

PERCEPTUAL AND PROBLEM
SOLVING RIGHTLY AS A
FACTOR IN

J. Stewart-Bentley, 1969

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AMONG JUVENILE DELINQUENTS.

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Perceptual and Problem Solving Rigidity as a Factor
in Recidivism Among Juvenile Delinquents

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Education

by

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ABSTRACT OF THE DISSERTATION

Perceptual and Problem Solving Rigidity as a Factor
in Recidivism Among Juvenile Delinquents

by

Jamie Stewart-Bentley

Doctor of Education

University of California, Los Angeles, 1969

Professor May V. Seago, Chairman

Purpose.--The study was undertaken to investigate the relationship between recidivism in juvenile delinquents and perceptual and problem solving rigidity. It was hypothesized that a delinquent population, and especially recidivists, would demonstrate a lesser ability to restructure their "field," find new modes of solving problems, persevere, and show a lower level of ego strength, or personality flexibility, than would a nondelinquent population.

Procedure.--Forty male juvenile delinquents were selected from the total population of inmates at Juvenile Hall in Los Angeles County. These were grouped into two categories, first offenders and third offenders. A comparison group of forty male juveniles with no arrest record was selected from the public schools of Los Angeles County.

All subjects were equated on the basis of age, socioeconomic status, and I.Q.

Tests were administered individually and instructions as well as test items, where appropriate, were read aloud to the subjects to control the effect of possible differences in reading skills.

Instruments used in the study included (1) a performance task consisting of a punch board maze, (2) tests of perceptual rigidity and ability to redefine structured stimuli in order to solve problems, and (3) a questionnaire designed to measure ego strength.

Results.--Analyses of variance were made using orthogonal and nonorthogonal comparisons. Statistical difference at the 5 percent level or above was accepted as significant.

The data yielded significant differences between the groups only in the performance task and one test of perceptual reorganization. These differences were in a negative direction to that hypothesized. The recidivists and first offenders made fewer perseverative errors on the performance task than did the comparison group (significance exceeded the .05 level). On a test of perceptual reorganization, the comparison group and first offenders made higher error scores than did the recidivists. Statistical significance exceeded the .05 level in this comparison.

The statistical significance of the difference between

groups on these two measures was attributed to the fact that the recidivists and first offenders made fewer attempts to solve the problem of the maze (the performance task), and that the recidivists evidenced less risk-taking behavior in the test of perceptual reorganization than did either of the other two groups.

Conclusions.--Tests used in this study were designed to measure "rigidity" as this characteristic has been differentiated traditionally. Perseveration was not found to be a discriminating factor between recidivists and a nondelinquent group. A kind of "spontaneous flexibility," described in the literature as characteristic of a tight ego-defense system, was demonstrated by the delinquent groups in the performance task and especially the recidivists in a test of perceptual reorganization.

Recommendations.--Future research related to the problems of juvenile delinquency and recidivism might investigate the importance of such variables as (1) differences between offenders against persons and offenders against property, (2) time spent in foster homes prior to recidivism, and (3) status within the peer group including relative status within a gang. Further investigation using performance tests and measures to assess ego structure and functioning seem warranted.

CHAPTER I

IMPORTANCE OF THE STUDY

Crime is of increasing concern in the United States with the rate of incidence climbing each year. Between 1962 and 1963, there was an increase of 9 percent, according to the Uniform Crime Reports published by the Federal Bureau of Investigation (1964). This same report points out that of the total arrests, which number 4,510,835, there were 788,762 or 17.5 percent committed by minors under 21 years of age (ibid., p. 96).

According to the Children's Bureau, which has published juvenile court statistics for 1963 (1964), approximately 601,000 juvenile delinquent cases (exclusive of traffic offenses) were handled by the Juvenile Courts in the United States. These cases represented 518,000 individuals. The total reflects an increase of 8 percent over the figures for the previous year. The population aged 10 through 17 increased only 4 percent during the same period. This reflects the upward trend in juvenile delinquency, which has climbed each year since 1949, with the exception of the year 1961 (ibid., pp. 12-14).

California reported similar trends. The Department

of Justice, Bureau of Criminal Statistics for that state reported (1963-1964) that the juvenile delinquency arrest rates for 1964 were 7 percent above the 1963 rates. Los Angeles County reported an increase of 8.9 percent for 1964. The cases reflected an increase in the rate of recidivism, with 5,805 children in thirteen counties re-referred for delinquent acts while they were currently under court jurisdiction, or were on unofficial probation because of previous juvenile acts (op. cit., pp. 12-13). These figures do not include traffic violations.

According to a report made to Congress by the Children's Bureau (1960, p. 3), approximately one-fifth of the children placed on probation violate the terms of probation and are brought back to court. Follow-up studies of delinquents indicate that from 30 to 40 percent of the youngsters placed on probation commit offenses of varying degrees of seriousness that bring them back to court within a few years. However, the same report points out that these studies are not easily compared because of variations in criteria employed. Brown (1947) pointed out that many definitions of recidivism are applied to the study of adult offenders in the United States.

Despite the difficulty in defining what is precisely meant by recidivism, it is a problem that appears in the F.B.I. statistical reports which point up the frequency of re-arrest of those who have been previously charged with

some crime exclusive of traffic offenses. Although numerous programs have been instituted to combat juvenile delinquency, a distinct problem of recidivism remains. The Attorney General reported to the President of the United States (1964) on extensive and elaborate programs which had been undertaken throughout the nation on a costly and far-reaching basis to combat delinquency. The programs were for the most part of a community action type and wide in scope. Other programs have been reported, such as that by Levy (1941), in which individual programs of therapy were initiated. The role which the educational system might play in the program has been discussed intensively by Kavaraceus (1945, 1954, 1956, 1958, 1959) and many others (Davidoff, 1951, and Dobbs, 1950).

The present study is directed toward the role of the school in helping to provide a more adaptive problem solving approach to life for the predelinquent child who has presumably developed a rigid, perseverative and stereotyped mode of behavior. The clinical aspects of therapy are not within the province of this study. It is not the purpose to develop a theory of delinquency nor to inquire into the dynamics of personality structure, but to take a behavioral approach in the study of the problem of the reappearing delinquent.

Summary

National and state-wide studies of juvenile delinquency

have shown an increase in the rate of arrests of minors (exclusive of traffic violations). The trend applies both to first offenders and to recidivists. Although many types of programs for rehabilitation of offenders have been instituted, the rate of recidivism continues to increase. Many workers look to the public schools to see what role they might play in helping to re-educate the children and to restructure their behavior patterns in such a way that they do not repeat acts which are violations of the social mores and legal statutes.

CHAPTER II

REVIEW OF LITERATURE

Theoretical Orientation

To understand the design of the current study one must first explore the relationship between the overt behavior of a child labeled as a delinquent by society and his perceptual functioning. Is his repeated delinquency a generalized behavior pattern which can be demonstrated in a simple motor learning task? Is there a relationship between the method of approach to a motor task and a rigid perceptual set? Do these two behavioral sets of data relate to a measure of ego strength in a way that can lead to a deeper understanding of the possible meanings of the behavioral style?

This is a time of ambiguity and uncertainty; the adolescent who does not have support and an adequately satisfying interaction with his peers, and with those whom he has in the past perceived as his authorities, can find life so stressful that the functioning of the entire organism is disrupted. The personality seeks a model and a norm by which it can form an image of itself. In its struggle for identity the ego seeks the simple, the uncomplicated,

the answer by which it can preserve the integration of the personality and its functioning in the world.

