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NURTURE AND SUCCORANCE AS INFLUENCED BY BIRTH ORDER AND STATUS: A TEST OF STOTLAND'S SOCIAL SCHEMA THEORY

By

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B. A. San Francisco State College, 1965

Presented in partial fulfillment of the requirements for the degree of

Master of Arts

UNIVERSITY OF MONTANA

1967

Approved by:

Chairman, Board of Examiners

Dean, Graduate School

Date: DEC 28 1967.
The purpose of this study is to test hypotheses, derived from Stotland's (1967) social schema theory, concerning effects of birth order on the social behavior of adults. Generally stated, this study predicts that individuals who are first-born children are more likely than later-born children to perceive social situation in terms of the dimensions of nurturance and succorance, to place themselves and/or other persons in the situation at some point on these dimensions, and to correlate the position of nurturance with high status, and succorance with low status. Nurturance is defined here, according to Murray's (1938) conceptualization of personality variables, as giving sympathy and gratifying the needs of others who are sick, weak, inexperienced, lonely, confused, by supporting, consoling, protecting, comforting, nursing. Succorance, according to Murray, is to have one's needs gratified, i.e., to be nursed, supported, protected, loved, guided, consoled, by the sympathetic aid of an allied object. Status, as it is defined in the present study, includes skill in performing relevant tasks, power to influence others, and group prestige. The review which follows will be concerned with (a) social schemas, (b) birth order, (c) status, and (d) nurturance and succorance.

Stotland's (1967) theory concerns persons acquiring
"social schemas" as a result of their perceptions of interpersonal relationships. Social schema is defined by Stotland as "a cognitive structure relating positions on two or more dimensions or aspects of a relationship between two or more people (p. 1)." For example, a child might observe that in a variety of situations adults have more power than children. He may then acquire a schema relating the end positions on the dimensions of age and power, i.e., if one person is older than another he has more power than the other. Then, in a social situation when the child attends to the dimension of power he will assign persons who are older than he to a high position on the dimensions of power, and himself to a lower position. Schemas are based on associations between positions on abstract dimensions, not on associations between contiguous pairs of physical stimuli. Stotland's basic assumption is that the social schema is general, i.e., "it refers to an association between positions on dimensions for people in general, not just for the particular people involved in the acquisition of the schema (p. 4)." Some support for this was provided by Keuthe (1964), who demonstrated that individuals who employ a specific social schema in organizing behavior in one situation will use the same schema in very different situations when they are responding to social stimuli of the same abstract content, even though the physical form of the stimuli is changed.
Social schemas are acquired perceptually, according to Stotland. A person may simply observe that A and B appear together consistently and acquire a cognitive structure relating A to B. The performance of overt responses during the acquisition process is not necessary, i.e., a person may acquire a social schema relating A to B purely from observation, and this schema may then directly influence his subsequent behavior. The occurrence of imitative behavior, where an individual observes a complex sequence of events without actually participating, and then later reproduces the sequence on his first attempt, has been demonstrated by Bandura (1962). The view of a perceptual basis of the acquisition of social schemas does not necessarily require the theoretical position that learning of this type is based on contiguity of sensory events without direct influence from reinforcement variables, as Bandura suggests. The learning of social schemas may be intrinsically rewarding to the individual. According to Keuthe (1964) social schemas are aroused by the need to cope with social stimuli, and provide a frame of reference for the individual when he enters social situations. Heider (1958) presents the view that persons attempt to cope with the complexity of their environment by ordering and classifying the stimuli confronting them into a consistent network of concepts. This system of interlocking concepts, or schemas, provides the individual with specific ideas about possible
conditions in his environment, and possible effects of various changes. Knowledge of these conditions allows the individual to influence parts of his world in purposeful action, and knowledge of the effects makes cognition and expectation possible. The individual's system of schemas provides a basis for the integration of a bewildering mass of data into hierarchies of meanings and evaluations, and thus permits the individual to internalize and master the general features of his environment. Within Heider's framework, then, the learning of social schemas could be intrinsically rewarding to the individual in his motivation to adapt better to a complex environment; by providing a general integrative frame of reference for the individual in social situations; by representing the cognitions which underlie the individual's interpretations of other's behavior; and by increasing the individual's ability to predict relationships in his environment.

Since it is assumed, with some empirical support, that social schemas are acquired perceptually, factors influencing an individual's perception of the dimensions of social relationships determine the learning of specific social schemas. According to Stotland important factors are: 1) physical possibility, i.e., that the dimension is present and capable of being perceived; 2) motivation, i.e., one is most likely to attend to the dimensions of experience which are relevant to one's motives; 3) learning,
e.g., one may be instructed to attend to certain aspects of relationships by important persons, one's language may imply the existence of certain aspects of relationships to which one learns to attend, or certain dimensions may have occurred on many previous occasions. Bandura (1965) reviews a variety of studies which provide support for the influence of motivational and reinforcement variables on the performance of previously learned responses, and suggests that such variables may indirectly influence response acquisition by influencing which dimensions will be attended to. Stotland assumes that the habit strength of an acquired schema is a "function of the number of occasions in which an individual has perceived situations in terms of the dimensions of the schema, and the proportion of these times that the positions of people on these dimensions were correlated in the way indicated by the schema (p. 6)." Thus, as a consequence of the dimensions attended to and the relative positions which are correlated on those dimensions, the individual acquires a cognitive structure regarding the associations between the positions on those various dimensions, i.e., he acquires a social schema.

According to Stotland social schemas influence behavior in the following ways: 1) a person will tend to perceive a given situation in terms of the dimensions of his strongest schemas relevant to that situation, and place himself and/or other persons in that situation in positions
on those dimensions. Stotland predicts that individuals who are first-born children are more likely than later-born children to contain the dimensions of nurturance and succorance in their social schemas. There is some supportive evidence in regard to one end of these dimensions, i.e., that the first-born child is more likely than the later-born to perceive himself as succorant and others as nurturant when experiencing anxiety. Sarnoff and Zimbardo (1961) and Schachter (1959) found that first-born subjects preferred to await an impending unpleasant experience with others rather than alone, whereas later-born females did not show this differential preference and later-born males showed a strong negative relationship between anxiety and affiliation. Wrightsman (1960) found that both male and female first-born subjects experienced a greater reduction in anxiety while awaiting a painful experience with others than when they waited alone, even when verbal communication was not allowed. For later-born subjects the change in anxiety did not differ from one condition to another, and thus being with others does not appear to have reduced anxiety for this group. Dohrenwend and Dohrenwend (1966) provide data indicating that when individuals are exposed to stressful situations the first-born manifests more psychological disturbance when social isolation is enforced and the later-born when social interaction is enforced. It appears, then, that first-born individuals, when experiencing
anxiety, are more likely to perceive themselves as succorant and seek others whom they perceive as nurturant, thereby reducing their anxiety. Other people do not appear to be perceived as nurturant to later-born individuals, at least under stressful conditions. These results were interpreted by Stotland to mean that later-born individuals are less likely than first-born individuals to perceive situations in terms of the dimensions of nurturance and succorance.

