily in anxious solitary individuals who are socially immature as well as socially inept. He states that the schizophrenic is usually a person who has never

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16 Norman Cameron, The Psychology of Behavior Disorders, A Bioscocial Interpretation, Boston, Houghton Mifflin, 1947, xxi-622 p.

acquired the degree of social skill he needs for shifting his perspectives through taking successive culturally determined roles when he is under stress. In other words, he has not succeeded in establishing himself firmly in his culture. Cameron[17] says that almost everyone who studies schizophrenic persons, regardless of theoretical prejudice, seems to be struck by the same thing: the patient's behaviour tends to become unintelligible and unpredictable in terms of the organized social perspectives dominant in his culture. The schizophrenic's behaviour has undergone a biosocial disorganization and his role taking becomes desocialized. It moves away from its social derivation in directions that are determined by private fantasy until it no longer corresponds to the socially determined role-taking of other persons in the same culture. Thus, the schizophrenic loses some of the social skills and perspectives which he has not too effectively acquired through years of social interaction and cooperative work with other individuals in a shared environment.

While from a formal point of view Cameron can be criticized for describing but not explaining socially disorganized behaviour, his theory appears adequate for interpreting the Kuethe phenomena.

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17 Cameron, Op. Cit., p. 450.

4. Summary and Basic Hypothesis.

James L. Kuethe devised a technique for the investigation of what he termed "social schemas" or plans involving people or people symbols. Using a large blue felt background and several sets of yellow felt figures, he discovered some social figure arrangements having high commonality and a few which were idiosyncratic. Kuethe hypothesized that the idiosyncratic responses reflected disturbed social thinking. He also discovered that in the reconstruction of social figure displays some distortion of figure separation distances occurred, presumably because of the influence of social schemas on the subjects' judgment. Kuethe hypothesized that individuals with idiosyncratic social schemas would not show similar distortion.

Social inadequates were defined as paranoid schizophrenics, who are considered to have severely disturbed interpersonal relationships. Norman Cameron accounts for such social difficulties in terms of the development of unique and inadequate role taking skills and perspectives.

Considering a social schema as a conceptualization of social role relationships, a basic hypothesis may be formulated: Social figure responses of normals and social inadequates differ.

CHAPTER II

EXPERIMENTAL DESIGN

This chapter presents the methodology involved in testing the hypothesis proposed in the preceding chapter. It begins with a description of a modified version of Kuethe's social schema technique which was designed as the tool of the project. This is followed by a description of the procedures entailed in the three experiments conducted to test the sub-hypotheses of the investigation. The sample population is then described, with emphasis given to the principles of selection. Finally, after the defining of terms, the specific sub-hypotheses are presented along with their required statistical operations.

1. The Tool of the Investigation.

As it appeared that the technique used by Kuethe could be improved upon, the experimenter constructed the tool employed. For the field, Kuethe had used backgrounds of various sizes in his experiments with no apparent rationale. To simplify the administration of the present study, just one field was used. It was made of blue felt and was similar in size to that used by Kuethe in his reconstruction experiments, being six feet long and five feet wide. It could be hung on suction cup wall hooks.

The figures were cut from yellow felt and could cling to the field without leaving a mark. They were modelled after the figures used by Kuethe, except for the boy and girl. As Kuethe's child figure was sexually ambiguous, the use of both boy and girl figures seemed to offer the advantages of specificity and hence greater explorability of dynamic factors. All human figures faced front and, except for shape, were featureless. Kuethe's dog and rectangle figures were retained in order to serve as possible social barriers. The figures and their dimensions are listed in Table I.

To facilitate administration, several duplicates of each figure were made and grouped into sets. Each set was placed in a standard blank envelope.

The composition of the sets used in the three experiments is presented in Tables II, III, and IV. For Experiment I, the composition of the sets was similar to that used by Kuethe in his first free arrangement experiment, except for the addition of the girl figure. For Experiment II, while Kuethe had compared the separation distances of only a man-boy pair and a woman-boy pair, it appeared that valuable information could be obtained by adding a man-man pair and a man-woman pair. For Experiment III, Kuethe's man figures which faced sidewards were not used because of a lack of theoretical relevance.

Table I.-

Figures and Their Dimensions Used in the Investigation.

Figure	Dimensions in Inches	
	Height	Width
Man	10.0	3.0
Woman	9.5	3.0
Girl	7.75	2.5
Boy	6.25	2.5
Dog	5.0	3.0
Rectangle	10.0	3.25

Table II.-

Composition of Experiment I Sets.

Set	Figures
MWB	Man, woman, boy
MWGB	Man, woman, girl, boy
MMWW	Two men, two women
MWD	Man, woman, dog
MWRR	Man, woman, two rectangles
MMRR	Two men, two rectangles

Table III.-

Composition of Experiment II Sets.

Set	Figures
MW	Man, woman
MM	Two men
WB	Woman, boy
MB	Man, boy

Table IV.-

Composition of Experiment III Sets.

Set	Figures
RR	Two rectangles
WW	Two women
MW	Man, woman

2. The Method.

To obtain the socially inadequate subjects, the hospital diagnostic file cards were searched for patients meeting the various qualifications which had been set. The individual case files were then examined for further relevant information and a list was compiled of those patients who finally were eligible to participate. Appointments were made by a senior psychologist with the ward attendants. The attendants brought the patients from their wards in groups of three to a waiting room where rapport was established by a psychological intern. The subjects were then tested individually by the experimenter in an adjacent office.