The personality theory that will be referred to is neo-Freudian in concept derivation. It is founded in the work of Harry Stack Sullivan (1953) and Erikson (1956) who lay strong emphasis on the social and interpersonal relationships of the individual as determining emotional events in the development of the nascent personality.

Frenkel-Brunswick (1949) and Erikson (1956) are the basis for the rationale underlying the above hypothesis, and for discussing the data obtained in the study. Erikson has discussed the problem of adolescent personality development from the standpoint of ego-identity (op. cit.). The adolescent must learn who and what he is, and how this self that he is relates to others. He is seeking to learn how he is perceived by the significant others in his life.

Frenkel-Brunswick has commented (1949, p. 136) that "Some children live in a situation comparable to permanent physical danger which leaves no time for finer discriminations and for attempts to get a fuller understanding of the factors involved but in which quick action leading to tangible and concrete results is the only appropriate behavior." She adds, "It is of course true that no child can fully master his environment." Whether or not the child's development proceeds beyond this phase depends, according to Frenkel-Brunswick and the later formulations of Erikson

on the atmosphere of the home, and the more specific expectations regarding the child's behavior. For progress in personal development to occur, Frenkel-Brunswick states that there must be a reduction of fear and a tolerance toward weakness in the child.

In order to reduce conflict and anxiety and to maintain stereotyped patterns certain aspects of experience have to be kept out of awareness. Assumptions once made, no matter how faulty and out of keeping with reality because of a neglect of relevant aspects, are repeated over and over again and not corrected in the face of new evidence. (Frenkel-Brunswick, 1949, p. 117)

Erikson (1956, p. 73) points out that the adolescent suffers from a diffusion of roles, and in his search for identity he is attempting to resolve this ambiguity. To quote Frenkel-Brunswick (1949, p. 125): "The evidence from both direct and indirect material thus suggests that children who tend to make unambiguous statements, i.e. either of total acceptance or of total rejection seem to be aware of only one or two aspects co-existing within their dynamic attitudinal make-up." Such children see things as all good or all bad; as either part of an in-group or an out-group. The in-group is all good and the out-group is all bad. Frenkel-Brunswick continues (op. cit., p. 134),

Too much existing emotional ambiguity and ambivalence are counteracted by denial and intolerance of cognitive ambiguity. It is as if everything would go to pieces once the existing discrepancies were faced. To avoid this catastrophe everything that might abet uncertainty and opaqueness of life is desperately avoided by a selection of undisturbing, clear-cut, and therefore too general or else too concrete aspects of reality. Greater rigidity of defenses is necessary to ward off the danger of becoming completely overwhelmed by the repressed forces.

These forces are described by Frenkel-Brunswick as being "tendencies such as aggression against authorities, fear or weakness" (*ibid.*, p. 134). Basically, therefore, avoidance of ambiguity and related mechanisms, directed as they are toward simplified mastery of the environment, turn out to be maladaptive in the end.

This dichotomy of goodness vs. badness has been discussed by Redl and Wineman (1957), Bettelheim (1955), and others as part of the behavior pattern of the acting-out child, the candidate for the juvenile courts. Which role the child sees as ego-syntonic may well reflect the values and behavior patterns of the group with which he finds an identity.

Frenkel-Brunswick has described the intolerant or prejudiced child. The dynamics which underlie his behavior are similar to those of the child identified by society as being delinquent. Kavaraceus (1956) and (1959) has described the delinquent child as one who has learned a way of behaving. The majority of such children are not suffering from severe personality deviations. Rather, they are reacting to inner conflicts resulting from an effort to adapt to environmental stresses.

Historical Development of the Concept of Rigidity and Its Personality Correlates

For the purpose of this study, the review of literature was restricted to studies of rigidity in problem solving and personality correlates such as authoritarianism as they

relate to the problem of juvenile delinquency.

J. W. Pinard (1932) found children with behavior problems to be perseverators. Stephenson (1934) in his studies of rigidity in problem solving showed psychotics to have high perseverative scores. Cattell's work (1935) associated with high perseverators demonstrated that subjects with "rigid" personalities also displayed characteristics of passivity.

Goldstein has a most comprehensive and systematic explanation of the problem. He says, "Rigidity is a normal phenomenon that becomes exaggerated in organic pathology" (1943, p. 228). He distinguishes two types of rigidity: (1) A primary rigidity due to the fact that a stimulus may arouse a response system so strongly that the person becomes incapable of shifting his response to new stimuli, and (2) A secondary rigidity that manifests itself only when the individual finds himself faced with a task with which he cannot cope. Goldstein thinks that such rigidity is a kind of defense that permits the person to evade new tasks that give him a feeling of catastrophic helplessness because they are now beyond his impaired capacity.

Dr. Catherine Wright reports one of the earliest studies of perseveration in problem solving with delinquent children (1944). She did her study in Australia using 500 delinquent youths. She found that their performance on the Porteus Mazes indicated poor problem solving ability and marked perseveration.

Rokeach (1948, p. 260) defined rigidity as the "inability to restructure a field in which there are alternative solutions to a problem in order to solve that problem more efficiently." He explains the relationship between problem solving rigidity and ethnocentrism with a concept of generalized rigidity which will "manifest itself in the solution of any problem, be it social or nonsocial in nature" (ibid., p. 259).

Fisher (1949) reviewed studies of rigidity and concluded that the experimental data point to a significant relationship between personality adjustment and perseveration. He listed various techniques used to measure rigidity, from early perseveration to tachistoscopically presented stimuli, subjects' reactions to ink blots, subjects' ability to shift categorization of ideas and objects, and subjects' manner in handling and integrating various kinds of play material.

Fisher summarized:

1. It is clear that the rigidity of persons of low I.Q. is generally greater than that of persons with high I.Q.
2. However, even within a group in which subjects are of the same intellectual level there are real differences in rigidity.
3. There is evidence that a person with organic brain damage is more rigid than the nonorganic individual.
4. Neurotics seem to be more rigid than normals. In some kinds of neurotics there is more rigidity than in other kinds, but rigidity is especially noted in the conversion hysterics.
5. Specific kinds of schizophrenics, especially the paranoid type, are more rigid than are normal subjects.

6. Persons who have been isolated from the world to some degree by blindness or deafness tend to be more rigid than others on the same intellectual level.
7. Several general character and attitude traits seem to be related to a degree of rigidity.
8. When different kinds of rigidity measures are applied to the same group there may be real differences in the results given by the various measures. (Fisher, 1949, pp. 349-51)

Fisher further stated in a later study (1950, p. 41) that "it is possible to note simultaneously correlated and complimentary rigidity trends in the same subject." He postulates two rigidity levels in personality structure, "an ego level and a peripheral level." Fisher continues (loc. cit.),

Internal personality rigidity may show itself externally in a form that appears to be just the opposite of rigidity and even seems to imply extreme flexibility. There are numerous examples of subjects who are fearful and highly rigid in adjusting to ego-involved situations, but who mobilize an unusual amount of unnecessary flexibility in adjusting to peripheral unimportant tasks. This nonfunctional and superfluous peripheral flexibility seems to represent a false "emergency reaction," a compensatory effort stimulated by the insecurity associated with an overly rigid ego defense system.