Additional evidence in regard to the other end of the dimension, that is, first-born individuals perceiving themselves as nurturant, derives from a study investigating vocational preferences of first-born and later-born subjects (Sutton-Smith, Roberts, & Rosenberg, 1964). On the Strong Vocational Interest Blank the parental surrogate role of teacher was preferred by more first-born subjects of both sexes. They also found that first-born women tended to prefer the jobs of physician, dentist, nurse, dietitian, and physical therapist, and first-born males tended to prefer the jobs of psychologist and public administrator. Siess and Jackson (1967) investigated the common variance between the Personality Research Form (PRF) (Jackson, 1967) and the Strong Vocational Interest Blank (SVIB). They report that virtually all SVIB scales reflecting social service share variance with the PRF Nurturance Scale. Specifically the highest correlations with the Nurturance Scale include Public Administrator, Clinical Psychologist, Teacher and Doctor Scales.
These findings demonstrate the commonly nurturant aspect of the vocations preferred by first-born subjects, and lends support to the hypothesis that first-born individuals are more likely to perceive themselves as nurturant than later-born individuals.

2) After perceiving a situation in terms of a given dimension and assigning persons to positions on that dimension, the individual will tend to perceive the behavior of those persons which is relevant to that dimension as being consistent with their previously assigned position. For example, after assigning a nurturant role to a particular person, the individual will tend to perceive almost anything that person does to another, within limits of reality, as helpful. Distorting embeddedness in social perception has been demonstrated in such phenomena as the halo effect, prestige suggestion (Sherif, 1937), believing an act to be good when performed by a friend and bad when performed by someone disliked (Heider, 1958), and may be interpreted as indirect support for this assumption.

3) After having perceived a situation in terms of one of the dimensions of a schema and assigning persons to positions on that dimension, an individual will tend to place those persons in positions on other dimensions of the schema that are associated with their position on the first dimension perceived. According to Stotland the positions of high status and nurturance, and low status and succorance,
are positively associated in the social schemas of first-born individuals. Schachter (1959) cites data demonstrating that first-born subjects are more likely to accept psychotherapy offered to them, and are likely to prolong therapy longer than later-born subjects. In a psychotherapeutic relationship the therapist is of higher status than his patient and is the nurturant one in the relationship. These results were interpreted by Stotland to mean that first-born subjects expected more nurturance from their therapist who occupied a high status position, and also perceived themselves as more needful of the therapist's nurturance. Schachter (1959) gave subjects increasingly painful electric shocks with instructions to ask the experimenter to stop when the shock became painful. First-born subjects were significantly more prone to ask the experimenter to stop than later-born subjects. Stotland interprets these results to mean that first-born individuals, when in pain, are more likely to perceive a high status person as nurturant and to perceive themselves, in the low status position, as succorant.

4) Since a person's social schemas determine his perception of a situation, and since his perceptions guide his overt behavior, his social schemas influence his overt behavior. Keuthe (1964) provides considerable support for this assumption by his demonstration of the pervasive influence of social schemata on both the verbal and non-verbal
behavior of individuals. Subjects who had developed the social schema "man-woman," responded to a variety of tasks in terms of that schema. The first task required that subjects spontaneously place felt figures onto a flannel screen. Those subjects who placed man and woman figures together on this task also made the error of placing man and woman figures too close together when required to reconstruct a social display viewed for a short time. The same subjects gave "man and woman" as reciprocal verbal associations. Persons who did not show one manifestation of the schema tended not to show other manifestations.

According to Stotland first-born individuals are more likely to perceive that a person high on the dimension of status is to be obeyed. Staples and Walters (1961) found that first-born females responded more rapidly than later-born females to an E’s suggestion that the light in an auto-kinetic situation would move; they were also generally more suggestible under conditions of anxiety (threat of shock) than were later-born females. In a number of recent studies (Armilla, 1966; Capra & Dittes, 1962; Dohrenwend, et al., 1967; Suedfeld, 1964) first-born individuals have been shown to volunteer for psychological experiments significantly more often than later-born individuals. In Capra and Dittes' study, participation in a group experiment was offered to freshmen by a senior student in a face-to-face situation. They interpreted their results to support a
greater affiliative need in first-born individuals. Wolfe and Weiss (1965) found, however, that when high status pressure to volunteer was reduced, first-born subjects did not differ from later-born in preference for a group study as opposed to a one-to-one or isolation study. When pressure to volunteer was increased, first-born subjects chose the group study more frequently than later-born subjects. These results were interpreted to mean that first-born individuals acquiesce to high status pressure more frequently than later-born individuals, and that they react to such pressure with anxiety and thus choose group participation as a means of reducing their anxiety. These results are supported by Dohrenwend, et al. (1967) who found that first-born individuals volunteered for all types of experiments more frequently than later-born individuals, but when the pressure to participate was not high and anxiety was aroused, first-born subjects were more likely to avoid a socially isolating experiment. It appears, thus, that first-born individuals are more likely to respond to high status pressure and to associate the position of high status with nurturance. They are also more likely to perceive themselves in a low status position as succorant and seek others whom they perceive as nurturant.

In summary, there is supportive evidence for each of Stotland's four predictions regarding the influence of social schemas on adult social behavior: 1) the individual
tends to perceive situations in terms of the dimensions of his strongest relevant schemas, and to assign persons to positions on those dimensions; 2) he then will tend to perceive behavior of those persons which is relevant to those dimensions as being consistent with the position they were originally assigned; 3) he will tend to place those persons in correlated positions on other dimensions of his schema; and 4) the individual's social schemas will influence his overt behavior.

Following Schachter's (1959) classic work many investigators have found that birth order is significantly related to adult social behavior. Position in the family at birth results in gross differences in the social relationships available to perceive, and therefore is very influential in determining the specific social schemas an individual is likely to acquire. Consequently birth order appears to be a significant and useful variable with which to begin investigating social schema theory. Although there are many other factors which influence the social experiences of the child, e.g., age gap between siblings, or presence or absence of both parents, the effects of birth order appear to account for enough of the variance in a number of recent studies, for example Suedfeld (1964), Capra and Dittes (1962), Dohrenwend, et al. (1967), to make it worthwhile to investigate this factor further. Another reason for studying birth order is that it is very amenable
to scientific investigation. Birth order is a relatively "clean" variable, free from many of the problems that plague researchers attempting to relate organismic variables to overt behavior, e.g., response set, item selection and bias, distortion of childhood experiences by adults, etc.