The majority of normal subjects were tested in a private office in the Headquarters Building of the Royal Canadian Mounted Police. Some were tested in the home of the experimenter.

All subjects were told that they were participating in a "study of human behaviour". They took part in all three experiments and in the same order: Experiment I, Experiment II, and finally Experiment III.

For Experiment I, the subjects were instructed to arrange the figures of each set in any way desired. To control for any influence of one set upon another, the

order of the presentation of the various sets was random and determined by means of shuffling the envelopes containing the sets and drawing the top one. After the subject arranged the figures of a set, the figure positions were recorded. The figures were then removed and the next set presented. The definitions of the characteristics recorded were as follows:

Order of figures: recorded as observed.

Bases common to various figures: recorded as observed.

Incongruence of figure bases: notation made if the base of any figure was placed above or below the base of another figure at a distance equivalent to at least one-half the height of the second figure.

Space: noted if any figure was placed at least six inches from any other figure on the common base.

Axis: horizontal or vertical plane noted.

Angularity: notation made if any figure appeared to be leaning at least forty-five degrees from the vertical axis of the field.

For Experiment II, the subjects were again asked to arrange the figures in any manner desired but were told that the distances between the figures would be measured. After the figures of each set were arranged, the separation distance was measured and recorded. The figures were then removed and the next set was presented, the order being random.

For Experiment III, the procedure to be followed was described to each subject and the sets were then presented in random order. The two figures of each set were placed twenty inches apart on the field. The subject, from a distance of six feet, looked for five seconds. The figures were then removed and handed to the subject who attempted to replace them exactly where they had been. The reconstructed figure separation distance was then measured and recorded and the next set was presented.

Conversation was discouraged throughout each testing session. Each subject was thanked for his cooperation, and evasive answers were given to the several subjects who expressed interest in the nature of the project.

In order to assess reliability, fifteen social inadequates and fifteen normals were retested.

3. The Samples.

To obtain a sample of social inadequates, the paranoid schizophrenic population at the Ontario Hospital, Brockville, was available. Each diagnosis had been based upon a clinical case conference decision. Only male patients were considered in view of the limited accessibility of the females. To ensure that the subjects would be adult and non-senile, individuals with year of birth prior to 1903 or later than 1943 were not eligible. Age thus had to be

at least twenty and not more than sixty years. As the patient files did not contain intelligence test results, an education of at least grade six was required with no indication of borderline or lower intelligence having been made by an examining psychiatrist. Brain damaged patients were also excluded. To minimize possible cultural biases, place of birth had to be in North America and race had to be white. Since many of the patients were on medication, no attempt was made to control for this factor.

Examination of both the diagnostic file cards and the individual files revealed that only twenty-eight patients met the above requirements. As two patients were in poor health and one refused to cooperate, a total of twenty-five socially inadequate subjects participated.

The length of hospitalization averaged 4.60 years, and ranged from two months to fourteen years.

The educational level averaged 9.64 years, and ranged from grade six to a Master of Science degree.

The age ranged from twenty-six to sixty years, with a mean of 44.04 years and a standard deviation of 9.62.

Normals were defined as non-hospitalized persons admitting to no current psychiatric treatment. While the majority of normals who volunteered were members of the Royal Canadian Mounted Police, several were ordinary residents of Eastview.

The education for the normals averaged 11.00 years and ranged from grade seven to second year college.

The age averaged 38.00 years with a standard deviation of 10.36 and a range of from twenty-four to fifty-eight years.

All subjects were white males who had been born in North America.

4. Definition of Terms.

Social inadequate: patient at the Ontario Hospital, Brockville, who has been diagnosed paranoid schizophrenic at a clinical case conference.

Normal: non-hospitalized person admitting to no current psychiatric treatment.

Common response: any figure arrangement given by a proportion of at least .061 of the normals.

Idiosyncratic response: any figure arrangement given by no larger a proportion than .030 of the normals.

Separation distance: the distance between the outer-most edges of two freely arranged figures.

Reconstructed distance: the distance between the outer-most edges of two replaced figures.

5. The Specific Hypotheses.

Evidence for the basic hypothesis that social inadequates differ from normals in social figure responses can be obtained through the testing of the following specific hypotheses given in null form:

1. In a free response situation, the frequency of common and idiosyncratic social figure arrangements is independent of the normal and social inadequate categories.

2. There is no significant concordance among the normals for the ranks of their mean separation distances.

3. There is no significant concordance among the social inadequates for the ranks of their mean separation distances.

4. There are no significant differences between the separation distances of normals and social inadequates.

5. There is no significant concordance among the normals for the ranks of their mean reconstructed distances.

6. There is no significant concordance among the social inadequates for the ranks of their mean reconstructed distances.

7. There are no significant differences between the reconstructed distances of normals and social inadequates.

6. Analysis of the Data.

After determining the frequency of each of the different figure arrangements given by the normals, all arrangements given by both normals and social inadequates in Experiment I were scored common or idiosyncratic. The frequencies of the common and idiosyncratic responses for all subjects were then determined.

An indication of the reliability of these categorized responses was obtained through computing test-retest agreement proportions for each of the two samples.

Test-retest reliability coefficients were calculated for both the separation distances and the reconstructed distances for each of the samples through employment of the Pearson product-moment correlation formula.

In testing hypothesis 1, which entailed frequencies, the chi square formula for a two by two table was used which included the Yates correction for continuity when necessary.

In testing hypotheses 2, 3, 5, and 6 for the independence of ranks, the Kendall coefficient of concordance formula was utilized. The sign test was also employed in order that relationships among any particular pairs of sets could be ascertained when concordance was not significant.

