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Creativity, sex-role preference, and perception of parents in fifth-grade boys.

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CREATIVITY, SEX-ROLE PREFERENCE, AND PERCEPTION OF PARENTS IN FIFTH-GRADE BOYS

A Dissertation Presented

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ABSTRACT

The present study investigated various relationships among creativity, sex-role preference, and parental child-rearing behavior. Ss were 70 fifth-grade boys from a western Massachusetts public school system.

Creativity was assessed by an adaptation of the Wallach and Kogan verbal creativity tasks, sex-role preference by the Rosenberg and Sutton-Smith Play and Game List, and parental child-rearing behavior by the Schaefer Parent Perception Scales. Other variables included I.Q., anxiety, test anxiety, and defensiveness. In addition, various measures were derived post hoc from the data.

It was hypothesized that a person high in masculinity of interests and femininity of interests would have more potential associative elements in his response repertoire than would a person high in masculine interests and low in feminine interests, or a person low in masculine interests and high in feminine interests, or a person low in both. Thus, the high masculine - high feminine individual would be predisposed to producing creative responses. On the basis of MacKinnon's (1962) work, it was hypothesized that low masculine - high feminine preference males would have more associations available for producing

creative responses than would high masculine - low feminine preference males. The latter group might be employing a considerable amount of repression and would approach stimulus situations in a highly stereotyped manner. However, results of the investigation revealed no significant patterns of relationship between sex-role preference and creativity.

It was hypothesized that parents of high creative Ss would be warm, accepting, and positively involved with the child. Various hypothesis were formulated with regard to sex-role preference patterns and parental behavior. It was felt that boys high in both masculinity and femininity would have parents who were warm, accepting, and positively involved, while parents of boys low in both masculinity and femininity would have parents who were rejecting and hostile. It was speculated that fathers of high masculine - low feminine boys would be warm, positively involved, and controlling, and that mothers would be warm. Fathers of low masculine - high feminine boys would be noted for rejection and hostile detachment and mothers would be noted for possessiveness, control, intrusiveness, and control through guilt. The relationships hypothesized between parental behavior and sex role, and between parental behavior and creativity, were not supported by the results of the investigation.

It was found that father nurturance apparently facilitates development of masculine interests. The role of the mother did not appear important in this regard, at least when both parents

were present in the home situation. As predicted, no relationship was found between creativity and intelligence. It was found, however, that an extremely nurturant mother or an extremely negative mother may hinder her son's intellectual development. Several significant results were found with reference to anxiety, test anxiety, and defensiveness. The most notable finding was that Ss high in creativity were low in test anxiety.

Although the Ss' scores on the masculinity measure seemed to correspond fairly well with normative data, scores on the femininity measure were far below the norms. It was speculated that the obvious nature of the preference measure may have made the boys defensive about acknowledging feminine interests. It was suggested that future investigations employ more than one measure of sex-role preference. In addition, it seemed advisable to include measures of sex-role orientation and sex-role adoption, as well as sex-role preference, in future studies.

CHAPTER ONE

INTRODUCTION

The present study was an exploration of the relationships among creativity, sex-role preference, and perception of parental behavior in fifth-grade boys.

Creativity

The question of dimensionality. The term "creativity" has been used quite loosely in the experimental literature, apparently possessing different meanings for different investigators. Whereas some studies (Ghiselin, 1952; MacKinnon, 1962; Taylor & Barron, 1963) have viewed creativity from a fairly global standpoint, in which literary or scientific success constituted the criterion, other studies (Cline, Richards, & Needham, 1963; Eisenstadt, 1966; Fosmire, 1963; Getzels & Jackson, 1962; Guilford, 1956, 1959a, 1959b, 1959c, 1963; Higgins, 1966; Maltzman, Belloni, & Fishbein, 1964; Mednick, Mednick, & Mednick, 1964; Mednick, Mednick, & Sarnoff, 1964; Torrance, 1960, 1962; Wallach & Kogan, 1965) have viewed creativity from the standpoint of limited, laboratory-type, operationally defined tasks. Still other investigators have employed various tests lying midway between the global and the specific product approach. A common example of such a midway

approach is the use of the Revised Art Scale of the Welsh Figure Preference Test (Golann, 1962; Littlejohn, 1967). Another means of viewing creativity has been the descriptive approach, in which creativity is defined or discussed in such loose terms as expansion of ego boundaries (Rose, 1964), a positive, self-integrating force (Andrews, 1961), or self-renewal (Barron, 1963). For a discussion and evaluation of various theories of creativity the reader is referred to Madans (1964).