The first-born child has only interpersonal relations with his parents available for him to perceive in his early social development. Hence the first-born is continually confronted with differences between himself and the persons to whom he is relating. The hierarchical aspect of his relationship to his parents, e.g., differences between them in power and status, is one which pervades almost all areas of his life. As a consequence, the first-born child almost inevitably attends to this dimension when he perceives social situations. To avoid confusion the general term "status" will be used to refer to dimensions of hierarchy, denoting relative rank among persons on such aspects of interpersonal relations as power, authority, prestige, and resources relevant to the particular situation. When another sibling arrives the oldest tends to perceive his relationship with him in terms of schemas developed as an only child. The greater age of the first-born as well as other factors, e.g., a common tendency of parents to give more responsibility to the oldest one, a greater amount of attention to them (Lasko, 1954), greater mobility and physical skill, etc., leads the first-born toward a stronger
identification with his parents (Sears, et al., 1957) and a readiness to assume the parent-surrogate role (Sutton-Smith, et al., 1964). The first-born, then, is likely to perceive himself as high on the dimensions of his schemas in relating to his sibling who is assigned the low position. Therefore the oldest perceives his relations with his siblings, as well as his relations with his parents, in hierarchical terms. Evidence cited previously (Staples & Walters, 1961; Capra & Dittes, 1962; Suedfeld, 1964; Dohrenwend, et al., 1967; Wolfe & Weiss, 1965) provides support for the hypothesis that first-born individuals are more likely to perceive situations in terms of status hierarchies in that they respond more readily than later-born individuals to requests from persons of high status.

In contrast, the later-born child has siblings in addition to parents with whom he relates from the beginning of his social development. Consequently, differences between himself and those to whom he is relating are not so consistent. The later-born perceives that he is more similar to his siblings than to his parents, e.g., in his interaction with his siblings there is little difference to attend to in regard to status, he shares with his siblings the same general type of interests, chores, etc. The greater complexity and variety of the later-born child's schemas with respect to dimensions of hierarchy and the pressure to attend to dimensions of similarity as well as dimensions
of difference, are likely to lead the later-born child toward acquisition of many social schemas based on similarity. For example, later-born individuals are likely to perceive that persons who are similar to themselves in one respect are similar in other respects as well. Stotland and Dunn (1962) required subjects to work on a task and told them that another non-present person had worked on the same task. Other subjects were told that the other person had worked on a different task. The subjects were given information regarding the other person's clerical ability, and then each subject took a test of clerical ability. Later-born subjects tended to perform and evaluate their performance in line with the other person's ostensible level of ability, provided that they believed he had worked on the same task. Later-born subjects who had been told they had worked on a different task did not show this tendency to acquire the traits of the other person. First-born subjects showed significantly less of this difference between conditions. The initial similarity of working on the same task enhanced the tendency of later-born subjects to perceive themselves as similar in other respects as well. This study and similar studies (Stotland & Dunn, 1963; Stotland, Shaver, & Crawford, in press) provide support for the hypothesis that later-born individuals generalize similarity between themselves and other persons more readily than first-born individuals. While the later-born child will acquire some of
schemas the first-born acquires in relation to his parents, the hierarchial schemas of later-born children would be expected to be more complex because of the compounding of dimensions. Parental control becomes less effective as families grow beyond one child, as siblings form coalitions against parents and provide emotional support for one another in conflict with the parents (Baldwin, 1947; Lasko, 1954), and responsibility training receives less emphasis for later-born children (Sears et al., 1957). Consequently the hierarchical schemas later-born individuals develop are likely to have a weaker association between the positions on the ends of the dimensions, e.g., low in status and high in obedience, high in status and high in power.

In the present study part of the experimental manipulation involves inducing self-perceptions of high status among one group of subjects and self-perceptions of low status among another group of subjects. Hence it is important to consider data relevant to this manipulation. A person's perception of his own status is dependent upon the relative position in which he perceives himself on a variety of dimensions including, according to Berkowitz and Macaulay (1961), perceived skill in performing relevant tasks, power to influence others, and group prestige. Levinger (1959) demonstrated that an individual's perception of the magnitude of his social power, i.e., his potential for influencing others, is positively associated with the favorableness of
the initial information that he perceives regarding his relative resource potential in the group. Relative resource potential is defined as those properties of the individual that others perceive as relevant to their goalward locomotion. Croner and Willis (1961) induced high and low perceived competence in their paired subjects by giving them information regarding their ostensible performance on a previous task; one member received very positive information, while the other was told his performance was one of the lowest scores possible. The pair then participated in a task which was perceived to be very similar to the first task. Subjects who had low perceived competence imitated their partner's performance on the subsequent task to a considerably greater degree than conversely. Croner and Willis conclude that perceived task competence is an important determinant of amount and direction of social influence. Thus, by giving subjects either very positive or very negative information regarding their performance on a task allegedly measuring resources relevant to a second task, the first dimension of status, perceived skill in performing relevant tasks, is likely to be induced. This manipulation should also be effective in regard to the second dimension—power. Hoffman (1965) found that telling subjects that they are "leader" results in greater attempts to direct and organize their group's activity. "The appellation 'leader' seems to legitimize the high volume of attempted
direction giving (Hoffman, 1965, p. 109), "even though the subjects are without any real power. Hoffman found that when the power to reward and punish others was added to the title of "leader," these subjects became even more dominant in the group's activities. Hence, the status dimension of power is likely to be induced when subjects are asked for their opinions and suggestions, and when they are informed that their performance will be very influential in effecting procedures designed to train others in important capacities, and by asking them for their opinions, the status dimension of power should be induced. In regard to the third dimension of status—group prestige, Levinger (1959) found that the extent to which others accept the subject's resources as valuable was positively associated with the subject's perception of the magnitude of his power. Zander and Cohen (1955) found that subjects who were reacted to as if they had high status, i.e., in a deferentially, solicitously, attentive manner, reported greater satisfaction with their interaction than subjects who were reacted to as low status members. Other methods of inducing feelings of prestige, such as fictitious sociometric ratings and alleged votes of members for group leader have been reported (Berkowitz and Macauley, 1961; Kelley and Shapiro, 1954). Hence, the procedure of informing subjects that they are highly valued, asking them for suggestions, and generally responding to them as high status persons, is likely to induce feelings
feelings of high prestige. Also, informing subjects that their performance is important only in providing a comparison with another, more important group and generally responding to them as low status persons is likely to induce the status dimension of low prestige.

Other dimensions hypothesized by Stotland to be more involved in the social schemas of first-born individuals are nurturance and succorance. Studies of parental treatment of different siblings (Gesell & Ilg, 1942; Sears, Maccoby, & Levin, 1957) indicate that the first child typically receives more attention and nurturance from his parents than do his later siblings, as well as higher achievement and responsibility training (Rosen, 1961; Sampson, 1961). The first-born also has more experience at playing a parent-surrogate role (Sutton-Smith, et al., 1964) and he identifies with his parents to a greater extent than his later-born siblings (Sears, et al., 1957). This data lends support to the idea that first-born children are subjected to socialization procedures which differentially emphasize the nurturant and succorant aspects of interpersonal relations. Evidence previously cited (Schachter, 1959; Dohrenwend, et al., 1967; Dohrenwend & Dohrenwend, 1966; Wrightsman, 1960; Sarnoff & Zimbardo, 1961; Sutton-Smith, et al., 1964) also adds support to the hypothesis that individuals who are the first-born child are more likely than later-born children to attend to the dimensions of nurturance and succorance in
their perception of social situations.