Regarding hypotheses 4 and 7, the F test was used to compare the variances of the normals and social inadequates, and the critical ratio method was employed in

comparing the means of both the separation distances and the reconstructed distances.

This design will serve as the basis for the following presentation and discussion of results.

CHAPTER III

RESULTS AND DISCUSSION

This chapter presents and discusses the results of the three experiments planned in the previous chapter. It is composed of nine sections. Section 1 deals with the reliability of the figure arrangements constructed in Experiment I. Section 2 concerns the qualitative aspects of the obtained common and idiosyncratic figure arrangements. Section 3 compares the frequencies of the common and idiosyncratic responses given by the normals and the social inadequates. Section 4 deals with the reliability of the figure separation distances obtained in Experiment II. Section 5 discusses the concordance studies of the separation distances. Section 6 is concerned with the separation distance differences between the normals and the social inadequates. Section 7 presents the reliability findings for the reconstructed figure separation distances obtained in Experiment III. Section 8 discusses the studies of the concordance of the reconstructed figure separation distances. Finally, section 9 compares the reconstructed distances of the normals and the social inadequates.

1. Reliability of Experiment I Arrangements.

The proportions of normals and social inadequates giving the same category of response - common or idiosyncratic - on first and second testings are presented in Table V. Because Np's were less than five, the standard errors of the proportions could not be calculated nor therefore the significance of the differences between the proportions. However, inspection of the table reveals perfect agreement among the normals for five of the six sets of figures, suggesting acceptable consistency of response. The social inadequates, however, displayed proportion agreements ranging from .733 to .866.

There was lower consistency of response when consistency was considered with respect to giving identical arrangements in terms of the criteria for actual figure placement. As seen in Table VI, the agreement proportions of the normals ranged from .866 to perfect agreement. The agreement proportions of the social inadequates ranged from .267 to .670.

In considering the consistency of the subjects in giving the same totals of idiosyncratic responses on test and retest, Table VII indicates that the proportion agreement for the normals was .866 and for the social inadequates was .733.

Table V.-

Proportions of Normals and Social Inadequates Giving Same Type of Response - Common or Idiosyncratic - on First and Second Testings for Experiment I Sets.

Sets	Normals N:15	Social Inadequates N:15
MWB	1.00	.733
MWGB	1.00	.733
MMWW	1.00	.866
MWD	1.00	.733
MWRR	1.00	.800
MMRR	.866	.866

Table VI.-

Proportions of Normals and Social Inadequates Giving Identical Social Figure Arrangements on First and Second Testings for Experiment I Sets.

Sets	Normals N:15	Social Inadequates N:15
MWB	1.00	.670
MWGB	.866	.333
MMWW	.866	.400
MWD	.933	.267
MMRR	.933	.533
MMRR	.866	.533

Table VII.-

Proportions of Normals and Social Inadequates Giving Some Totals of Idiosyncratic Responses on Test and Retest for Experiment I Sets.

Normals N:15	Social Inadequates N:15
.066	.733

2. Common and Idiosyncratic Responses.

The common figure arrangements given by normals and social inadequates in Experiment I, together with their proportion distribution are presented in Table VIII. Illustrations of common and idiosyncratic responses are provided by Figures 1 and 2 in Appendix 1.

Regarding the performance of the normals, despite the use of different social figures and a considerably different sample than those used by Kuethe, the general basic scheme found by Kuethe was also obtained in the present investigation. In general, the figures were placed in a horizontal row and were parallel and vertical as though standing on one imaginary base. However, for the sets containing rectangles, two and even three bases were sometimes used. Although Kuethe had mentioned vaguely that his figures were usually in the middle of the field, an attempt in the present study at noting the exact locations revealed that the figures were often placed in any of the sections of the field. However, because of the overlap in sections for many of the arrangements, section could not be taken into account in scoring.

For set M-B, the modal response was man, woman, boy, being given by a proportion of .818 of the normals. This response, and others to be described - unless noted otherwise, evidenced the general basic scheme previously

Table VIII.-

Proportion Distribution for Common Figure Arrangements of Normals and Social Inadequates for Experiment I Sets.

Set	Arrangement[a]	Normals N:33	Social Inadequates N:25
1	Man, woman, boy	.818	.320
	Man, boy, woman	.091	.160
	Boy, man, woman	.091	.080
2	Man, woman, boy, girl	.696	.160
	Man, boy, girl, woman	.091	.040
	Boy, girl, woman, man	.091	.080
	Boy, man, woman, girl	.061	.000
3	Man, woman, man, woman	.697	.240
	Man, woman, woman, man	.151	.080
	Man, woman, space, man, woman	.091	.120
4	Man, woman, dog	.515	.360
	Woman, man, dog	.424	.040
5	Rectangle, woman, man, rectangle	.394	.080
	Man, woman, rectangle, rectangle	.242	.040
	Man, woman, over rectangle,[b] rectangle	.151	.200
	Rectangle, rectangle, man, woman	.091	.000
	Rectangle[b] over man and woman, over rectangle[b]	.061	.000

Table VIII.- (Cont'd.)

Proportion Distribution for Common Figure Arrangements.