Implicit in the above approaches is the question of whether creativity constitutes a single psychological dimension or a number of diverse psychological dimensions. Although laymen and several investigators (Ghiselin, 1952; MacKinnon, 1962; Taylor & Barron, 1963) have tended to view creativity as unidimensional, the majority of research at first glance appears to support a multi-dimensional approach.

Inspection of the data obtained from several investigations (Cline, Richards, & Abe, 1962; Cline, Richards, & Needham, 1963; Getzels & Jackson, 1962) which employed batteries of creativity tasks such as thinking up uses for a given object, composing endings for fables, completing incomplete line drawings, etc., reveals that the correlations between the creativity tasks and a general intelligence test were higher than the intercorrelations among the creativity tasks. Such findings would seem to imply that it may be unwarranted to speak of creativity as a single psychological dimension, since the diverse creativity tasks possess

nothing in common beyond that which they also share with the intelligence measure.

Although the Torrance group admits that creativity is of two kinds--verbal creativity and visual creativity--which are largely independent of each other, examination of the data from the Torrance studies (Torrance, 1960, 1962; Torrance & Gowan, 1963; Yamamoto, 1964a, 1964b, 1964c) on the basis of correlations between creativity tasks and intelligence, and intercorrelations among creativity measures, lends itself to the conclusion that creativity may actually contain a number of dimensions. Guilford (1956, 1959a, 1959b, 1959c, 1963) has tended to denote the general area of creativity with the label "divergent thinking." Analyzing the data of some earlier Guilford studies (Guilford & Christiansen, 1956; Wilson, Guilford, et al., 1954), Thorndike (1963) found that the general intelligence indicators were more highly related among themselves than the divergent thinking procedures, and that the divergent thinking procedures were almost as strongly related to the general intelligence indicators as the divergent thinking procedures were related among themselves. Thus, that which united the divergent thinking procedures, Thorndike concluded, was actually the variance which they shared in common with the indicators of general intelligence.

Although at first glance it appeared that existing data did not permit the conceptualization of creativity as a single psycho-

logical dimension, Wallach and Kogan (1965), examining the procedures employed in these studies, noted that the creativity tasks were administered in a test-like atmosphere (time pressure, group rather than individual administration, etc.). Aware of the fact that Rugg (1963), in his study of autobiographical accounts of famous scientists and artists, employed such terms as "relaxed" and "permissive" to characterize the attitude which he believed to be necessary for creative insights, and that Dentler and Mackler (1964) had demonstrated that administration of a creativity test under relaxed conditions resulted in significantly higher scores than when the same test was administered under various evaluational conditions, Wallach and Kogan (1965) reasoned that a test-like atmosphere might impose restrictions upon associative freedom. Consequently, Wallach and Kogan employed a game-like atmosphere and freedom from time pressure in their creativity investigation. Correlations among their creativity measures were on the order of .4, correlations among their intelligence indicators were on the order of .5, and the average correlation between the two sets of measures was about .1. From these data they concluded that there existed a unitary, pervasive dimension of individual differences which could be termed "creativity."

The associative basis of creativity. Following the example of Wallach and Kogan (1965), the present investigation employed Mednick's (1962) conceptualization of creativity as a particular type of associative process.

Ghiselin (1952) had perused the introspections of manifestly creative individuals such as Einstein, Coleridge, Brèton, and Poincaré. Reading the accounts in Ghiselin, Mednick (1962) noted among these famous people a similarity in their accounts of the process of creation, and defined the creative thinking process as "the forming of associative elements into new combinations which either meet specified requirements or are in some way useful. The more mutually remote the elements of the new combination, the more creative the process or solution (p. 221)."