In regard to Stotland's assumption that persons tend to associate positions on one dimension with positions on other dimensions in developing social schemas, he hypothesizes that the first-born, consistently perceiving his parents high on the dimensions of both nurturance and status, and himself as succorant and low in status, will develop a social schema positively relating high status and nurturance, and low status and succorance. Because of the compounding of the hierarchical dimensions of the later-born discussed previously, he is likely to have a weaker association between the dimensions of status and nurturance than the first-born. Evidence cited previously (Schachter, 1959) regarding the increased likelihood of first-born subjects to accept and prolong psychotherapy as opposed to later-born subjects, and the results demonstrating that first-born subjects, when in pain, are more likely to perceive a high status person as nurturant and request that he stop the pain, lend support indirectly to the prediction that first-born individuals have a stronger association in their social schemas between nurturance and high status.

The theory and evidence discussed up to this point lead to the following specific predictions: 1) First-born Ss will score significantly higher than later-born Ss on both the nurturance and succorance scales of a standardized personality inventory when there is no manipulation to
induce status (standard condition). 2) When put in a position of high status first-born Ss will score significantly higher on the nurturance scale and significantly lower on the succorance scale of the personality inventory than will first-born Ss under standard conditions. 3) When put in a position of low status first-born Ss will score significantly higher on the succorance scale and significantly lower on the nurturance scale of the personality inventory than will first-born Ss under standard conditions. 4) There will be a significantly greater effect on the nurturance and succorance scales of first-born Ss as a result of the status conditions than on later-born Ss; the differential status effect will be in the direction of higher nurturance scores under high status and higher succorance scores under low status for first-born Ss, whereas there will be no significant effect on either the nurturance or the succorance scores as a result of the various status conditions for later-born Ss.

Method

Subjects

One hundred and twenty Ss, 60 male and 60 female, ranging in age from 18 to 62 years (median age 20 years), were recruited from students attending summer session classes at the University of Montana. Occupationally, 38% of the Ss were teachers, 3% were employed in various other
vocations, and the remaining 59% were full-time students. The educational standing of the Ss ranged from the freshman year in college to the fourth year in graduate school. The first testing session involved the administration of a pretest during a regular class meeting. Students were required to draw four lines varying in length on five pieces of paper and rank the order of their preference for the five arrangements (see Appendix A for instructions). No further explanation was given to the class at this time. An identification sheet accompanied the testing materials on which students were asked to report the following information: name, address, telephone number, age, number of siblings and their ages, and their occupation. Students who had a twin were eliminated from the experiment and the remaining students were separated into groups according to their birth order and their sex, and were randomly assigned to one of the three conditions, i.e., high status, low status, or standard condition. The following day a list was posted designating the various rooms to which the students were to report according to the condition they were assigned. From the students who completed the experiment 120 Ss were selected so that six groups of 20 Ss (10 male and 10 female) were obtained for this experiment: 1) first-born low status, 2) later-born low status, 3) first-born standard, 4) later-born standard, 5) first-born high status, 6) later-born high status.
Measurement techniques

The Personality Research Form (PRF) (Jackson, 1967) was used to assess the dimensions of nurturance and succorance. The scales on the PRF are based on Murray's (1938) definitions of personality variables, so the description of high scorers on the Nurturance and Succorance Scales is congruent with the definitions used in the present investigation. Since the PRF is a very new instrument and is not generally known, a detailed description of the test is provided in Appendix B.

In order to induce self-perceptions of high status the Ss in this condition were given the following information at the beginning of the second session, prior to the administration of the PRF:

The University of Western Ontario has contracted with five American universities, including the University of Montana, to aid in a research project investigating the personality correlates of effective leadership. Each of you has been selected for the high potential leadership group on the basis of your very high performance on the Means Measure of Spontaneous Change, or the MMSC, the test which you took in class yesterday. Although it may have seemed innocuous and left you feeling somewhat bewildered, this short test has proven to be an extremely valuable instrument in psychological research. This is partly because of its ease of administration and the lack of content validity—subjects seldom, if ever, know what they are being measured for. In this respect motivational variables have been shown to be very important. That is, your motivation to perform in the face of ambiguity has proven to be an important predictor of your leadership capacity. The MMSC is also highly correlated with measures of flexible thinking, the ability to make independent judgments, and with some
measures of creativity. Of prime importance, however, is that the MMSC is very effective in predicting which individuals have high potential leadership capacities.

Our purpose today is to further investigate personality correlates of individuals who have demonstrated a high potential for effective leadership. Each of you in this group scored at or above the 85th percentile on the MMSC—your scores on the personality form that you will fill out today, as well as the top 15% of the students from the other universities will be compared with persons in your class and elsewhere who scored in the bottom 15%. The comparative data that you will provide will aid in determining personality characteristics that are correlated with leadership capacities. The eventual aim of this investigation is to develop educational procedures to train children in leadership skills. Thus, your participation today is of utmost importance—the success of this investigation will depend largely upon your motivation to respond honestly and accurately.

The PRF was then distributed to the Ss, the standard instructions for administration were read, and the following statement was made:

Before you begin I would like to thank each of you for your help and participation today. Your performance will be of utmost importance in promoting the development and training of effective leadership skills. Any comments or suggestions that you might have pertaining in any way to your reactions to this study would be very much appreciated, and may be written on the sheet included with your testing materials. Thank you very much.

In order to induce self-perceptions of low status the Ss in that condition were given the following information at the beginning of the second session, prior to the administration of the PRF:

This study is one of a series designed to investigate the development of qualities that
pertain to effective leadership. Your assignment to this group was on the basis of your very low performance on the Means Measure of Spontaneous Change, or the MMSC, the test which you took in class yesterday. Although perhaps many of you in this group, in your confusion as to the purpose of the test, did not perform as perhaps you are capable, your scores were within the bottom 15% of student norms. The MMSC has proven to be a very valuable instrument in psychological research, partly because of the ease of administration of the test and its lack of content validity—subjects seldom know what they are being measured for—and in this respect motivational variables have been shown to be very important. That is, your motivation to perform in the face of ambiguity is an important predictor of your leadership capacity. The MMSC is also highly correlated with measures of flexible thinking, the ability to make independent judgments, and it also correlates with some measures of creativity. Of prime importance, however, is that the MMSC has proven to be extremely effective in predicting which individuals have high potential leadership capacities, and which individuals are most unlikely to have leadership skills.

Our purpose today is to further investigate personality correlates of individuals who have demonstrated a high potential for effective leadership, by comparing their scores on a personality form with your scores and with students in other universities who also scored in the bottom 15% on the MMSC.

The PRF was then administered to the Ss.

Procedure

Naive Es administered the PRF to the high and low status groups under the conditions previously described, and to the standard group in accord with standard conditions described in the PRF manual (Jackson, 1967). Accompanying the testing materials, for all groups, was a sheet of paper on which the Ss were asked to write any comments or
suggestions they might have pertaining to the study. After completing the PRF, all Ss were given a questionnaire designed to determine the effectiveness of the instructions in inducing self-perceptions of high and low status. The post-session questionnaire (see Appendix C) consisted of a rating scale investigating the Ss' reactions to their participation in the experiment and a subjective general status rating scale (Hyman, 1942). The following day the instructor told the class that they had been randomly selected for the high and low leadership groups, and that the instructions they had received were necessary for the purposes of the experiment. Approximately two weeks later all the Ss who completed the study were sent an explanation of the experiment, including the reasons for deluding them.