Set	Arrangement	Normals N:33	Social Inadequates N:25
6	Man, man, rectangle, rectangle	.273	.120
	Rectangle, man, man, rectangle	.212	.040
	Man over rectangle,[b] man over rectangle[b]	.182	.200
	Rectangle, man, rectangle, man	.151	.080
	Man and man over rectangle[b] over rectangle[b]	.091	.000
	Rectangle[b] over man and man, over rectangle[b]	.061	.000

a Direction ignored.

b Horizontal.

described. The most common responses for each of the other sets containing man and woman figures also had the man and woman placed side by side with no figures intervening. The schema that man and woman belong together is obviously in accord with North American sexual roles. The placement of the boy on the (outer) side of the woman is certainly in accord with North American family roles, suggesting the schema that children belong with their mother. However, a second but less frequently given common response did place the boy in between the man and woman figures. Yet few normals placed the boy in this position and few placed the boy on the outer side of the man. The normals gave no idiosyncratic responses for set MWB.

The modal response for set MWGB was the arrangement man, woman, boy, girl, given by a proportion of .696 of the normals. Like the modal response of set MWB, the man and woman are placed together with the children placed on the woman's outer side. However, one of the three less frequently given common responses had the boy and girl placed between the man and the woman. The normals gave two idiosyncratic arrangements for the set. One was the only arrangement having each child placed with an adult figure of the opposite sex. The second had just one of the children placed between the two adult figures.

The modal response for set MMWW was the arrangement man, woman, man, woman, given by .697 of the normals. A second common response had a space separating the two man-woman pairs. A third common response had the two women placed between the two men, possibly suggesting a protection schema. Two idiosyncratic responses were given for the set. One had the two women placed on the outside with the two men together. Another paired same sex figures. Such arrangements could raise questions regarding the psychosocial maturity of the two subjects involved.

For the set MWD, two responses were very frequently encountered. One was the arrangement man, woman, dog, given by .515 of the normals. The second was the arrangement woman, man, dog, given by .424 of the normals. Two very similar idiosyncratic responses were given. One had the dog separating the man and the woman. The other had the man and dog together with the woman separated by a space from the pair. As both responses were given by members of the R.C.M.P., it would have been illuminating to have learned if the two subjects had had training with police dogs.

The sets containing rectangles as well as human figures had the greatest variety of common responses. This is understandable in view of the improbability that the rectangles would evoke common symbolism. While only one subject separated the man and woman figures of set MWRR,

five subjects separated the two men of set MMRR with a rectangle. The only subject giving an idiosyncratic response to set MMRR paired the two men and the two rectangles, as did the .275 of the subjects who made this order the most common, but unlike the rest, separated the two pairs. Arrangements pairing the people and pairing the rectangles, and arrangements placing the rectangles on either side of the paired humans were common for both sets.

Of the nine idiosyncratic responses given by the normals, six are attributable to unusual order, two to spacing, and one to the use of several bases.

Certain qualitative observations should be given. Several of the normals spontaneously labelled the figures. For example, the figures of set MWGB were often referred to as mother, father, and two children. For the modal response of set MMWW, the figures were often referred to as two couples. While many of the subjects seemed puzzled by the presence of the rectangles in sets MWRR and MMRR, several who placed the rectangles horizontally under the human figures offered the explanation, "sidewalk". In view of such frequently encountered spontaneous verbalization of role assignment to the figures, it seems quite likely that the figures used in the present investigation can indeed by symbolic of roles. Therefore, differences in figure

arrangements could well often reflect significant dynamic psycho-social factors.

As the common responses for the social inadequates were, of course, the same as those of the normals, comment on their qualitative characteristics would be redundant.

Some indication of the nature of the social inadequates' idiosyncratic responses can be obtained by reference to Table IX which presents the frequencies of idiosyncratic responses for each of the Experiment I sets and for the various previously defined recording criteria.

The idiosyncratic responses do not appear to be unevenly distributed for the six sets of figures. The mean set frequency is 14.8 and the range is from eleven to eighteen idiosyncratic responses per set. Set MWGB received the most idiosyncratic responses, possibly because it could have allowed for the greatest amount of interpersonal dynamic interplay.

The recording criteria were involved in varying degrees in the scoring of the idiosyncratic responses. In decreasing order of frequency they are: space, order, multiple bases, incongruence, and angularity. While large spacing, unusual order, and the use of more than one base could be related to disturbance in interpersonal relationships, the incongruence and angularity factors - which were not present among the normals - could be related to non-social factors common to schizophrenia.

Table IX.-

Frequency Distribution for the Idiosyncratic Responses of the Social Inadequates for the Recording Criteria and for Experiment I Sets.

Criteria	sets						Total
	MMRR	MWRR	MMWW	MWBC	MWB	MWD	
Space	5	5	6	4	8	4	32
Order	4	5	3	9	0	4	25
Bases	3	4	1	2	0	2	12
Congruence	0	0	3	1	2	5	11
Angularity	2	3	1	2	1	0	0
Total	14	17	14	18	11	15	89

3. Comparison of the Experiment I Responses of Normals and Social Inadequates.

As can be seen in Table X, the normals gave a total of 189 common responses and 9 idiosyncratic responses, while the social inadequates gave a total of 161 common responses and 89 idiosyncratic responses. As chi square was 62.0 and $p < .001$, the null hypothesis can be rejected. Presence of type of response - common or idiosyncratic - is very significantly related to the diagnostic categories of normal and social inadequate.

In testing the null hypothesis for each of the six sets of Experiment 1, it can be seen in Tables XI - XVI that the null hypothesis may be rejected for every one of the sets as the obtained chi squares ranged from 15.16 to 24.54 and minimum $p < .001$.

Table X.-

Common and Idiosyncratic Responses of Normals and Social Inadequates for the Six Sets of Experiment I Combined.