A prerequisite to creativity is that the person have the requisite elements in his response hierarchy; if the elements are not present, they can not be combined to effect a creative solution to a problem. The organization of a person's hierarchy of associations will influence the speed and attainment of a creative solution. For example, when presented with the stimulus word "table," a person who tends to be restricted to stereotyped responses such as "chair" may be characterized as having an associative hierarchy with a steep slope. After such a person gets past the first one or two conventional responses to the stimulus word, his associative strength to other words or ideas (lower in the hierarchy) drops rapidly. In a second type of person the associative hierarchy is characterized by a rather flat slope. Although this person may have as his strongest response "chair," this response is not overly dominant; consequently, it is more likely that he will be able to get to the less probable, more remote, associations.

According to Mednick, it is among the more remote associates that the requisite elements and mediating terms for a creative solution will be lurking. From this theory it is predicted that the greater the concentration of associative strength in a small number of stereotyped responses, the smaller will be the probability that the person will attain a creative solution. Thus, the word associations of the highly creative person should be characterized by less stereotypy and commonality. Results of a study by Mednick, Gough, and Woodworth (Mednick, 1958) support this prediction. In addition to the steep hierarchy person and the flat hierarchy person is a third type, the creative person with a steep-deviant associative hierarchy. Although the associative hierarchy is steep, the dominant response is an uncommon one. Such a person is most likely to be the one-shot producer (a not uncommon phenomenon among novelists). If further products are created, they will tend to closely resemble the initial product. By contrast, the flat hierarchy person is more likely to be productive in a variety of avenues of creative expression.

A further prediction can be made from the expectation of less creativity in a person possessing a few very strong responses. The greater the number of instances in which the person has solved problems with given materials in a certain manner, the smaller will be the probability of his achieving a creative solution using these materials. An independent prediction is that the greater the number of associations which a person has to the requisite elements

of a problem, the higher will be the probability of his reaching a creative solution. In other words, the more associates that are evoked by a requisite element of a problem, the more likely it is that an associate will exist which will function as a mediating bridge to another requisite element, thus facilitating combination of elements. Both of these predictions are basic to the present study. On the basis of the above two predictions, it follows that when required to give his repertoire of associations to single stimulus words, the highly creative person should have greater access to less probable associates and should therefore produce a greater number of associates. Several studies concerning the Remote Associates Test (RAT) (Craig & Manis, 1960; Karp, 1960; Kowalski, 1960)support this speculation. Furthermore, results of an experiment by Houston and Mednick (1963) suggest that stereotyped associates may possess aversive properties for individuals who are high in creativity.

Sex-Role Preference

There have been several attempts to conceptualize sex role into various aspects or components (Biller & Borstelmann, 1967; Brown, 1956; Colley, 1959; Fenichel, 1945; Kagan, 1964; Lynn, 1959, 1962; Miller & Swanson, et al., 1960). For example, Brown (1956) distinguishes between sex-role identification and sex-role preference, Lynn (1959, 1962) divides sex role into preference, adoption, and identification, and Biller and Borstelmann (1967)

speak of sex-role orientation, sex-role preference, and sex-role adoption. One aspect which seems common to all of the above conceptualizations is sex-role preference.

Most approaches to the measurement of sex-role preference assume that masculinity and femininity are polar opposites of the same continuum. The problems inherent in such an approach have been discussed by several investigators (e.g., Bieliauskas, 1965; Biller and Borstelmann, 1967; Freedheim, 1960; Sears, Rau, & Alpert, 1965). Traditionally, the more a boy differs from girls in his preferences, the more masculine he is. The question arises, however, as to whether a boy might be highly masculine (as indicated by scoring highly on masculine preferences) while at the same time being relatively feminine (as indicated by scoring relatively highly, compared to other boys, on feminine preferences). Expanding upon this, the further question arises as to whether a boy may be low in both masculine and feminine preferences. Using a bipolar scale, most studies in sex-role preference have assumed that a boy is low in femininity if he scores high on masculinity, or that he is low in masculinity if he scores high on femininity.

Rosenberg and Sutton-Smith (1959, 1964), however, have devised a sex-role preference instrument composed of 180 games, pastimes, and activities, on which the child receives both a masculinity score and a femininity score. Masculine and feminine norms are available (Rosenberg and Sutton-Smith, 1964). Of the 180 items, 25 differentiate boys from girls and another 25

differentiate girls from boys. Because it makes possible the detection and measurement of the child who is high in masculine and feminine preferences or who is low in both, the Rosenberg and Sutton-Smith scales seem to have an important methodological advantage compared to other procedures assessing sex-role preference.