Results

The results of the PRF were analyzed using analyses of variance applied to a two (first-born and later-born) by three (low status, standard, and high status) factorial design. The results of the analyses are presented in Table 1. The interaction effect provided the test of the fourth hypothesis, and the specific comparisons predicted in the first three hypotheses were tested using Duncan's multiple range test (Edwards, 1964). In the following, the data relevant to each hypothesis will be considered separately.
TABLE 1

Analysis of Variance: PRF Scores

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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>5</td>
<td>25.12</td>
<td>2.702*</td>
</tr>
<tr>
<td>Status (A)</td>
<td>2</td>
<td>34.225</td>
<td>3.683*</td>
</tr>
<tr>
<td>Birth order (B)</td>
<td>1</td>
<td>12.032</td>
<td>1.295</td>
</tr>
<tr>
<td>A x B</td>
<td>2</td>
<td>22.559</td>
<td>2.428*</td>
</tr>
<tr>
<td><strong>Succorance Scores</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>5</td>
<td>47.388</td>
<td>2.942***</td>
</tr>
<tr>
<td>Status (A)</td>
<td>2</td>
<td>38.233</td>
<td>2.373*</td>
</tr>
<tr>
<td>Birth order (B)</td>
<td>1</td>
<td>0.008</td>
<td>0.03</td>
</tr>
<tr>
<td>A x B</td>
<td>2</td>
<td>80.033</td>
<td>4.969***</td>
</tr>
</tbody>
</table>

* p < .1
** p < .01
*** p < .025
Hypothesis 1. Under the standard condition the mean nurturance score for first-born Ss was 12.05, as compared with 13.15 for later-born Ss. The mean succorance score was 6.35 for first-born Ss and 8.6 for later-born Ss (see Figure 1). Thus, the first hypothesis, that first-born Ss would score significantly higher on both the Nurturance and Succorance Scales of the PRF under the standard condition was not supported.

Hypothesis 2. First-born Ss in the high status condition had a mean nurturance score of 15.15 as compared with 12.05 in the standard condition (see Figure 1), which is a significant difference (p < .01) between the two treatments. First-born Ss in the high status condition had a mean succorance score of 8 as compared with a mean of 6.35 in the standard condition. The second hypothesis, that when put in a position of high status first-born Ss would score higher on the Nurturance Scale and lower on the Succorance Scale than would first-born Ss under the standard condition, is supported in regard to the nurturance measure but is not supported in regard to the succorance measure.

Hypothesis 3. The difference, for first-born Ss, between the mean nurturance scores under the low status condition (14.55) and the mean nurturance score under the standard condition (12.05) is significant (p < .05); however it is in the opposite direction from the prediction. The difference for first-born Ss between the mean succorance scores
under the low status condition (11.05) and the mean succorance scores under the standard condition (6.35) is significant ($p < .01$) in the predicted direction. The third hypothesis, that when put in a position of low status first-born $S$s would score higher on the Succorance Scale and lower on the Nurturance Scale than would first-born $S$s under the standard condition, is supported in regard to the succorance measure, but is not supported in regard to the nurturance measure. First-born $S$s also scored significantly higher on the Nurturance Scale under low status conditions.

Hypothesis 4. The interaction between birth order and status ($A \times B$) approached statistical significance ($p < .10$) for the nurturance measure, and was highly significant ($p < .025$) for the succorance measure. The mean scores for first- and later-born $S$s under the three status conditions are presented in Figure 1. The effect of the status variable averaged over all groups ($A$ main effect) approached statistical significance ($p < .10$) for both the nurturance and succorance measures (see Table 1). The differential effects of the status conditions on first-born as opposed to later-born $S$s presented graphically in Figure 1, the lack of any significant differences between the status conditions for later-born $S$s and the presence of a number of significant differences between the status conditions for first-born $S$s, and the presence of a significant and near significant interaction effect provide sufficient evidence
Fig. 1. Mean nurturance and succorance scores for first- and later-born in high status, standard and low-status groups.
to interpret the near significant A main effect as attributable to first-born Ss and not to later-born Ss. These data provide strong support for the hypothesis that the high and low status conditions have a significantly greater effect on the nurturance and succorance scores of first-born than on later-born Ss.

In regard to the specific relationships predicted between the Nurturance and Succorance Scales and the status conditions for first-born as opposed to later-born, the data from the present investigation are less consistently supportive. A comparison of the high status versus the standard condition on the nurturance measure showed a greater change between the two conditions for first-born Ss (3.1 mean increase) than for later-born Ss (.55 mean increase). The direction of the difference between the groups was in accord with the prediction, i.e., higher nurturance scores were obtained under the high status condition for first-born Ss, whereas there was little difference between conditions for later-born Ss. A similar comparison on the succorance measure (high status versus standard condition) shows that the change in succorance scores for first-born Ss (1.65 mean increase) is somewhat higher than the change for later-born Ss (.05). The direction of the difference, however, was opposite from the prediction. It was predicted that the high status condition compared to the standard condition would obtain lower succorance scores for first-born Ss.
A comparison of the low status versus the standard condition on the nurturance measure yields a greater change between the two conditions for first-born Ss (2.5 mean decrease) than for later-born Ss (.15). This change, however, was also in the opposite direction from the prediction, i.e., higher nurturance scores were obtained under low status than under the standard condition for first-born Ss. A similar comparison on the succorance measure, low status versus standard condition, yields a greater change in the scores of first-born Ss (4.7 mean increase) than in the scores of later-born Ss (.8 mean decrease). The direction of this change was in the predicted direction, i.e., higher succorance scores were obtained for first-born Ss under low status conditions than under standard conditions, and there was little difference between the conditions for later-born Ss. These data, relevant to a test of the fourth hypothesis, provide strong support for a differential status effect on first-born as opposed to later-born Ss. The direction of the differential effects are, in two instances, supportive of those predicted, i.e., the positive relationships between high status and nurturance and between low status and succorance predicted for first-born Ss was supported. The predicted negative relationship between low status and nurturance, however, was found to be a significantly positive relationship for first-born Ss, and the prediction of a negative relationship between low status and nurturance was not supported by the
results of the present experiment.