Category	Normals	Social Inadequates	Total
Common	189	161	350
Idiosyncratic	9	89	98
Total	198	250	448

Chi square: 62.0, $p < .001$.

Table XI.-

Common and Idiosyncratic Responses of Normals and Social Inadequates for Set MWB in Experiment I.

Category	Normals	Social Inadequates	Total
Common	33	14	47
Idiosyncratic	0	11	11
Total	33	25	58

Chi square: 16.16, $p < .001$.

Table XII.-

Common and Idiosyncratic Responses of Normals and Social Inadequates for Set MWGB in Experiment I.

Category	Normals	Social Inadequates	Total
Common	31	7	38
Idiosyncratic	2	18	20
Total	33	25	58

Chi square: 24.54, $p < .001$.

Table XIII.-

Common and Idiosyncratic Responses of Normals and Social Inadequates for Set MMW in Experiment I.

Category	Normals	Social Inadequates	Total
Common	31	11	42
Idiosyncratic	2	14	16
Total	33	25	58

Chi square: 15.34, $p < .001$.

Table XIV.-

Common and Idiosyncratic Responses of Normals and Social Inadequates for Set MWD in Experiment I.

Category	Normals	Social Inadequates	Total
Common	31	10	41
Idiosyncratic	2	15	17
Total	33	25	58

Chi square: 17.45, $p < .001$.

Table XV.-

Common and Idiosyncratic Responses of Normals and Social Inadequates for Set MWAR in Experiment I.

Category	Normals	Social Inadequates	Total
Common	31	8	39
Idiosyncratic	2	17	19
Total	33	25	58

Chi square: 22.04, $p < .001$.

Table XVI.-

Common and Idiosyncratic Responses of Normals and Social Inadequates for Set WMRR in Experiment I.

Category	Normals	Social Inadequates	Total
Common	32	11	43
Idiosyncratic	1	14	15
Total	33	25	58

Chi square: 18.14, $p < .001$.

Table XVII presents the proportion distribution for idiosyncratic response totals of normals and social inadequates for the six sets of Experiment I combined. Because Np's were less than five, the significance of the differences between the proportions could not be tested. However, it is noteworthy that while a proportion of .758 of the normals produced no idiosyncratic responses, none of the social inadequates produced so few. Furthermore, as can be seen in Table XVIII, if a cut off total of two idiosyncratic responses were to be used for a similar sample, all of the normals and seventy-two per cent of the social inadequates could be expected to be correctly identified. Thus, the results of Experiment I suggest that the social figure technique has diagnostic potentiality.

The highly significant differences in the performances of normals and social inadequates can be interpreted in terms of Cameron's social role theory. Assuming that the social figures are symbolic of such common social roles as of sex and family, Cameron's theory of the disturbed psycho-social development of the schizophrenic could account for the unusual social figure arrangements which the social inadequates so frequently gave.

The results support Kuethe's hypothesis that idiosyncratic social figure arrangements are produced by individuals with disturbed interpersonal relationships.

Table XVII.-

Proportion Distribution for Idiosyncratic Response Totals of Normals and Social Inadequates for the Six Sets of Experiment I Combined.

Total	Normals	Social Inadequates
0	.758	.000
1	.212	.160
2	.030	.120
3	.000	.280
4	.000	.120
5	.000	.080
6	.000	.240

Table XVIII.-

Proportions for Various Suggested Idiosyncratic Cut-off Totals of Normals and Social Inadequates.

Total	Normals	Social Inadequates
0	.758	1.00
1	.970	.840
2	1.00	.720

4. Reliability of Experiment II Separation Distances.

Pearson test-retest reliability coefficients for the figure separation distances of normals and social inadequates for the four sets of figures of Experiment II are presented in Table XIX. As can be seen in the table, the reliability coefficients of the normals ranged from .63 for set MW to .93 for set MM. The mean of the coefficients, calculated by the z transformation method, was .86 with $p < .01$, indicating response consistency.

The reliability coefficients of the separation distances of the social inadequates ranged from .19 for set MW to .85 for set WB. The mean of the coefficients was .71 with $p < .01$.

Perhaps set MW was less reliable than the other sets for both normals and social inadequates because it may have been the most threatening.

Table XIX.-

Pearson Test-Retest Reliability Coefficients for Figure Separation Distances of Normals and Social Inadequates for Experiment II Sets.

Sets	Normals N:15	Social Inadequates N:15
MW	.63[a]	.19
MM	.93[b]	.80[b]
WB	.84[b]	.85[b]
MB	.92[b]	.76[b]

a $p < .05$.

b $p < .01$.

5. Concordance Studies of Separation Distances.

The results of the analyses of concordance for each sample's ranks of the separation distances for the four sets of figures in Experiment II are presented in Table XX. For the normals, the Kendall coefficient of concordance was .492 and S was 3,681.50, being significant at the .01 level. Clearly the null hypothesis can be rejected: the ranks of the normals for the four sets are not independent but rather are strongly related.

Inspection of the mean ranks of the sets indicates that the subjects tended to put set MM figures farthest apart, set MB figures closer together, set WB figures closer, and set MW figures the closest.

That the two male figures were placed farthest apart is in accord with North American sexual roles, as is the placement of the man and woman figures closest together. Such results are also in accord with the observation in Experiment I that the male figures were often separated by rectangles and the man and woman figures were not.

That the woman and boy figures were placed closer together than the man and boy figures is also in accord with North American family roles. This finding likewise is in accord with the Experiment I observation that the

Table XX.-

Kendall Coefficients of Concordance and s's for the Ranks of the Mean Figure Separation Distances of Normals and Social Inadequates for Experiment II Sets.