The hypothesis that frustration, interpolated between a learning situation and a subsequent test, would increase the rigidity of problem solving set was proposed in a study by J. R. Christie (1949). Luchins Water Jar Problems were used. Following the criterion problem, the control group was given a different task that was solvable for the control

group but not for the experimental, thus producing frustrations in the experimental group. Both groups were then given new problems which were similar to the first but not solvable by the "set." The experimental group took twice as long to solve the problem as the control. Differences were significant at the .02 level. The results bear out the hypothesis that frustration increased rigidity. Ethnocentrism scores were available, and high ethnocentrics showed a greater tendency to persevere in problem solving. Of the "highs" and "lows" who accepted the "set" it was found that the "highs" took longer to solve the last set of problems. These findings support Rokeach's results (1948) related to the correlation between measures of rigidity and ethnocentrism.

In studies of the history of perseveration as well as typologies, Kenneth Rogers (1951) gives a rather complete survey of the literature related to studies of the relationship between rigidity in problem solving and personality characteristics.

Psychological rigidity as a general response characteristic that pervades all aspects of an individual's behavior was proposed by Emory L. Cowan and George G. Thompson. "A person's behavior should show similar effects of this generalized response tendency in perception, problem solving, emotions, motor responses, etc." (1951, p. 166). An implicit hypothesis of the study was that there was an increased

relationship between "good adjustment" and flexibility. No rigorous theoretical derivation of the postulate was attempted in the study. Rigidity was defined as, "a tendency to adhere to a previously practiced method of problem solving when that method no longer offers most direct and efficient means of solving the problem" (*ibid.*, p. 168). The definition was derived from the Einstellung type of task in which the set immediately predisposes the organism toward one type of motor or conscious activity. Groups of eighth grade children had been previously organized as rigid and flexible on the basis of Luchins Water Jar Problems using several "set" problems then shifting the solution method.

Personality inventories failed to differentiate between rigid and flexible children. The Rorschach scored by Beck's method did not differentiate the rigid and flexible groups at an acceptable level. "It would appear that the type of conforming behavior of which the popular response is theoretically representative is unrelated or possibly negatively related to the type of rigidity studied in this type of investigation" (Cowen and Thompson, 1951, p. 172).

Cowen and Thompson concluded that assuming a relationship between Rorschach responses and personality attributes, the personality factors that appear to be related to Einstellung rigidity, as contrasted with flexibility include, (1) Limited productivity and imaginativeness, (2) Diminished resourcefulness, (3) Inability to perceive complex

relationships and to integrate constructively, (4) A generalized expression of emotional depression with respect to both rich inner creativity and interaction with the outer environmental reality, (5) An inability and hesitancy to enter psychologically new situations combined with a feeling of uncertainty and lethargy when actually in such situations, (6) Tendency to "leave the field" when the going gets difficult, (7) A restricted range of interest and narrower sphere of function, and (8) A poorer adjustment of society.

Rigidity of goal setting techniques was related to the pattern of goal setting behavior of the individual in a study by Norman I. Harway. "The concept of a general rigidity factor that manifests itself in the same manner in the solution of all problems regardless of the nature did not seem tenable" (1952, p. 39). "Behaviorally, the rigid group was more variable in level of aspiration setting. The level of aspiration behaviors differentiating the rigid and nonrigid groups of subjects were similar to those which other investigators found to be related to longer satiation time and difficulty in restructuring the field." These were interpreted as measures of rigidity within a Lewinian framework (*ibid.*, p. 134).

Rigidity is referred to in Harway's study as "the failure of an individual to find an objectively shorter and more efficient approach to the solution of a problem and

his continued usage of an objectively longer and more cumbersome method of solution which he has learned in solving similar problems in the experimental setting" (*ibid.*, p. 65). Intellectual factors, brain damage and aging were held constant. Harway referred to Cattell and Tiner's definition of rigidity as a "factor" (Cattell and Tiner, 1949). Harway found rigidity related to ethnocentrism and tending to think concretely, associated negatively with character integration, dominance and cheerfulness, and positively with general emotionality.

Cowen proposed an operational definition of rigidity as, "A persistence of behavior in an induced method of problem solving when that behavior no longer is the most direct or efficient method of solving the problem. Such perseverative behavior involving the inability to change one's set has generally been subsumed under the concept of rigidity" (1952, p. 513). Cowen's hypothesis was, "Increasingly stressful psychological atmospheres will tend to elicit increasingly rigid problem solving behavior" (*ibid.*, p. 514). Luchins Water Jar Problems were used. Subjects were 75 students who volunteered. They were divided into three groups of 25 each; one group was a control, or without stress, a second received mild stress and a third strong stress.

In Cowen's study, the primary measure of rigidity was based on six crucial problems and two extinction problems. Certain secondary measures of rigidity were also available,

such as: Slower average time of response to the test series; failure to solve the extinction problem, or resistance to the extinction of an inappropriate act. A basic finding of the study was that problem solving rigidity increases under increasing degrees of psychological stress.

Brown, in his unpublished doctoral dissertation (1952), used high school and college students as subjects in a study of the relationship of rigidity to authoritarianism. His test battery included the California Fascism Scale (as a measure of authoritarianism), the Einstellung Arithmetic Problems of Luchins (as a measure of rigidity), and McClenan's Projective Measure of Need for Achievement (as an index of achievement anxiety). "The group that received the more ambiguous directions showed a significantly higher correlation between Fascism scores and Einstellung problem scores than did the group with relatively explicit directions" (op. cit., p. 120). Brown concluded that failure on Einstellung problems may be associated with anxiety related to achievement. He surmised that the combination in child training of emphasis on dependence and on competitive success and avoidance of failure tends to produce anxiety, over-achievement and authoritarian attitudes. For these reasons, failure on ambiguous tasks administered with an ego-involving orientation Brown concluded to be associated with high Fascism scores on the Minnesota Multiphasic Personality Inventory.

Quoting Cowen, Wiener, and Hess (1953, p. 101), "To generalize somewhat, workers in this area have regarded the basic process involved in what we call problem solving rigidity as constituting a paradigm of maladaptive behavior." Cowen and his co-authors emphasize the importance of the relationship between rigidity, hostility, authoritarianism and intolerance, and on the other hand self-acceptance, love and understanding.

The Ego-Strength Scale, derived by Barron (1954) from a pool of Minnesota Multiphasic Personality Inventory items, is negatively related to rigidity. The Ego-Strength Scale differentiated between patients who did well in psychotherapy and those who did not, showing that high ego strength is predictive of favorable therapeutic outcome. This seems reasonable because the modification in patient personality is facilitated by high psychological flexibility.

Rehfishch (1958) defined a rigid personality as having qualities of: (A) Constriction and inhibition, (B) Conservatism, (C) Intolerance of disorder and ambiguity, (D) Obsessional and perseverative tendencies, (E) Social introversion, (F) Anxiety and guilt. This composite was derived from a survey of personality studies.

Rehfishch used subjects rated on rigidity by staff members of the Institute of Personality Assessment and Research. He used 330 male subjects including high school seniors, medical school applicants, and 100 Air Force Captains.

Items for his experimental Rigidity Scale were drawn from the Minnesota Multiphasic Personality Inventory and the California Personality Inventory. The Gough Adjective Check List was employed for cross validating the scale. The most salient dimensions defined by the two sets of adjectives on this instrument were anxious restraint, meticulous conscientiousness and conservatism versus vigorous, versatile, self-confident spontaneity of thought and action.