Table 2 presents the mean data from the post-session questionnaire (see Appendix C) designed to measure the effectiveness of the experimental instructions in producing self-perceptions of high and low status. Although the differences between the low and high status groups for questions 1, 2, 4, 5, and the subjective status index, are in the predicted direction, the differences between the means are not significant. Questions 3, 6, and 9 were open-ended questions concerning the Ss' reactions to having participated in the experiment, to their placement in their group, and to further participation in this research project. Responses to these items were ranked either positive, neutral, or negative and the inter-rater reliability was highly significant ($p < .025$). The difference between groups, tested by $X^2$, is highly significant ($p < .01$) for each of these three questions. These results demonstrate that a significantly greater number of low status Ss and standard condition Ss had negative feelings; a significantly higher number of high status Ss reacted favorably to their placement in the high group, whereas a significantly higher number of low status Ss reacted negatively; the frequency of positive reactions toward further participation was significantly higher for high status Ss, whereas the frequency of negative reactions was significantly higher for both low status and standard condition Ss. Question 7 shows
# TABLE 2

Post-Session Questionnaire: Effectiveness of Status Instructions

<table>
<thead>
<tr>
<th>Experimental Condition</th>
<th>Mean Value of Responses to Rating Scale Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value of research</td>
</tr>
<tr>
<td>Low status</td>
<td>4.45</td>
</tr>
<tr>
<td>Standard</td>
<td>4.181</td>
</tr>
<tr>
<td>High status</td>
<td>5.162</td>
</tr>
</tbody>
</table>
TABLE 2 (continued)

Responses to Open-Ended Questions

<table>
<thead>
<tr>
<th></th>
<th>Reactions to participation in experiment</th>
<th>Reactions to group placement*</th>
<th>Preferences for group selection**</th>
<th>Reactions to further participation*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>Low Status</td>
<td>35%</td>
<td>26%</td>
<td>47%</td>
<td>10%</td>
</tr>
<tr>
<td>Standard</td>
<td>33%</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Status</td>
<td>11%</td>
<td>64%</td>
<td>4%</td>
<td>60%</td>
</tr>
</tbody>
</table>

Note.—Questions 5-8 are not relevant to the standard condition. The entire questionnaire is presented in Appendix C.

*p < .01

**p < .001
the percentage of Ss who preferred selection for the group they were in, and those who would have preferred selection to one of the other groups. The difference between the low and high status groups, tested by $X^2$, is highly significant ($p < .001$), demonstrating that a significantly larger number of Ss in the high status group preferred selection to that group, whereas a significantly higher number of Ss in the low status group would have preferred selection to either the average or the high leadership potential group. It is likely that questions 3, 6, 7, and 9 were more effective in demonstrating the differences between the groups because of their highly subjective nature as compared to the more objective scaled items 1, 2, 4, and 5. A more salient measure of a S's self-perceived status is derived from inquiries regarding his "feelings" about what has happened to him rather than from inquiries regarding his "opinions" about the research, the instrument, or the accuracy of his group placement. These results provide strong evidence for the effectiveness of the experimental instructions in producing self-perceptions of low and high status.

Discussion

Stotland proposes that the social schemas of first-born children are acquired primarily on the basis of the child's perception of his relationship with his parents. The pervasive status differences characteristic of the
parent-child model of social interaction are almost inevi-
tably attended to by the first-born child and are likely to
be a very important aspect of his interpersonal relations.
The later-born child is less consistently confronted with
status differences in the social relationships available
to him to perceive, and this aspect of interpersonal rela-
tions is likely to be a less salient dimension in his
social schemas. There is substantial evidence, from the
results of the present experiment, that status operates
differentially with respect to first- and later-born indi-
viduals. The over-all effect of the status variable (A main
effect in analyses of variance) in combination with the
lack of significant differences between the low status,
standard, and high status conditions for later-born Ss,
leaves the near significant status effect attributable al-
most solely to its effect on first-born Ss. These data
and an inspection of the interaction between status and
birth order, provide good evidence supporting the hypothesis
that the dimension of status is a more salient and pervasive
aspect of the social schemas of first-born than later-born
individuals. The probability associated with the A x B
interaction on the nurturance measure and the A main effect
on both the nurturance and succorance measures (p<.10) is
higher than the level of significance ordinarily accepted
by researchers. The present investigator felt that the
possible heuristic value of these findings for further
research in this area, surpassed the value of rigidly adhering to the .01 or .05 level of significance. These results indicate that the first-born child is likely to be more aware of and more attentive to the dimension of status in social situations, and the strength of this dimension in his social schemas is likely to manifest itself in many aspects of his adult social behavior.

The differential effect of the status conditions on the nurturance and succorance scores of first-born as opposed to later-born Ss, which was found in the present experiment, also provides support for Stotland's hypothesis that there is a stronger association between the dimensions of nurturance-succorance and status in the social schemas of first-born individuals than in the schemas of later-born individuals. In accord with the predictions of this study, first-born Ss demonstrated a strong positive relationship between nurturance and high status and between succorance and low status. There was not, however, a negative association between nurturance and low status or between succorance and high status. First-born low status Ss scored significantly higher on the Nurturance Scale than first-born Ss under standard conditions, and there was also a higher mean value obtained for high status first-born Ss than for standard first-born Ss on the Succorance Scale, although this difference was not significant. These results indicate that first-born individuals are likely to develop
a general association between the dimensions of nurturance-succorance and status without regard to the specific positions on the dimensions, i.e., both high and low positions on the dimension of status may be associated with both nurturant and succorant positions. There is, however, some evidence that the positive association between the positions of succorance and low status is a stronger relationship than the association between the positions of succorance and high status. First-born low status Ss did score significantly higher on the Succorance Scale than first-born high status Ss. These data indicate that first-born individuals are likely to have developed a stronger association between the dimensions of nurturance and succorance and status than later-born individuals, that the association between the dimensions may be generally positive, but that some associations between positions on these dimensions, e.g., succorance and low status, are likely to be more highly correlated than others. Further consideration will be given later to some of the present issues as they are related to other results obtained in this study.

Stotland hypothesizes that nurturance and succorance are also dimensions which are more likely to be involved in the social schemas of first-born than later-born individuals. The present study found that, under the standard condition, there was no significant difference between first- and later-born Ss in regard to nurturance and
succorance as measured by the PRF. Thus, these results fail to support the interpretation that either nurturance or succorance are more significant aspects in the social behavior of first-born individuals.

One possible explanation for these negative results might be that the dimensions of nurturance and succorance appear equal in the social schemas of first- and later-born individuals under neutral conditions, while the emotional arousal produced by the high and low status instruction in the present experiment increased the saliency of both dimensions for first-born, though not for later-born Ss. A number of investigators (Schachter, 1959; Dohrenwend, et al., 1966; Walters & Parke, 1959) provide support for a general relationship between emotional arousal, at least in the experience of anxiety, and avoidance of isolation for first-born Ss. It seems plausible, then, that inducing self-perceptions of low and high status produced a degree of emotional arousal in the Ss which first-born Ss reacted to by wishing to avoid isolation and seek the association of other people, and thus their nurturant and succorant scores increased. If this is the case one would also expect that scores on the PRF Affiliation Scale would be higher under both the high and low status conditions, as compared to the standard condition for first-born Ss. Other scales on the PRF would also be likely to be affected by this emotional arousal, and it would be plausible to expect
first-born Ss to manifest increased variability in their performance on the PRF. It would also be important to test the effect of other conditions of emotional arousal on PRF scales of first- and later-born individuals.