	Normals k:33, N:4	Social Inadequates k:25, N:4
W	.492	.088
s	2,681.50[a]	277.50

a p: .01.

child figures more frequently tended to be placed on the woman's outer side than on the man's outer side.

The primacy of the man-woman relationship is suggested by the finding that the man and woman figures were placed closer together than the woman and boy figures.

The results thus indicate that when asked to arrange freely various sets of human figures, normals do not place the figures randomly, but rather in accord with some (possibly unconscious and dynamic) principle.

The Kendall coefficient of concordance for the social inadequates was .088 and s was 277.50. This is far from even approaching significance. None of the sign tests subsequently conducted for the various pairs of set separation distances yielded results significant at the .01 level, although there was a tendency to place the two men figures farther apart than the man and woman figures (x: 7, p: .022).

It thus appears that the social figures had little common role significance for the social inadequates. This finding is in line with Cameron's theory that the schizophrenic has experienced an inadequate social role development.

6. Differences in Separation Distances.

As can be seen in Table XXI, the mean separation distances of the normals ranged from 1.45 inches for the figures of set MW to 2.90 inches for the figures of set MM. The mean separation distances of the social inadequates ranged from 3.19 inches for the figures of set WB to 4.35 inches for the figures of set MM. F tests conducted for comparing the variances of the two samples yielded an F for set MM of 3.27 with p: .02, and for sets MW, WB, and MB the F values were all significant at the .002 level. Clearly the social inadequates were significantly more variable than the normals in freely placing the social figures of Experiment II apart from each other.

The critical ratio method for testing the significance of differences between means was therefore used in preference to the t method which assumes homogeneity of variance. As none of the obtained critical ratios were significant at the .01 level, the null hypothesis of no difference between the separation distances of normals and social inadequates could not be rejected.

While it might be expected that in view of presumably more painful social experiences social inadequates would tend to place the social figures farther apart than would normals, the previous observation that social

Table XXI.-

Means, Standard Deviations, F Values, and Critical Ratios of the Means, for the Separation Distances of Normals and Social Inadequates for Experiment II Sets.

Sets	Normals N:33		Social Inadequates N:25			
	M	SD	M	SD	F	CR
MW	1.45	.94	3.44	5.02	28.72[a]	1.91
MM	2.90	2.19	4.35	3.96	3.27[b]	1.62
WB	1.63	1.04	3.19	3.37	10.52[a]	2.19[c]
MB	1.81	1.03	3.90	7.00	45.76[a]	1.45

a p: .002.

b p: .02.

c p: .05.

inadequates might be confused in their conceptualizations of social roles could account for there being no significant differences in the separation distances of the two groups. Also, the significant differences in variability of the samples should be taken into account.

7. Reliability of Experiment III Reconstructed Distances.

Pearson product-moment correlation coefficients for the reconstructed figure separation distances of the normals and the social inadequates for the three sets of Experiment III are presented in Table XXII. For the normals, these test-retest reliability coefficients ranged from only .18 for set RR to .68 for set MW. The mean of the coefficients, calculated by the z transformation method, was .52 with p: .01.

For the social inadequates, the reliability coefficients ranged from .60 to .69. The mean coefficient was .65 with p: .01.

Table XXII.-

Pearson Test-Retest Reliability Coefficients for Reconstructed Figure Separation Distances of Normals and Social Inadequates for Experiment III Sets.

Sets	Normals N:15	Social Inadequates N:15
RR	.18	.69[a]
WW	.63[b]	.60[b]
MW	.68[a]	.67[a]

a $p < .01$.

b $p < .05$.

8. Concordance Studies of Reconstructed Distances.

The results of the analyses of concordance for each sample's ranks of the reconstructed figure separation distances for the three sets of Experiment III are presented in Table XXIII. For the normals, the Kendall coefficient of concordance was .003 and s was only 6, which is far from being significant. None of the sign tests subsequently used in comparing the distances between the figures of the various possible combinations of sets yielded significant results either.

That the null hypothesis could not be rejected in the present study suggests the value of reconsidering Kuethe's results. Kuethe's findings were significant at only the .05 level and, in view of his lack of evidence regarding reliability, the possibility of his results being related to chance should not be overlooked. Also, Kuethe employed five sets of figures, two of which contained figures conveying direction, which the present study did not. Further analysis of the Kuethe data might have disclosed that the significance of the overall coefficient derived mainly from the two directional pairs. Replication of the Kuethe study appears warranted.

As would be expected in view of Cameron's theory and in view of the observed variability of the social

Table XXIII.-

Kendall Coefficients of Concordance and s's for the Ranks of the Mean Reconstructed Figure Separation Distances of Normals and Social Inadequates for Experiment III Sets.

	Normals k:33, N:4	Social Inadequates k:25, N:4
W	.003	.006
s	6.	8.

inadequates, the analysis of concordance for the reconstructed figure separation distances of the social inadequates did not produce significant concordance. The coefficient was .006 and s was only 8. Also, none of the sign tests for the various possible combinations of social figure pairs yielded significant results.

9. Differences in Reconstructed Distances.

The mean reconstructed figure separation distances of the normals for the sets of Experiment III ranged from 19.15 inches for set RR to 19.37 inches for set WW, as can be seen in Table XXIV. The even smaller range of the mean reconstructed distances of the social inadequates extended from 18.06 inches for set RR to 18.10 inches for each of the other two sets.