Perception of Parents

Schaefer (1965a) has cited a large number of studies showing that children's reports of parental behavior are significantly related to other data on parent-child relationships, to inventory measures of child adjustment, to observers' reports of child behavior, to school criteria, and to other criteria of the child's adjustment. Further evidence for the validity of children's reports of parental behavior is provided by Biller (1969a), who found that boys' perception of father dominance was related to dominance by the father in father-mother interactions.

The accumulating evidence for the validity of children's reports of parental behavior has motivated the attempt to develop suitable conceptual models for children's perception of parental behavior and, from these models, scales. Several investigators Roe, 1957; Schaefer, 1959, 1961; Slater, 1962) have developed two-demensional models. More recently, three-dimensional models have been developed (Becker, 1964; Roe & Siegelman, 1963; Schaefer, 1965b; Siegelman, 1965).

Schaefer (1965a) devised a set of 26 scales based upon the factor dimensions of love versus hostility and autonomy versus control. Item analysis and factor analyses of these scales led to the formation (1965b) of a revised set of 18 scales, each scale containing 8 or 16 items. Dimensions identified were acceptance versus rejection, psychological autonomy versus psychological control, and firm control versus lax control. These three factors have been validated cross-culturally (Renson, Schaefer, & Levy, 1966), and also agree fairly well with factors proposed by Becker (1964), Lorr and Jenkins (1953), Roe and Siegelman (1963), and Siegelmen (1965). Schaefer's set of revised scales was employed in the present study to measure the child's perceptions of his parents' behavior toward him.

Research Relevant to Creativity and Sex-Role Preference

Several studies suggest that sex-role may be related to creativity. Investigating ninth-graders, Littlejohn (1967) found that high creative boys and girls scored significantly higher on the F-M scale of the Revised Art Scale of the Welsh Figure Preference Test, but that differences between the sexes were absent on the Nichols Subtle Scale, the Nichols Obvious Scale, and the MMPI Interest Scale. Among females, however, the high-creatives surpassed the low-creatives in the masculine direction on these last three measures. Nevertheless, the entire study, in this investigator's opinion, is subject to criticism on the basis of

employing the Welsh Figure Preference Test as a criterion of creativity; one wonders about the content validity of such an instrument. In addition, use of this instrument for assessing creativity and sex role may have confounded the results.

MacKinnon (1962) found that men who were noted for originality in their occupational fields scored more toward the feminine end of an M-F scale than did their less creative counterparts. In somewhat similar fashion, Helson (1965) found that creative college women exhibited a cluster of tomboy interests in their childhood.

Creative high school art students revealed a significantly higher incidence of feminine elements on various projective measures (Hammer, 1964). In addition, however, they exhibited masculine personality characteristics such as high degree of strength, confidence, determination, ambition, and power. Hammer concluded that it is in a fusion of the feminine and the masculine that part of the gift of these creative individuals lay. This integration allowed the necessary sensitivity and intuition to combine with purposive action and determination.

Employing Rorschach protocols, Myden (1959) found that the creative artist was well-oriented, had a strong sense of his "role in life," was non-conformist, was interested in achievement, and was more sexually ambivalent than the less creative artist. Myden interpreted his findings as supporting the Freudian notion that creative people have easier access to primary process material, and consequently employ less repression. Thus, because they may

not be alien to such people, cross-sex-typed thoughts and feelings, are more likely to come into awareness and be acceptable as impulses or fantasies. Along somewhat similar lines, MacKinnon (1962) has proposed a theory of repression to explain the presence of a feminine component in creative persons. A man can only attain a high degree of masculinity (as defined by our culture), says MacKinnon, if he represses the feminine elements which all men possess. With women, ultra-femininity would be achieved by the repression of masculine tendencies. MacKinnon maintains that repression exerts a general impact upon thought processes and interferes with the accessibility of the individual's own previous experiences. A person who uses the defense mechanism of repression can not be "fluent in scanning thoughts." He reports that creativity is associated with the absence of repression, as indicated by personality assessment tests.