Another possible explanation for the negative results is that there may be a generally positive association between the dimensions of nurturance-succorance and status for first-born Ss as a consequence of early social learning, without regard to specific associations between low or high positions on those dimensions. Within the context of social schema theory, the first-born child relates to his younger sibling(s) in terms of the schemas he developed as an only child when he occupied the low position in the family with respect to the dimension of status and succorance. However, whereas he was low on these dimensions with respect to his parents, he is higher on these dimensions than his sibling(s). It is possible, then, that the oldest child, perceiving himself as both nurturant and succorant and high and low in status, would develop a general association between the dimensions of nurturance-succorance and status with respect to his own self description. If this is the case it would be expected that the associations between these dimensions for the child who remained the only child in the family would be less general than for the child who has younger siblings, in that the only child has little opportunity to occupy a position which is both nurturant and succorant and
both low and high in status. The oldest child who has siblings with whom to relate occupies both positions on these dimensions throughout his childhood. Since there were only four persons who had no siblings among the Ss in the present experiment, this hypothesis could not be tested.

Another alternative explanation for these findings could be derived from a closer examination of the standard condition. The post-session questionnaire provides evidence that the standard group reacted negatively to the experiment; the responses for this group were very little different from the responses of the low status group. This negativism could have occurred as a result of somewhat adverse testing conditions. The Ss in the standard group were given no explanation of the purpose of the experiment. The PRF and the questionnaire took most Ss a little over an hour, and thus they were required to spend longer than their regular class period. The test was administered on a hot summer afternoon, the day before final examinations. As a consequence of these testing conditions it may be that the standard group's scores did not provide a valid measure of the performance of first- and later-born Ss under neutral conditions. The normative data for the PRF (Jackson, 1967) provides a mean nurturance score of 14.07, whereas the mean nurturance score under the standard condition in the present experiment is 12.60. In light of the fact that a large percentage of the Ss in the present study were in the
teaching profession, it is surprising that their nurturance scores were lower than the general norms. The mean succorance score from the PRF normative data is 9.54 whereas the mean succorance score for the Ss in the present investigation was 7.48, again a lower value. Thus, it does appear likely that the Ss in the standard group were adversely affected by the testing conditions. In light of two studies comparing first- and later-born Ss' reactions to a negative experimenter (Glass, Horwitz, Firestone & Grinker, 1963; Sampson, 1962), it could be predicted that these adverse conditions would affect first-born Ss more than later-born Ss. They found that first-born Ss reacted more negatively and showed more resistance to influence from a negative experimenter. Other studies (Ehrlich, et al., 1957; Becker, 1962; Staples, 1961) have shown that first-born Ss complied more readily to social pressure than later-born Ss when the influencing agent was either neutral or positive. Stotland interprets these results to mean that if a status figure is negative first-born Ss will tend to reject him because he does not fit into the social schema of a nurturant parent. This interpretation is consistent with Stotland's hypothesis that when individuals confront situations in which their schemas are violated they will react with more tension, anxiety, and rage than they will to situations consistent with their schemas. Stotland (1967) cites evidence to support this hypothesis in regard
to various dimensions for both first- and later-born individuals. In line with this reasoning, first-born Ss might be likely to react more negatively than later-born Ss to an E requiring them to respond to a long, somewhat redundant personality inventory, in uncomfortable surroundings, with no explanation as to the purpose of their participation; the E (presumably a high status figure) would not fit into their schema of a nurturant parent. It is possible, then, that the nurturance and succorance scores of the first-born and later-born Ss in the standard group were differentially affected by the adverse testing conditions. An experiment in which varying degrees of positive and negative reactions were induced in the Ss would provide a means of testing this alternative explanation.

Summary

To test hypotheses derived from Stotland's social schema theory concerning relationships between birth order and nurturance and succorance as a function of status, 120 Ss (60 first-born and 60 later-born) were divided into three groups and given high status, low status, and neutral instructions prior to taking the PRF. The effectiveness of the status instructions was demonstrated through a post-test inventory.

It was predicted that: 1) under neutral conditions first-born Ss would score higher than later-born Ss on both
the Nurturance and Succorance Scales of the PRF; 2) first-born high status Ss would score higher on nurturance and lower on succorance than first-born Ss under neutral conditions; 3) first-born low status Ss would score higher on succorance and lower on nurturance than first-born Ss under neutral conditions; 4) the low and high status conditions would have a greater effect on the nurturance and succorance scores of first-born Ss than later-born Ss—high status would increase the nurturance scores and low status would increase the succorance scores more for first-born than for later-born Ss.

The results indicated that first-born appear more likely than later-born individuals to contain the dimension of status in their social schemas; however, there was no evidence to support the hypothesis that nurturance and succorance are also dimensions which are more involved in the schemas of first- than later-born individuals. First-born appear more likely than later-born individuals to associate the dimensions of nurturance-succorance and status, and they are likely to have a positive relationship between the positions of high status and nurturance and between low status and succorance. The predicted negative relationship between low status and nurturance was found to be positive, however, for first-born Ss, and the prediction of a negative relationship between high status and succorance was not supported.
Thus, while some aspects of Stotland's theory were supported, it appears possible that the emotional arousal produced by the high and low status instructions operated differentially to increase the nurturance and succorance scores for first-born Ss, but not for later-born Ss. Other possible explanations were offered, and suggestions for further research developed.
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Appendix A

"Means Measure of Spontaneous Change"

On each of the following 5 sheets of paper you are to arrange 
4 lines, like those printed at the bottom of the page, in any manner you like. What is important is that you like the ar-
angement—that it is interesting to you. Because of the necessary measurements that must be made it is important that you keep the length of your lines as close as possible to the printed lines. After completing your five arrangements, de-
cide which you like best and write the number of your prefer-
ences in the top right-hand corner of each page, i.e., your first preference will be #1, and the one you like the least will be #5.
Appendix B

The Personality Research Form (PRF) (Jackson, 1967) is an instrument designed for use in academic, professional, and industrial settings to measure broad personality traits relevant primarily to normal functioning, rather than to psychopathology. PRF norms are based on over two thousand college students from a variety of geographical regions. Form AA, which will be used in the present experiment, contains 440 items divided into twenty-two 20-item scales. A parallel form, BB, is also available, and two shorter parallel forms, A and B, which contain 15 of the 22 scales judged to be most important. The content scales contained in the short forms are: Achievement, Affiliation, Aggression, Autonomy, Dominance, Endurance, Exhibition, Harm-avoidance, Impulsivity, Nurturance, Order, Play, Social Recognition, and Understanding, and a validity scale, Infrequency. The long forms contain an additional six content scales: Abasement, Change, Cognitive Structure, Defendence, Sentience, Succorance, and one additional validity scale, Desirability.