The final Rigidity Scale was based on the responses of subjects rated in the highest and lowest 25 percent by the staff members of the Institute. Results showed that high raters in rigidity on the experimental scale were socially and emotionally constricted and anxious. They were intolerant of disorder, irregularity and unpredictability and were perseverative, slow in making decisions, conservative, conventional, lacking in self-confidence, misanthropic, and obsessively involved in work.

In October, 1958, Rehfisch, in a subsequent study, correlated his Rigidity Scale with: (A) The standard Minnesota Multiphasic Personality Inventory scales, (B) Three special Minnesota Multiphasic Personality Inventory scales of anxiety, ego strength and leadership, (C) The standard California Personality Inventory, (D) Concept Mastery Test, (E) Idea Classification Test, (F) Tests from the Guilford Creativity Battery, and (G) Ethnocentrism and Fascism Scales.

Subjects who attained high rigidity scores on Rehfisch's scale showed socially introverted and submissive qualities, were relatively lacking in social presence, and were poor in leadership ability. Other correlates showed that such individuals are likely to be anxious and depressed, self-dissatisfied and emphatic in the expression of their complaints. There are indications that those with high rigidity scores are less intellectually efficient, less motivated toward scholastic achievement, and less original, as determined by the Unusual Uses and the Gestalt Transformation tests taken from Guilford's Creativity Battery. Correlations of the Rigidity Scale with the Fascism and Ethnocentrism Scales were significant at the 5 percent level, and negatively with Barron's Ego-Strength Scale at the 1 percent level. These data support findings relevant to personality structure and prejudice, and rigidity in contrast to psychological flexibility in adaptive problem solving.

Summary

From the turn of the century to the present, psychologists have been interested in studying problem solving rigidity and its relationship to correlates of personality. Early work was carried on by the Gestalt psychologists and carried forward by theorists such as Cattell.

With the development of the Minnesota Multiphasic Personality Inventory and its many scales, investigators such as Else Frenkel-Brunswick began to find relationships

between rigidity of perception and certain dimensions of personality such as that defined as Fascistic. Rehfisch followed with the development of a Rigidity Scale per se which has been widely employed in conjunction with studies of problem solving, adaptability and social adjustment.

These studies have led to the conclusion that there is a relationship between rigidity and a lack of ability to shift perceptual set. Both of these factors are related to a personality structure which is poorly adapted for coping with lack of structure and ambiguous social situations.

CHAPTER III

PLAN OF STUDY AND RESULTS

The hypotheses to be tested in this study were as follows: (1) There is a positive relationship between recidivism among juvenile delinquents and rigidity in problem solving and perception. (2) There is a negative relationship between a measure of Ego-strength and flexibility in problem solving. It was further hypothesized that on a measure of ego functioning a delinquent population would achieve significantly lower scores than a comparable non-delinquent population and that the recidivist population would receive scores significantly lower than either the first offender or nondelinquent groups.

Subjects

The experimental group was composed of forty male subjects who were admitted to the Juvenile Hall in Los Angeles County over a three-month period of time. The subjects were selected at random from an alphabetical list of offenders and were divided into two groups: recidivists and first offenders.

Only those delinquents who had been arrested for such

offenses as drunkenness, out after curfew, incorrigibility, and run-away-from-home were excluded, as were narcotics offenders. These latter, i.e., narcotics offenders were excluded because of the possibility that they might be undergoing withdrawal symptoms resulting in a distortion of perception or a lack of eye-hand coordination. The former group arrested for drunkenness and other offenses listed above were excluded because they represented delinquency as defined by local sanctions against certain behaviors by minors rather than infractions of the criminal code as it would be applied to all individuals regardless of age. Those infractions which were representative of the sample in this study were largely felonies such as kidnap, burglary, assault with a deadly weapon, murder, and arson.

The subjects ranged in age from twelve to eighteen years and included all ethnic groups represented in the Juvenile Hall population at the time the study was being made.

Socioeconomic status was established for each subject on the basis of Warner's Seven Point Scale (1960). This rating system, using parent's occupation as the index, has been found to correlate most highly with all other measures of socioeconomic status. The mean for all groups in this study was found to be "four" which rating includes such occupations as stenographers, bookkeepers, factory foremen, plumbers, sheriffs, dry cleaners (Warner, 1960, pp. 140-1).

To control the effect of intelligence, only subjects who attained scores placing them between plus and minus one standard deviation on both the verbal and performance scales of either the Wechsler Intelligence Scale for Children or the Wechsler Adult Intelligence Scale were included in the study. Age of the subject was the determining factor in selecting which intelligence test was appropriate.

A comparison group with no record of juvenile arrests was selected from students enrolled in the public schools of Los Angeles County. This group was comparable in terms of age, sex, I.Q. and socioeconomic status.

Mean I.Q.s for the three groups were established by individual administration of the Wechsler Intelligence Scale for Children or the Wechsler Adult Intelligence Test. They were:

| | |
|------------------|-------|
| First Offenders | 99.5 |
| Recidivists | 100.6 |
| Comparison Group | 100.6 |

Methods and Procedures

All tests were administered individually and directions as well as the test items themselves were read to the subjects aloud to compensate for any lack of reading ability on the part of the individuals being tested.

Tests Used

Performance Task.--A punch board maze as described by

Jones in 1945 (See Appendix, Figs. 1 and 2). Reliability of the instrument is .78 based on a population of 114 boys and girls enrolled in a public junior high school. Mean I.Q. of the subjects was 102. The apparatus was planned with the object of providing signals that would automatically register "right" and "wrong" responses. The surface consisted of a sheet of Bakelite perforated with ten columns of holes; four holes in each column. The holes were three-eighths of an inch in diameter with one inch between centers. Beginning with the first column, or entrance, the subject's task is to thrust the stylus through the hole trying to make contact points with as many green lights as possible, providing positive reinforcement, and attempting to avoid contact points to which the response would be a red light and buzzer.

Instructions were given to the subjects as follows: "This is a maze, you are to begin here (pointing) and end up over here (again pointing) hitting as many green lights as possible and avoiding the red light and buzzer. You will have ten chances to make as good a score as you can. I will keep score for you. The only rule is that you can't back track, once you pass a point you have to keep going ahead until the next trial."

In balanced halves of the experiment alternative patterns of correct responses were used. While it was not essential that the two patterns be of equal difficulty,

they were designed to be as closely so as possible. The green light was selected as a presumably pleasant stimulus, the buzzer and red light as a disagreeable one.

Phase one of the maze test included a measure of the total number of errors per trial and total number of "same" errors per series of ten trials.

Phase two, or the second pattern, was presented by shifting the screen from the lower to the upper half of the punch-board face plate. Total number of errors per test run were again measured, as well as perseverative errors, that is, choices which were correct on the first phase but were errors on the second phase. These were scored separately.

Problem solving and perceptual organization.--These tests were taken from Guilford's "A Factor Analytic Study of Creative Thinking: I. Hypotheses and Description of the Tests" (1951). The rationale for the use of these tests was based on findings reported earlier by Rehfisch (October, 1958). However, Rehfisch used only the Unusual Uses (later titled Alternate Uses) and Gestalt Transformation tests in his study. The present study included additional tests from the battery: Picture Gestalt, Circle Square I, and Penetration of Camouflage. These tests were selected because of the hypothesized factor measured by each and because they involved a minimum of verbal skills on the part of the subject.