F tests conducted in comparing the variances of the two samples yielded F values significant at the .002 level for each of the three sets. Thus, in reconstructing the figure separation distances of the Experiment III sets, the social inadequates again were significantly more variable than the normals.

In testing for the significance of the differences between the mean reconstructed distances of normals and social inadequates, as none of the obtained critical ratios were significant, the null hypothesis could not be rejected.

Table XXIV.-

Means, Standard Deviations, F Values, and Critical Ratios of the Means, for the Reconstructed Distances of Normals and Social Inadequates for Experiment III Sets.

Sets	Normals N:33		Social Inadequates N:25			
	M	SD	M	SD	F	CR
RR	19.15	1.94	18.06	3.75	3.75[a]	1.29
WW	19.37	1.72	18.10	4.21	5.98[a]	1.39
MW	19.30	1.66	18.10	4.55	7.52[a]	1.22

a p: .002.

Although it could be expected that social inadequates, because of having experienced difficult social relationships, would tend to replace the social figures farther apart than would normals, possible confusion in social role conceptualizations as well as great variability in performance could account for the present findings.

While the reconstructed distance means of both samples for each of the three sets suggested that the figures were replaced closer together than the original twenty inch separation distance, critical ratios obtained in testing the significance of the differences between this fixed value and the means of the various sets were not significant for either sample.

SUMMARY AND CONCLUSIONS

In the investigation of social figure arrangements, evidence for the basic research hypothesis of differences between the responses of normals and social inadequates was obtained.

Normals tended to give well organized social figure arrangements having high commonality of response. Social inadequates gave so many unusual or idiosyncratic responses that the null hypothesis of independence of diagnostic and response categories could be rejected at the .001 level. These results were interpreted in terms of Norman Cameron's social role theory.

Indeed, while a cut-off total of two idiosyncratic responses for the six sets of Experiment I figures included one hundred per cent of the normals, seventy-two per cent of the social inadequates produced more than two idiosyncratic responses, suggesting diagnostic potentiality for the social figure technique utilized in this first experiment.

Acceptable consistency of response was indicated by the finding that all of the normals gave the same type of arrangement on first and second testings for five of the six sets of figures.

Acceptable response consistency was also indicated for the figure separation distances of the normals for most

of the Experiment II figure sets by the test-retest correlation study.

For the normals, the null hypothesis of independence of separation distance ranks for the four sets of figures for Experiment II was rejected since the results of the analysis of concordance study were significant at the .01 level. The two man figures were placed the farthest apart. The next largest separation distance was for the figures of the man-boy set. The woman and boy figures were placed closer together. The smallest separation distance was for the figures of the man-woman set. These results were interpreted in terms of prevalent North American social roles.

As was expected in view of Cameron's social role theory, the null hypothesis of rank independence could not be rejected for the separation distances of the social inadequates.

The figure separation distances of the social inadequates were found to be significantly more variable than those of the normals. The null hypothesis of no significant differences in mean separation distances between the two groups could not be rejected.

The test-retest reliability findings for the Experiment III sets of figures did not indicate high response consistency.

The null hypothesis of independence of reconstructed figure separation distance ranks could not be rejected for either the normals or the social inadequates.

The reconstructed figure separation distances of the social inadequates were found to be significantly more variable than those of the normals. The null hypothesis of significant differences between the mean reconstructed figure separation distances of the two groups could not be rejected.

The following suggestions for further research emerge from the present investigation:

1. Cross validation.

2. Development of a scaled down desk version of the tool for greater administrative ease.

3. Utilization of a variety of social figures, such as figures of different ages, vocations, and social classes.

4. Utilization of a variety of types of subjects, such as subjects of different childhood stages, sexes, and psychiatric diagnostic categories.

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APPENDIX 1

EXAMPLE OF COMMON AND IDIOSYNCRATIC RESPONSES

APPENDIX 1

EXAMPLES OF COMMON AND IDIOSYNCRATIC RESPONSES

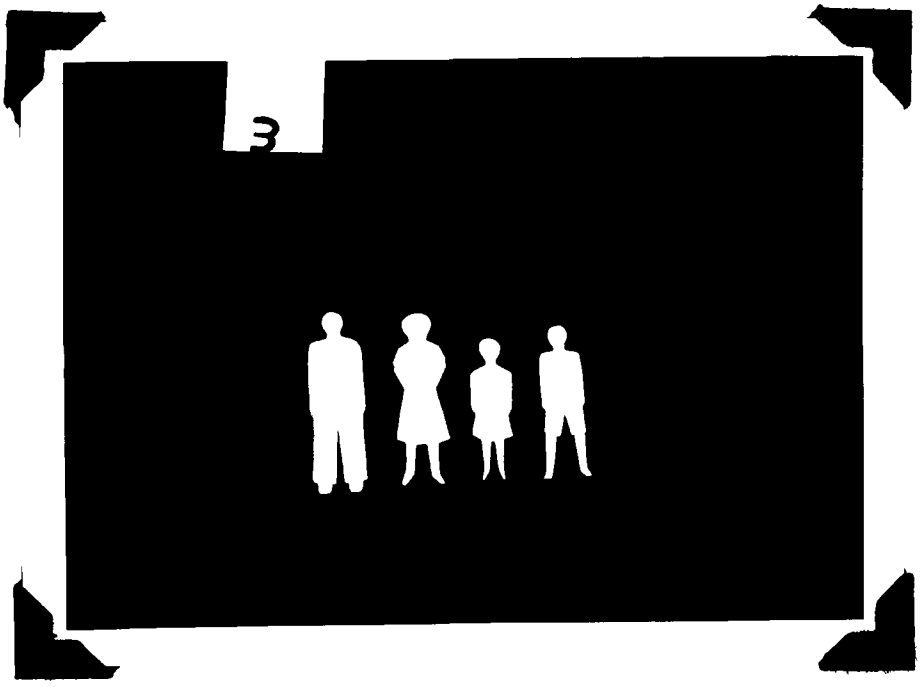

Figure 1.- A common response.