The PRF represents a thorough application of new developments in the areas of personality theory, personality assessment, and scaling theory. Its conceptual
development followed procedures required for construct validity (Loevinger, 1957), with final validation requiring convergent and discriminant criteria (Campbell & Fiske, 1959). The construction of the PRF scales began with explicit, theoretically based definitions, largely from Murray's (1938) set of personality variables, which provided a basis for item writing and later for criterion behavior-rating studies. One important distinction between the PRF variables and those defined by Murray is that each PRF variable is explicitly bipolar, whereas, although Murray conceived of traits as varying from one extreme to another, his definitions were based upon one pole. Thus, earlier measurement of Murray's variables generally consisted of trait scores based on the sum of the relevant items which were all keyed in one direction. This led to confusion as to the meaning of low scores, i.e., whether they signified the absence of the trait or the presence of its opposite. The lack of explicit bipolar definitions also resulted in redundancy, using different traits to define opposite poles of essentially the same dimension. Therefore, in order to clarify what was being measured, to make low scores meaningful, and to increase the efficiency of the instrument, each PRF variable was conceived in bipolar terms, both theoretically and in terms of measurement. Thus, each scale contains ten items pertaining to one pole, and ten pertaining to the opposite
pole of the dimension.

A large pool of items, hypothesized to be conceptually linked to the traits being measured, was developed for the PRF. These items were administered to over a thousand students and biserial correlations were computed between each item and its total provisional scale, related scales, and a provisional desirability scale. Those items which had high correlations with the scale to which they belonged and low correlations with irrelevant scales, including desirability, were retained. Items having less than five percent or more than 95 percent endorsement were eliminated. A Differential Reliability Index (DRI) was computed for each item. The DRI is "the portion of the variance for a given item associated with the total scale score for a given trait, from which the variance shared by the item and a desirability scale has been subtracted (Jackson, 1967, p. 16)." The 40 items in each scale that ranked highest on the DRI were then selected.

A number of methods were used to reduce the role of response styles in the PRF. Clunis & Jackson (1966) demonstrated that acquiescence is minimized by the procedures employed to maximize content saturation in PRF scale development, i.e., the selection of items that ranked highest on the DRI. The inclusion of an equal number of true and false items was also used to suppress acquiescence. The selection of items having a low correlation with a desirability scale
and a high correlation with their own total scale suppresses desirability variance at the item level. A further effect of this procedure was to lower the correlations between the PRF scales by eliminating spurious correlations due to shared desirability variance, and as a consequence, the discriminatory capacity of the scales was increased. In addition, the Desirability Scale was constructed to permit evaluation of individuals who have responded predominantly in terms of desirability, rather than specific content, and to allow for statistical correction of the content scores to eliminate desirability variance. This correction is not recommended routinely because of the substantial reduction in desirability bias as a result of the item selection procedures. The Infrequency Scale identifies non-purposeful or random responding, or errors in scoring. A deviant infrequency score for reasons other than these is very rare even in psychopathological groups. The items, while neither bizarre, nor particularly undesirable, have an endorsement frequency of 1.5 percent.

The empirical evaluation of the reliability of the PRF has included estimates of homogeneity yielding a median reliability of .92 for the 20 content scales, and estimates of stability resulting in a range of reliability coefficients from .77 to .90 (Jackson, 1967). Assessments of freedom from response biases include: two studies which offer strong evidence for the substantial elimination of
acquiescence effects (Trott & Jackson, 1967; Jackson & Lay, 1967); data indicating that less than five percent of the total variance on PRF content scales is attributable to a desirability response set (Jackson, 1967); also, the relatively low intercorrelations of the scales provides evidence for their relative independence from a common desirability factor, and from each other. In regard to the purposes of the present study, the correlation between the Nurturance and Succorance scales for females is .25, and for males is .13. Evidence for convergent validity derives primarily from studies employing trait and behavior ratings of subjects by their peers (Jackson, 1967; Jackson & Guthrie, 1967; Kusyszyn, 1967); these studies demonstrate significant correlations of every PRF scale with independent criteria. Jackson & Guthrie (1967) used multimethod factor analysis (Jackson, 1966) to reduce possible artifacts of the method of measurement and to allow the resulting factors to be interpreted as due primarily to the correlation of traits across three different methods of measurement. Their results provide evidence for the convergent and discriminant validity of the PRF, i.e., each scale is correlated with independent criteria, and each scale is distinct and unique in its contribution to measurement.

In summary, the PRF represents a thorough application of recent developments in personality and scaling
theory and personality assessment. Validational procedures were incorporated throughout test construction. The empirical evaluation of the PRF provides substantial evidence for the reliability, the relative freedom from response biases, and the convergent and discriminant validity of the instrument. The PRF appears, therefore, to be an excellent measurement technique for the purposes of the present study to assess the personality variables of nurturance and succorance.
Appendix C

Post-session Questionnaire

1. Rate the value, in your opinion, of the type of psychological research in which you have participated today.

   : 1 : 2 : 3 : 4 : 5 : 6 : 7:
   of no value extremely valuable

2. Rate the PRF as a personality inventory, from the viewpoint of the respondent.

   : 1 : 2 : 3 : 4 : 5 : 6 : 7:
   extremely excellent poor

3. How do you feel about having participated in this study?

4. To what extent did you find this experiment to be interesting and enjoyable?

   : 1 : 2 : 3 : 4 : 5 : 6 : 7:
   dull and boring extremely interesting and enjoyable

5. Did you feel that your placement in your group was accurate?

   : 1 : 2 : 3 : 4 : 5 : 6 : 7:
   not in the least extremely accurate

6. How did you feel about your selection for the group you were in?
7. Would you have preferred to have been selected for another group? yes [ ] no [ ] If yes, which one: low (0-15%) average (15-85%) high (85-100%)

8. Did you feel that your group as a whole was accurately selected on the basis of your knowledge of other students in your class?

   not in the least [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7 [ ] extremely accurate

9. How would you feel about participating further in this research project?

10. In your opinion, what are the three most important personal characteristics of an effective leader?
Instructions for General Status
Rating Scale

We are interested in your opinion about your own "general status" relative to all of the persons with whom you have contact (not just your immediate peers). General status refers to any standard or combination of standards (e.g., cultural, economic, intellectual, social, etc.) that you think enter into general standing. In other words, we are interested in your evaluation of your general position in relation to others according to whatever dimensions you think are important to general status.

Now, suppose you were fairly certain that 50% of all the people with whom you have contact were lower than you in general status, you would make a mark on the left-hand column of the scale, marked "lower" next to the 50%. On the right-hand column you are to judge the percent of persons you are fairly certain are higher than you in general status. You might not necessarily say 50% because you might think that some people have the same standing as you. You may make the marks anywhere along the line—-they do not have to be next to the numbers. The two marks cannot possibly add up to as much as 100% since there are only 100% of people, but they do not have to add up to as much as 100%.

Thus, you should make your judgment of your general status by making a mark on the left-hand column marked
"lower" indicating what percent of the people, with whom you have contact, you are fairly certain are lower than you in general standing and a mark on the right-hand column indicating what percent you are fairly certain are higher than you.
General Status Rating Scale

<table>
<thead>
<tr>
<th>LOWER (All of the people with whom you have contact)</th>
<th>HIGHER (None of the people with whom you have contact)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>90%</td>
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<td>80%</td>
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<tr>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>

General status: refers to your general position in relation to others according to whatever standard or combination of standards you think enter in to general standing.

In your understanding, very briefly, what was the purpose of this experiment?