Further support for such a position is given by Barron (1957). Barron views the recognition by males of impulses which are considered more appropriate in women, or at least more characteristic of women than of men in this culture, as one aspect of the more basic disposition to allow more complexity and more contradictions into consciousness. Men noted for originality, says Barron, permit themselves to be more aware of tabooed interests and impulses, and attempt to integrate these superficially discordant phenomena into a more complex whole.

Obtaining sex-role orientation and sex-role preference

measurements on kindergarten boys, Biller, Singer, and Fullerton (1969) found that boys who exhibited mixed sex-role patterns (high masculine orientation and low masculine preference, or the converse) scored significantly higher in creativity than did boys who revealed consistent sex-role patterns (high masculine in orientation and preference or low masculine in both). Creativity was assessed by requesting the children to name things having a certain characteristic (e.g., round) and to suggest uses for various objects (e.g., newspaper). One of several possible explanations offered by the authors for the findings was that boys with discrepant sex-role patterns may have at their disposal a wider range of experiences, while boys with consistent sex-role patterns may be avoiding experiences which are highly masculine or may have been prevented from having experiences which are highly feminine.

Implications for the present study. It appears likely that feminine interests are related to creativity in males. On the other hand, feminine interests alone may not be sufficient; masculine personality traits may be necessary in order to provide the "energetique" for implementing concrete products of the creative processes. This presence of masculine personality traits would probably be reflected in masculine interests.

From a purely S-R framework, it seems a reasonable assumption that the male who exhibits a high number of masculine and feminine interests will have in his repertoire a greater number, and a broader range, of responses to any given stimulus. In the Mednick

(1962) framework of creativity, such a person would appear to be predisposed to producing creative responses. Most previous researchers have viewed masculinity and femininity as polar ends of the same continuum; it has been assumed that a person high in masculinity is low in femininity, and the converse. By employing two separate scales--one for masculinity and one for femininity--an attempt was made in the present study to find out if creative individuals were high in both masculinity and femininity of interests.

Assuming an associative basis for creativity, a male with high feminine preferences but low masculine preferences might exhibit less creativity than a male with high masculine and high feminine preferences. The male who is high in masculinity but low in femininity of preferences might exhibit even less creativity. In both of these cases of combinations of high and low preferences, only a limited number of responses would be available in the individual's repertoire. However, the high feminine - low masculine preference male should presumably be employing less repression and might have more associations available for creativity than the high masculine - low feminine preference male, who might be employing a considerable amount of repression and would be approaching stimulus situations in a highly stereotyped fashion.

Finally, there is the case of the male who is low in both masculinity and femininity of interests. Perhaps such an individual would have low preferences because he typically invests little energy in responding to his environment. This might stem from the

presence of excessive anxiety, or from a schizoid personality. Whatever the cause, such a person would expend only minimal output in a creativity task; his creativity score would be lower than that of the other three types of individuals.

Research Relevant to Creativity and Perception of Parents

Although there is a general paucity of studies relating creativity to children's perceptions of their parents, a number of investigations have suggested some of the familial interactions present in the homes of creative persons. Parents of creative children have been found to have less domestic value concensus and more role tension, thus reflecting an emphasis on individual divergence and expression of feeling (Dreyer & Wells, 1966); to be expressive and non-dominating, engaged in occupations which permit considerable autonomy, and accepting of regressive behavior in the child (Weisberg & Springer, 1961); to permit the child freedom of expression (Starkweather & Azbill, 1965).

A study by Helson (1966) revealed that fathers of creative women tend to be intellectually oriented and to place value on moral integrity. Datta and Parloff (1967) found that creative young scientists tended to perceive both parents as encouraging independence, as moderately affectionate, and as low in negative involvement and intrusive control. Fathers of the more creative young scientists were rated lower in authoritarian behavior, control, and enforcement, and higher in non-enforcement and extreme

autonomy, than fathers of the less creative young scientists. Mothers of the more creative subjects were rated lower in hostile detachment, control, enforcement, symbolic love punishment, direct object punishment, and hostile control, and higher in non-enforcement, than mothers of the less creative subjects. According to Nunnaly (1964), creative children tend to come from home environments unusual in the sense that the mother may spend considerable time away from home in vocational or avocational pursuits, the father may be poorly adjusted as a male and as a family member, one or both of the parents may reject the child, and the child may be living with foster parents or with only one parent.