Reliability of the Creativity Battery of tests was established using a population of 410 male Air Force Student Officers and Air Cadets and were found to be:

| <u>Test</u> | <u>Reliability</u> |
|------------------------------|--------------------|
| 1. Gestalt Transformation | .51 |
| 2. Picture Gestalt | .51 |
| 3. Circle Square I | .97 |
| 4. Penetration of Camouflage | .83 |
| 5. Alternate Uses | .69 - .81 |

A brief description of the tests and the hypothesized factor measured by each follows:

1. Gestalt Transformation--hypothesized factor, Re-definition, Shift of function. In this test the subject is presented with twenty problems which represent simple tasks to be accomplished by the use of part of an object offered as one of five alternative choices. The subject places a check mark beside the object which he thinks has a part which would best solve the problem.
2. Picture Gestalt--hypothesized factor, Redefinition, Shift of function. In this test the subject is shown three pictures of rooms containing household furnishings. Eight problems are presented with each picture. The problems require the subject to select a part of the objects shown in this picture, or an entire object, and by mentally

defining its possible uses accomplish the task posed by the problem.

3. Circle Square I--hypothesized factor, Flexibility, adaptive. This test consists of a list of 30 parts of objects. One object is, in reality, shaped like a square and the other is round. The subject is asked to consider some other qualitative aspect of each object such as its weight, texture, function, and so forth. He is then to relate this quality to the shape of the object, i.e., round or square, and place a check mark beneath a drawing (provided) indicating whether the round object should be outside the square or the square object outside the round.
4. Penetration of Camouflage--hypothesized factor, Redefinition, perceptual reorganization. The test consists of four pictures in which there are hidden faces. The subject is to locate the position of each of the hidden faces (see Appendix, Figs. 3-8).
5. Alternate Uses--hypothesized factor, Flexibility, adaptive and spontaneous. Items in this test consist of nine common objects with their usual uses given. The subject's task is to list as many as six other uses for which the object, or part of the object, could serve.

Ego Functioning.--A measure of ego-strength developed by Frank Barron (1953) was also used. This instrument was selected in preference to the more frequently used Fascism Scale or the Rigidity Scale because the questions contained in those two scales involved ethnic and sexual problem areas which could introduce additional variables into the study. Barron's Ego-Strength Scale was selected because of its high negative correlation with measures of rigidity as reported by Rehfisch (1958). Reliability of the scale is .76 established on a clinic population of 126 patients. It is composed of sixty-six items derived from the Minnesota Multiphasic Personality Inventory. The original use of the instrument had been to predict success in psychotherapy for patients presenting themselves for treatment in a clinic setting. However, as Barron suggests, what is being measured is the general factor of capacity for personality integration. Among the characteristics which were collectively referred to as ego-strength were physiological stability and good health, a strong sense of reality, feelings of personal adequacy and vitality, permissive morality, lack of ethnic prejudice, as well as emotional outgoingness and spontaneity, and intelligence. Barron suggests that the instrument may serve as a predictor in situations which call for an estimate of personal adaptability and resourcefulness. Construct validity of the scale was established by Tamkin (1957).

Statistical Analysis of Data

The data for each variable were analyzed using a "planned comparisons" approach to the analysis of variance as outlined by Hays (1965, p. 463). The conventional one-way analysis of variance answers the general question whether any of the means are significantly different from any of the other means. The "planned comparison" approach uses the same error term and same logic, but allows asking more specific questions.

The first comparison asked the general question: Is the mean of the comparison group significantly different from the combined mean of the two juvenile delinquent groups? It also asked: Does the mean of the first offenders differ significantly from the mean of the third offenders? These two comparisons were orthogonal, i.e., independent. Together they account for all the variance in the data that can be attributed to difference between group means. While orthogonal comparisons are preferred as a more rigorous way of analyzing the data, it is also possible to use the "planned comparison" format for nonorthogonal comparisons. In this study, a nonorthogonal approach was equivalent to running three separate t tests on the data, since t equals F where t has x degrees of freedom and F has one plus x degrees of freedom.

Unlike the t test, F has two sets of df , or degrees of freedom, one set for the numerator and one set for the

denominator. The above formula works only when the F has one df for the numerator and the same number of dfs for the denominator as the t test has. Note the "planned comparisons" always having one df for the numerator. A formula converts these "planned comparisons" into SS (sum of squares) which are tested in the usual analysis of variance way. Since each of these contrasts has one df, SS effect = MS effect and $F = \frac{MS \text{ effect}}{MS \text{ error}}$.

Following are analyses of results of tests. Statistical significance was accepted at the .05 level.

Ego-Strength.--Table 1 indicates that while there were no significant differences found, the figures for comparison group vs. first offenders and recidivists were approaching $p < .10$. While the difference between the groups was not significant at the .05 level, it was $< .10$ which could be interpreted as reflecting a trend toward rigidity on the part of the delinquent population studied. These findings, although of interest, have to be interpreted with caution. The result may be attributable to the fact that the age group in the study was somewhat younger than that employed by Barron (1953) in his initial study.

Alternate Uses.--All results could have occurred by chance. None were significant.

Gestalt Transformation.--There were no significant differences between the three groups.

Circle Square I.--None of the differences were found

TABLE 1
ANALYSIS OF VARIANCE COMPARISONS

| | | Orthogonal | | Nonorthogonal | | MS Err- or |
|--------------------------------|----|--|---------------------------------------|--|--|------------------|
| | | Comparison Group vs. 1st & 3rd Offenders | 1st Offenders vs. 3rd Offenders | Comparison Group vs. 1st Offenders | Comparison Group vs. 3rd Offenders | |
| Ego Strength | SS | 113.30 | .90 | 66.10 | 85.12 | 38.83 |
| | F | 2.91 | <1 | 1.70 | 2.19 | |
| | P | (<.10) | NS | NS | | |
| Alternate Uses | SS | 72.20 | .10 | 50.54 | 45.49 | 28.03 |
| | F | 2.57 | <1 | 1.80 | 1.62 | |
| | P | NS | NS | NS | NS | |
| Gestalt Trans- formation | SS | .85 | 1.20 | 1.46 | .13 | 10.12 |
| | F | <1 | <1 | <1 | <1 | |
| | P | NS | NS | NS | NS | |
| Circle- Square | SS | 5.10 | 7.20 | .13 | 11.31 | 15.66 |
| | F | <1 | <1 | <1 | <1 | |
| | P | NS | NS | NS | NS | |

TABLE 1--Continued

| | | Orthogonal | | Nonorthogonal | | MS Err- or |
|--|----|--|---------------------------------------|--|--|------------------|
| | | Comparison Group vs. 1st & 3rd Offenders | 1st Offenders vs. 3rd Offenders | Comparison Group vs. 1st Offenders | Comparison Group vs. 3rd Offenders | |
| Picture Gestalt | SS | 31.25 | .40 | 24.20 | 17.56 | 10.29 |
| | F | 3.03 | 1 | 2.35 | 1.70 | |
| | P | (<.10) | NS | NS | NS | |
| Camouflage Penetra- tion | SS | 9.10 | 65.00 | 47.88 | 5.59 | 25.29 |
| | F | <1 | 2.57 | 1.89 | <1 | |
| | P | NS | NS | NS | NS | |
| Figures in Camou- flage seen but not there | SS | 12.15 | 40.00 | .67 | 42.16 | 7.34 |
| | F | 1.65 | 5.44 | 1 | 5.74 | |
| | P | NS | <.025 ^a | NS | <.025 ^a | |

^a - Exceeds 5% level of confidence

to be significant.