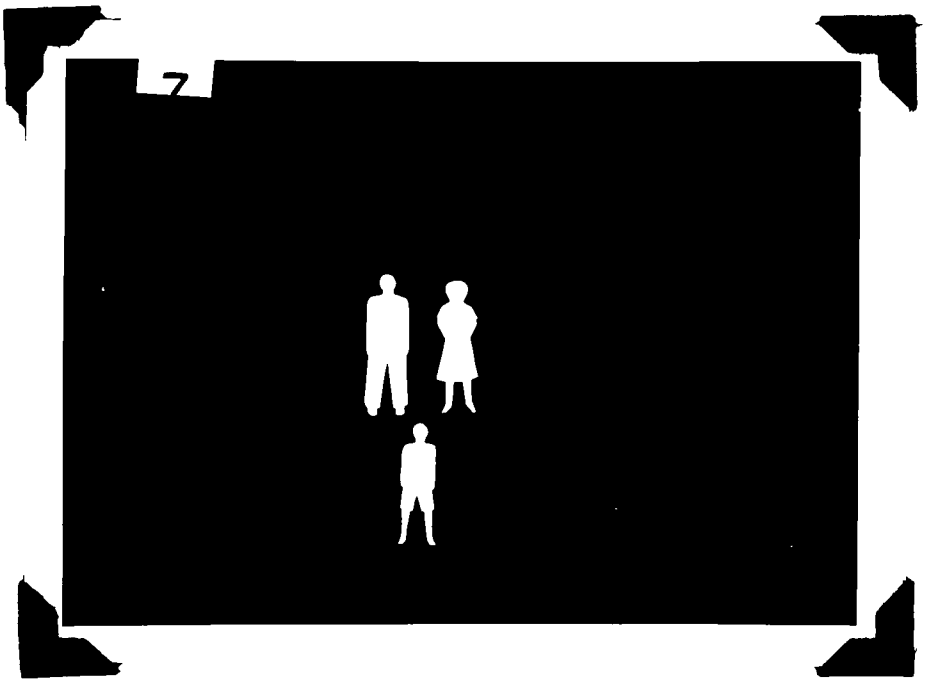

Figure 2.- An Idiosyncratic Response.

APPENDIX 2

ABSTRACT OF

Social Figure Responses of Social Inadequates and Normals

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ABSTRACT OF

Social Figure Responses of Social Inadequates and Normals[1]

The purpose of this project was to continue the investigations initiated by James L. Kuethe of the arrangements of simple felt social figures, and to provide some theoretical basis for the phenomena involved.

The tool constructed was composed of various yellow felt figures - including man, woman, girl, boy, dog, and rectangle figures - together with a large blue felt background.

Three experiments were designed to provide evidence for the basic research hypothesis that the social figure responses of normals and socially inadequate individuals differ. The first experiment compared the common and idiosyncratic responses produced by normals and social inadequates. The second studied the separation distances between freely arranged figures. The third experiment was concerned with the separation distances between figures which had been replaced.

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1 Sheldon Murray Mooney, doctoral thesis presented to the School of Psychology and Education of the University of Ottawa, Ontario, 1963, [illegible]-74 p.

Subjects were selected according to criteria set for diagnosis, sex, age, birthplace, race, and education. Social inadequates were operationally defined as paranoid schizophrenics. Twenty-five eligible patients at the Ontario Hospital, Brockville, took part in all three experiments. Thirty-three normals, mostly volunteers from the RCMP Headquarters, Ottawa, also took part in the three experiments. Fifteen subjects from each group were re-tested for reliability purposes.

Results supporting the basic hypothesis were obtained. In Experiment I, the normals tended to give well organized social figure arrangements having high commonality of response, whereas the social inadequates gave many idiosyncratic arrangements. The null hypothesis of independence of diagnostic and response categories could be rejected at the .001 level. The results were interpreted in terms of Norman Cameron's theory of social role development. Comparison of the proportions of normals and social inadequates giving various idiosyncratic response totals indicated that the social figure technique has diagnostic potentiality. Acceptable consistency in producing the same type of figure arrangement on test and retest was indicated by high proportional agreement.

In Experiment II, acceptable response consistency for most of the sets of figures was indicated by the

test-retest figure separation distance correlations of the normals. As in the previous experiment, the social inadequates showed less consistency than the normals. For the normals, the null hypothesis of independence of separation distance ranks for the four sets of figures could be rejected at the .01 level. In line with Cameron's social role theory, significant concordance of the separation distance ranks of the social inadequates was not evidenced. While the figure separation distances of the social inadequates were found to be more variable than those of the normals, there were no significant differences between the two groups in mean separation distances.

Test-retest reliability findings for the Experiment III sets of figures did not indicate high response consistency. The null hypothesis of independence of reconstructed figure separation distance ranks could not be rejected for either sample. The reconstructed figure separation distances of the social inadequates were found to be significantly more variable than those of the normals, but there were no significant differences between the means of the two groups.

Suggestions for further research included cross validation, development of a desk version of the tool, utilization of a variety of social figures, and investigation entailing a variety of types of subjects.