Of the above studies, the Datta and Parloff (1967) research seemed most relevant to the present investigation; children rated their parents on various scales. The remainder of the studies, however, have either been based upon retrospective accounts or have employed unstandardized measuring instruments.

Implications for the present study. Because creativity has been defined by a variety of criteria in the studies cited, it is somewhat difficult to form generalizations as to congruence or lack of congruence regarding the results of these studies. It would appear, however, that the creative child's parents allow him autonomy and freedom of expression. Previous research has suggested that the parents of the creative child are probably permissive in their attitude toward his behavior, allowing him to respond to stimuli in novel ways or in ways which diverge from mores and

stereotypes. In other words, they tend to let the child respond in whatever way he wishes, and may even encourage such behavior, facilitating his desire to be independent in both thought and action. Because the child models his behavior in large part upon that of his parents, it does not seem unreasonable to infer that the parents of the creative child may be, to an extent, non-conformists. Quite likely the major means of controlling the child's behavior would be through love rather than through punishment, as punishment would probably tend to make the child afraid to try out new responses in a given stimulus situation; if the home environment were nurturant, the child could feel free to behave creatively without fearing withdrawal of love.

It was speculated that creative children perceived their parents as nurturant, accepting, and autonomy-granting. It was of interest to speculate whether the creative child perceived considerable differences between his father and his mother on these dimensions. The case could well be that both parents were salient, that the child attached prestige to the observed behavior of both parents, and that by desiring to imitate both parents the child would develop masculine and feminine interests. Development of both masculine and feminine interests, with acceptance and even encouragement by the parents, would facilitate development in the child of a response repertoire containing numerous and diverse elements.

Research Relevant to Sex-Role Preference and Perception of Parents

Biller and Borstelmann (1967) cite a number of studies which suggest that the child's relationship with his parents may be focused upon as an antecedent condition for the development of sex-role preferences. Availability of the father as a model appears to be important for the development of masculine preferences (Bach, 1946; Biller, 1968, 1969b; Hetherington, 1966; P. Sears, 1951). Having a nurturant father also appears to be an important factor in masculine preferences development (Bronson, 1959; Mussen & Distler, 1959; Mussen & Rutherford, 1963). Fathers of boys with masculine sex-role preferences appear to be more dominant in the family than do fathers of low masculine boys (Biller, 1968; Freedheim, 1960; Moulton, et al., 1966; Mussen & Distler, 1959; Mussen & Rutherford, 1963; Winch, 1962). Consistent with role theory, Bandura, Ross, and Ross (1963) found that nursery school children as a rule imitated whichever adult (male or female) controlled positive reinforcement; the child tended to imitate whichever adult he perceived as more powerful. In line with this, maternal dominance has been found to impede a boy's masculine development (Altucher, 1957; Hetherington, 1965; Kagan, 1958; Lansky, 1956; Levy, 1943; Moulton, et al., 1966; P. Sears, 1953).

Baldwin, Kalhorn, and Breese (1949) and Becker (1964) found that restrictive, autocratic parents generally had passive, dependent, conforming children, whereas permissive, democratic parents

generally had active, independent, assertive children. Along similar lines, Sears, Rau, and Alpert (1965), investigating preschool children, found that boys low in masculinity had a parent or parents who were anxious, non-permissive toward aggression, and severely punishing of it, whereas highly masculine boys had parents who permitted and accepted masculine behavior in their sons.

Interestingly, the parental behaviors related to masculinity of sex-role preference appear to be somewhat similar to the hypothesized parental behaviors related to creativity. Perhaps parental behavior provides a link between creativity and sex-role preference.

Although numerous studies have been conducted on the familial antecedents of sex-role preference in boys, these studies have generally not utilized measures of both masculinity and femininity, or else they have not regarded masculinity and femininity as independent dimensions.