Picture Gestalt.--In this test there is a marginally significant difference between the comparison group and combined juvenile delinquent groups though it was not significant at the accepted level.

Camouflage Penetration.--There was a significant difference found between the three groups (figures seen in camouflage but not there). The differences which exceeded the .05 level were those between first offenders and recidivists and between the comparison group and recidivists on the Penetration of Camouflage Tests (see Table 1). More chances, or guesses, were made by the first offenders and the comparison groups. These two groups saw more figures present in the stimuli presented when none was there than did the recidivists. This occurred although all groups were cautioned against "guessing" as part of the instructions and were told that there was a correction factor or "penalty" for guessing (see Table 2).

These results on the Penetration of Camouflage Test tend to support the conclusions of Fisher (1950, p. 41) in which he states:

Thus numerous examples have been found in the data of subjects who are fearful and highly rigid in adjusting to Ego-involved situations, but who mobilize an unusual amount of flexibility in adjusting to peripheral unimportant tasks. . . . This nonfunctional and superfluous peripheral flexibility seems to represent a false "emergency reaction," a compensatory effort stimulated by the insecurity associated with an overly rigid Ego-defense system.

TABLE 2
MEAN SCORES

| Psychological Test Characteristics | Comparison Group | First Offenders | Third Offenders |
|--|---------------------|--------------------|--------------------|
| Ego Strength | 41.33 | 39.10 | 38.80 |
| Alternate Uses | 16.90 | 18.85 | 18.75 |
| Gestalt Transformation | 8.98 | 8.65 | 8.90 |
| Circle-Square | 24.38 | 24.30 | 23.45 |
| Picture Gestalt | 15.90 | 14.55 | 14.75 |
| Camouflage Penetration | 11.90 | 13.80 | 11.35 |
| Figures in Camouflage seen but not there | 4.98 | 5.20 | 3.20 |
| <u>Maze Scores Reported as Percent</u> | | | |
| <u>Phase I</u> | | | |
| Total Errors (as a per- cent of total attempts) | 78.18 | 77.70 | 75.85 |
| Same Errors (as a per- cent of total errors) | 79.55 | 77.90 | 77.35 |
| <u>Phase II</u> | | | |
| Total Errors (as a per- cent of total attempts) | 80.98 | 75.50 | 77.20 |
| Same Errors (as a per- cent of total errors) | 78.85 | 73.40 | 72.40 |
| Perseverative Errors (as a percent of total errors for Phase II) | 30.7 | 20.40 | 24.15 |
| <u>Total Attempts</u> | | | |
| Phase I | 167.3 | 167.60 | 164.45 |
| Phase II | 161.03 | 125.40 | 124.35 |

The finding is also related to Rokeach's (1955), that rigidity of personality structure is related to a "tight" Ego-defense system.

Mazes.--This trial and error learning situation appeared to elicit the greatest distinction between the juvenile delinquent group and the comparison group.

Phase I.--In Phase I, the comparisons between groups showed the recidivists made fewer attempts and received lower error scores than did the comparison group. In calculating the same errors (as a percent of total errors), the comparison groups again received higher error scores although none of these were statistically significant (see Table 2).

Phase II.--In Phase II, there was no significant difference between the first offenders and the third offenders. However, between the comparison group and the first offenders there was difference significant at the .05 level. With the comparison group versus recidivists there was a difference significant at the .01 level. In each case the delinquent population received lower error and perseverative error scores than did the comparison group. This difference, in terms of the perseverative errors calculated as a percent of the total attempts, exceeded the .05 level (see Table 3). The finding could be attributed to the fact that the first offenders and recidivists made fewer attempts at a correct solution than did

TABLE 3
ANALYSIS OF VARIANCE MAZE SCORES

| | | Orthogonal | | Nonorthogonal | | MS Err- or |
|--|----|--|---------------------------------------|--|--|------------------|
| | | Comparison Group vs. 1st & 3rd Offenders | 1st Offenders vs. 3rd Offenders | Comparison Group vs. 1st Offenders | Comparison Group vs. 3rd Offenders | |
| Phase I | | | | | | |
| Total Errors (as percent of total at- tempts) | SS | 39.50 | 34.20 | 3.06 | 72.22 | 10.00 |
| | F | 3.95 | 3.42 | <1 | 7.22 | |
| | P | (<.10) | (<.10) | NS | <.01 ^a | |
| Same Errors (as percent of total errors) | SS | 74.10 | 4.20 | 36.18 | 64.37 | 31.45 |
| | F | 2.35 | <1 | 1.15 | 2.04 | |
| | P | NS | NS | NS | NS | |
| Phase II | | | | | | |
| Total Errors (as percent of total at- tempts) | SS | 428.75 | 28.90 | 399.40 | 190.06 | 29.08 |
| | F | 14.74 ^a | <1 | 13.73 ^a | 6.53 ^b | |
| | P | <.01 ^a | NS | <.01 ^a | <.025 ^b | |
| Same Errors (as percent of total errors) | SS | 708.00 | 10.00 | 395.01 | 553.28 | 61.48 |
| | F | 11.51 ^a | 1 | 6.42 | 8.99 ^a | |
| | P | <.01 ^a | NS | <.025 ^b | <.01 ^a | |

CONTINUED

1 OF 2

TABLE 3--Continued

| | | Orthogonal | | Nonorthogonal | | MS Err- or |
|---|--------------------|--|---------------------------------------|--|--|------------------|
| | | Comparison Group vs. 1st & 3rd Offenders | 1st Offenders vs. 3rd Offenders | Comparison Group vs. 1st Offenders | Comparison Group vs. 3rd Offenders | |
| Perseverative errors (as percent of total errors for Phase II) | | | | | | |
| SS | 1,429.75 | | 140.60 | 1,419.11 | 575.89 | 35.03 |
| F | 40.81 ^a | | 4.01 | 40.51 ^a | 16.43 ^a | |
| P | <.01 ^a | | <.05 | <.01 ^a | <.01 ^a | |
| Total Attempts | | | | | | |
| Phase I | | | | | | |
| SS | 35.10 | | 99.20 | .80 | 111.85 | 3,705.59 |
| F | <1 | | <1 | <1 | <1 | |
| P | NS | | NS | NS | NS | |
| Phase II | | | | | | |
| SS | 26,143.70 | | 11.00 | 16,884.35 | 17,894.09 | 2,771.06 |
| F | 9.43 ^a | | 1 | 6.09 | 6.45 | |
| P | <.01 ^a | | NS | <.025 ^b | <.025 ^b | |

^a=Exceeds 1% level of confidence

^b=Exceeds 5% level of confidence

the comparison group. These findings, however, bear out those of Fisher (1949) regarding rigidity in neurotic individuals and those of Wright (1944) regarding problem solving tasks with delinquent youth.

Discussion

An attempt was made to hold constant all recognizable variables which could have biased the experiment such as intelligence, reading ability and socioeconomic status. However, one variable which was not controlled and may have influenced the findings was the setting in which the tests were administered. The comparison group members were tested individually in their own schools where they were called from their classes and asked to participate in an experiment on a voluntary basis. The first offenders and recidivists were called from their classes at Juvenile Hall and were held in an observation ward until the experimenter was ready to call them. They were tested in a psychiatrist's office in the Juvenile Hall Clinic. Although they were reassured that all results were confidential and would have no bearing on their court case, they asked frequently if the fact that they had volunteered to participate in the experiment would "look good on their record?" The fact that the delinquent population was tested in a psychiatrist's office (the office was so labeled on the door), could have created an aura which led them to be more wary and cautious in their responses and their total

approach to the test situation.