Implications for the present study. In categorizing the subjects according to sex-role preference, the above studies assumed a bipolar M-F continuum; the child was either masculine or feminine in his preferences. Because the present study assumed two sex-role preference continua--masculine and feminine--the aspect of this investigation concerned with relating sex-role preference to perception of parents was largely exploratory in nature. Although some parental perception predictions could be made for high masculine - low feminine and low masculine - high feminine pre-

ference boys, it was difficult to predict relationships in the case of boys high in masculine and feminine preferences or low in both.

In the case of the high masculine - low feminine preference boy, the father might be perceived as salient, limit-setting, and nurturant. The mother might be nurturant, and both parents might be somewhat permissive and democratic. In the case of the high feminine - low masculine preference boy, the mother might be perceived as salient, limit-setting, and protective. The father might be ineffectual, non-accepting and critical, and undemonstrative. Both parents might exhibit a non-permissive attitude toward aggression. In the case of the high masculine - high feminine preference boy, both parents might be nurturant, accepting, autonomy-granting, and share the task of setting limits. The case of the low masculine - low feminine boy would prove especially interesting; it seemed impossible to make confident predictions. One could speculate that the boy might perceive both parents as hostile, non-accepting, and non-nurturant toward him, or that both parents would be ineffectual and hence possess little or no incentive value for imitation, or that both parents would administer severe discipline and grant little or no autonomy. On the other hand, the case might be that the child was somewhat schizoid and hence exhibited a general lack of interests, irrespective of parental behavior (quite likely, the parents would also show signs of disturbance).

Hypotheses

No previous study attempted to relate creativity, sex-role preference, and the child's perception of parental behavior. Major features of the present study included an operational definition of the nebulous concept of creativity, the conceptualization of masculinity and femininity as two separate continua rather than polar ends of a single underlying continuum, and assessment of the parents as perceived by the child. Of at least equal significance was the nature of the instruments that were employed: they were empirical, they were quantitative, and normative data was available.

In light of the previous discussion and the evidence cited, the following tentative hypotheses were put forth for their heuristic value:

1. High masculine (MAS) - high feminine (FEM) boys score higher in creativity than do any of the other three MAS - FEM preference groups.

2. Low MAS - low FEM boys score lower in creativity than do any of the other three MAS - FEM preference groups.

3. Low MAS - high FEM boys score higher in creativity than do high MAS - low FEM boys.

4. Total number of items marked "like" on the game checklist is positively correlated with creativity.

5. Creativity and general intelligence are not significantly correlated.

The following hypotheses concerned the Schaefer scales. Because the parental behavior aspects of the study were essentially exploratory, these hypotheses were put forth for heuristic purposes. The hypotheses were formulated in terms of the labels with which Schaefer named his scales.

6a. High creative boys rate their fathers high on acceptance, positive involvement, and acceptance of individuation.

6b. High creative boys rate their mothers high on acceptance, positive involvement, and acceptance of individuation.

7a. High MAS - high FEM boys rate their fathers high on acceptance, positive involvement, and acceptance of individuation.

7b. High MAS - high FEM boys rate their mothers high on acceptance, positive involvement, and acceptance of individuation.

8a. High MAS - low FEM boys rate their fathers high on acceptance, control, and positive involvement.

8b. High MAS - low FEM boys rate their mothers high on acceptance.

9a. Low MAS - high FEM boys rate their fathers high on rejection and hostile detachment.

9b. Low MAS - high FEM boys rate their mothers high on possessiveness, control, intrusiveness, and control through guilt.

10a. Low MAS - low FEM boys rate their fathers high on rejection and hostile detachment.

10b. Low MAS - low FEM boys rate their mothers high on rejection and hostile detachment.

CHAPTER TWO

METHOD

Subjects

Ss were 70 fifth-grade boys from a public school system in western Massachusetts. Age of the Ss ranged from 10 years, 3 months, to 12 years, 4 months (mean age = 11 years, 0 months). I.Q. ranged from 79 to 127 (mean I.Q. = 104). The Ss were mostly from a middle class background. All the fifth-grade boys from the four schools employed in the study were tested, but only those Ss who had both parents present in the home were included in data analysis.

Chronological age, I.Q., family constellation, and parental occupation were obtained from the school files.