Another factor to be considered in interpreting the results obtained from the study of the delinquent population is that their desire to "look good" could have erected a motivational set which caused them to put forth more effort to create as good an impression as possible. This may account for the negative results obtained on the Maze, i.e., the delinquent population took fewer chances than did the comparison group and earned significantly better scores than did the comparison group.

An interesting observation which was made during the testing, although not part of this study, was that those delinquents who were grouped with the offenders against persons would finger the maze as they attempted to learn the correct response pattern. This kinesthetic approach was not observed among the delinquents who were grouped with offenders against property. This casual observation of what may be a specific learning approach by this group of delinquents (both first offenders and recidivists) might be a fruitful avenue for future study.

Another suggestion for further research with juvenile delinquents is greater use of performance type tests, such as the Level of Aspiration Tests or a finger maze of some type, since it was the Maze in the present battery of tests that yielded the most significant differences between the groups studied. Though the Porteus Mazes have been used

for a number of years to study delinquent populations, the observations made during the present experiment suggest that tests involving actual physical performance could produce results which would offer a different type of information from those eduved from the usual paper and pencil tasks.

Other factors which could be relevant to future studies of this type might be a consideration of gang membership, and whether or not the offender was a member of such a unit at the time he was apprehended. It might also be relevant to know if the delinquent was the gang leader, or his relative position in the peer group. Such information could be combined with a measure of self-concept to assess the underlying dynamics of the delinquent personality. Does he perceive himself as a "good guy" who has been mistreated by society or his family? Does her perceive himself as a "bad guy" who is basically hostile to an authoritarian figure? Some of these aspects contributing to delinquency have been treated in earlier studies, but none has taken the point of view of Erickson or Frenkel-Brunswick in an interpretation of the dynamics involving juvenile delinquency and recidivism.

In this particular study, it was noted in examining the records of the recidivists that the majority of the group had spent from six months to three years in foster homes. This type of familial arrangement could introduce

a state of anomie in which the adolescent feels there are no significant others in his life-space. This lack of identity could produce the sense of ambiguity and anxiety leading to the rigidity which has been referred to in this study and those cited above. Such rigidity would make re-education difficult unless the total self-image and Ego were restructured either through psychotherapy or some other type of re-educative procedure. Further investigation seems warranted.

Summary

The hypotheses proposed in this study are not supported by the data. Results indicate that the hypotheses can be accepted at the .05 level of confidence in only two cases; the Mazes, a performance test, and Penetration of Camouflage, a test of perceptual reorganization. The hypothesis that there is a positive relationship between rigidity in problem solving and perception and recidivism was demonstrated to exist in a negative direction.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the relationship between recidivism among male juvenile delinquents and perceptual and problem solving rigidity. It was hypothesized that this rigidity was related to what Frenkel-Brunswick (1949) and others have described as an aspect of personality structure which could be objectively measured. Characteristics of this type of personality have been extensively studied and have been related to such features of individuality as lack of tolerance for ambiguity, inability to restructure stimuli, difficulty in coping with problems related to authority, and what Barron (1953) and Erickson (1956) have defined as a lack of Ego-strength or sense of identity.

The specific hypotheses to be tested in this study were as follows: (1) There is a positive relationship between recidivism among juvenile delinquents and rigidity in problem solving and perception. (2) There is a negative relationship between a measure of Ego-strength and flexibility in problem solving. It was further hypothesized that on a measure of Ego functioning a delinquent

population would achieve scores significantly lower than a comparable nondelinquent population and that the recidivist population would receive scores significantly lower than the first offenders or the nondelinquent population.

Subjects for the experimental group consisted of forty minor males ranging from twelve to eighteen years, who were being detained at Juvenile Hall in Los Angeles County. All ethnic groups represented in the Hall were included in the study. The subjects were divided into two groups: (1) Recidivists and (2) First Offenders. Only those delinquents who were arrested for offenses such as drunkenness, out after curfew, incorrigibility, and so forth were excluded, as were narcotics offenders. Socioeconomic status of the subjects was established using parent's occupation as the index on Warner's Scale of seven points (1960). The mean for all groups was found to be four on this scale.

A comparison group with no record of juvenile arrests was selected from students enrolled in public schools of Los Angeles County. This group was comparable in terms of age, sex, I.Q., and socioeconomic status to the delinquent group.

Individual tests of intelligence were administered, i.e., the Wechsler Intelligence Scale for Children, or the Wechsler Adult Intelligence Scale. Only subjects who attained scores placing them between plus or minus one standard deviation on both the verbal and performance scales were included in the study.

Tests used in the study included a performance task, paper and pencil measures of perceptual and problem solving rigidity and a personality scale. All tests were administered individually. Directions as well as test items (where appropriate) were read aloud to the subjects to control variability in reading skills.

An analysis of variance statistical treatment of the data were used to analyze the test results. The methods of orthogonal and nonorthogonal comparisons were used with the following results: Only the performance task, i.e., Mazes, yielded results significant above the .05 level and this was in a negative direction. Similarly, the Penetration of Camouflage Test indicated a significant difference between the delinquent and comparison groups.

In the Penetration of Camouflage Test, the first offenders took more guesses and reported seeing figures present where none existed more frequently than did the comparison group or the third offenders. This difference was statistically significant in comparing scores between the first offenders and the third offenders ($p < .025$). The recidivists or third offenders, took fewer guesses than did either of the other two groups and received significantly different scores, in terms of less errors made, than did the first offenders ($p < .025$).

The performance test, Mazes, also elicited statistically different scores between groups. In this test, used to

measure perseveration, the delinquent population made fewer attempts at a correct solution and thus made fewer errors. The results were statistically significant between the first offenders and third offenders when contrasted with the comparison group ($p < .01$).

The results of this present study indicate that the hypothesis of a positive relationship between rigidity in perception and problem solving and recidivism cannot be accepted at the .05 level of confidence. Rigidity, in the classic definition of the concept (as measured by perseveration and a lack of flexibility in a problem solving task), was not demonstrated to distinguish between a delinquent population and a comparison group. However, the statistically significant results obtained between the groups could be interpreted as resulting from a wariness on the part of the delinquent population; a cautiousness and unwillingness to experiment with new modes of behavior. Should this be the case, the underlying theoretical bases of Erickson and Frenkel-Brunswick would be supported by the data.

Factors which may have influenced the results of this study but which were not considered in the design were:

- (1) The setting in which the testing was conducted, i.e., a public school room for the comparison group in contrast to a psychiatrist's office for the delinquent population.
- (2) Gang membership at the time of apprehension of the delinquent and relative status of the subject within his peer

group. (3) Relationships to significant others such as parents, siblings, teachers, and foster parents.

The number of years spent in foster home placement might be considered in future studies. It was noted in collecting the data on recidivists that the majority had spent from six months to three years in such living arrangements. This type of familial arrangement could introduce a state of anomie in which the adolescent feels there are no significant others in his life-space and consequently lead to the anxiety and rigidity due to lack of identity to which Frenkel-Brunswick (1949) and especially Erickson (1956) refer.

Future studies might include instruments and techniques utilizing some type of performance test. This study, and that of Wright (1944), found that the maze type of performance task yields most fruitful data in the study of a delinquent population.

Societal, personal and interpersonal relationships all affect the developmental pattern of the individual. Which behavior becomes adaptive or maladaptive is often determined by time and circumstance. Yet, in studying the causes of juvenile delinquency, we are faced with numerous factors to be considered, variables to be controlled, and value judgments to be made. No one study can ever cover all facets contributing to a complete analysis of behavior development and change, but each step forward brings us closer to an

understanding of youth and its striving for survival in the modern world.

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APPENDIX

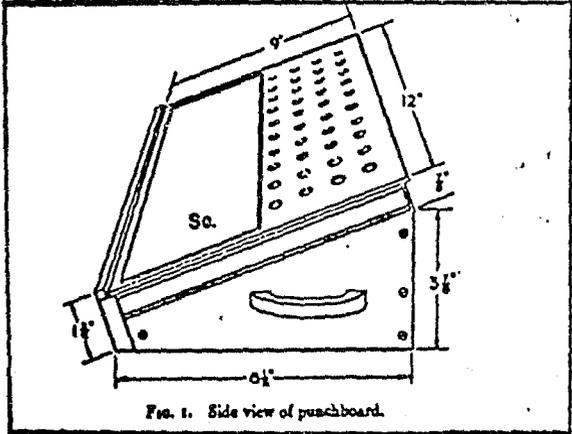
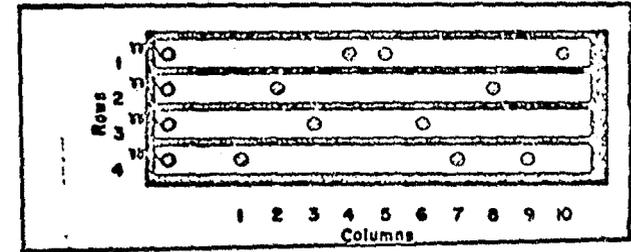


FIG. 1. Side view of pushboard.

Figure 1
Side view of Maze

Phase I



Phase II

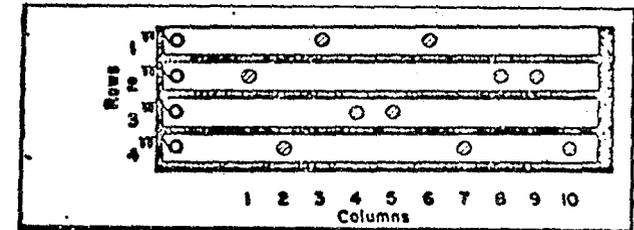


Figure 2

Correct response patterns for the Maze

PENETRATION OF CAMOUFLAGE

This is a test of your ability to detect camouflaged figures.

The picture on the opposite page shows a soldier kneeling in the jungle. There are many roughly finished faces blending into the lines and shaded areas of the picture. Your task will be to find these faces.

Note that the borders of the picture are spaced off into five sections. The left and right borders are numbered and correspond to the item numbers on your answer sheet. The top and bottom borders are lettered and correspond to the letters on your answer sheet. The faces in items 1 and 2 have been encircled to show you where the faces in these items are hidden.

In item No. 1 there are faces in sections A and B. Blacken spaces A and B after item No. 1 on your answer sheet now. In item No. 2 there are faces in section B, D, and E. Blacken spaces B, D, and E after item No. 2 on your answer sheet now.

You are to detect the concealed faces in pictures similar to this one. Each face will be within a particular section. No face will overlap from one section to another. Some of the faces will be front view and others profile. They may be placed sideways or upside-down. In order to penetrate the camouflage, you may turn the booklet in any direction.

Do NOT indicate on your answer sheet the obvious faces of the people in the pictures. LOOK ONLY FOR CAMOUFLAGED FACES.

Do NOT encircle the faces on your test booklet when you find them. Do not mark the booklet in any way. Now finish finding the faces in this first picture and record your answers on the answer sheet opposite item numbers 3, 4, and 5.

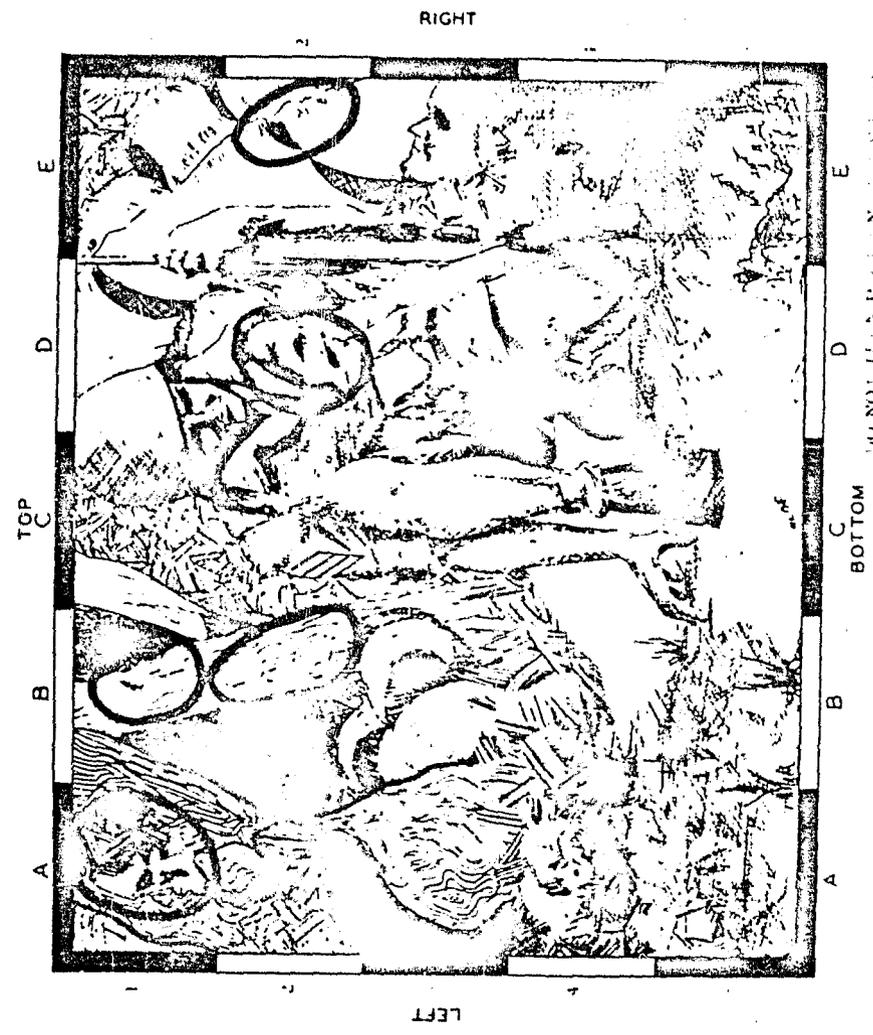
You should work as rapidly as possible as you will have only 2-1/2 minutes to find the faces in each picture. If you finish a picture before time is called, you should go on to the next one. When time is called, everyone MUST turn to the next page if he has not already done so.

There will be from one to five faces in each item, so the total number of faces in each picture may vary. Remember, you will have to turn the booklet around in order to find many of the faces.

Avoid wild guessing, since your score will be the number of right answers minus a fraction of the number wrong.

There are two pictures in Part I. Do NOT begin Part II until instructed.

MAKE NO MARKS ON THE TEST BOOKLET.



DO NOT USE IN PUBLICATION



PART I





PART II

16

17

11

14



END

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