Measures Employed

Instruments employed to measure creativity, sex role, and parental behavior were, respectively, an adpatation of the verbal creativity tasks of Wallach and Kogan (1965), the Rosenberg and Sutton-Smith Play and Game List, and the Schaefer Parent Perception Scales. In addition, anxiety, test anxiety, and defensiveness were assessed by a questionnaire method used by Wallach and Kogan (1965).

The verbal creativity tasks. Two verbal creativity tasks were employed: "Instances," in which the task was to generate possible instances of a class concept specified in verbal terms (e.g., "Name all the things you can think of that are round."), and "Alternate Uses," in which the task was to generate possible uses for an object specified verbally (e.g., "Tell me all the different ways you could use a newspaper."). For both of these tasks, two measures were obtained: number and uniqueness. Number was defined as the total number of responses given by an S to a particular item, while uniqueness was defined as any response to a given item offered by only one of the Ss.

There were five Instances items and five Alternate Uses items. Four of the Instances items and all five of the Alternate Uses items had been used by Wallach and Kogan (1965). It was decided to shorten the original Wallach and Kogan Alternate Uses task, and to lengthen the Instances task by the addition of an item employed in the Biller, Singer, and Fullerton (1969) study (see Appendix A for the items used by Wallach and Kogan and Appendix B for items employed in the present investigation).

The Rosenberg and Sutton-Smith Play and Game List. This is a 180-item questionnaire of games, activities, and interests. Ss are instructed to place a mark in the "like" or "dislike" column for those items in which they currently engage. Twenty-five items statistically differentiate boys from girls at the .01 level, and 25 items statistically differentiate girls from

boys at the .01 level. Each S receives a masculinity score (maximum 25) and a femininity score (maximum 25). (A reproduction of sides one and two of the Play and Game List is presented in Appendix C. The 25 statistically masculine items and the 25 statistically feminine items are listed in Appendix D.)

The Schaefer Parent Perception Scales. This is a set of factor analytically-determined scales, numbering 18, on which the S rates his parents' behavior toward him. Six of the scales contain 16 items and 12 of the scales contain 8 items. The S is given a 192-item questionnaire for each parent (the questionnaires are identical except for the gender of the pronouns). For each item the S is requested to mark whether the particular parent is "like" (2 points), "somewhat like" (1 point), or "not like" (0 points) that statement. (The 18 scales are listed in Appendix E and a reproduction of the father questionnaire is presented in Appendix F.)

Anxiety, test anxiety, and defensiveness measures. This was an 88-item self-descriptive inventory developed by Wallach and Kogan (1965). Twenty items measured anxiety, 19 items measured test anxiety, and 27 items measured defensiveness. The scales had been adapted by these investigators from the work of Sarason and his associates (Davidson & Sarason, 1961; Sarason et al., 1960). Because many of the items contained negative affect, the inventory was placed last in the sequence of procedures; if placed earlier, it would probably have adversely

affected the relaxed atmosphore. The task was called "What I Am Like" (a reproduction of the questionnaire is presented in Appendix G and the numbers of the items comprising the three scales are listed in Appendix H).

I.Q. Verbal, Performance, and Full Scale Lorge-Thorndike I.Q.'s were obtained from office files. This group test had been routinely administered by the school system two months prior to the present study.

Procedure

According to Wallach and Kogan (1965), it was imperative that the creativity tasks be administered in a game-like atmosphere free from time limits. Individual administration was mandatory. Wallach and Kogan stressed that the E should not be perceived by the Ss as a teacher, as this would make the S feel that he was under evaluation and would hinder associative freedom. It seemed likely that the administration of the paper and pencil tasks might result in E being perceived as a teacher. Therefore, the creativity tasks were administered before the other measures. An additional advantage of this test sequence was that the E administered the creativity tasks blindly; the E did not know which Ss were high or low masculine, high or low feminine, etc. To further avoid being perceived as a teacher, E was introduced to the classes as someone who was interested in children's games.

The creativity tasks were administered in a room free from

as many extraneous stimuli as possible. To establish rapport, E and S chatted for a few minutes. This was followed by warm-up procedures such as asking the S which three animals he would like to be, which three he would not like to be, and why, and what S wanted to be when he grew up. Both creativity tasks were administered in a single session, the Instances task first. The S was given as much time as he wished for each item. Only if the S indicated with some degree of finality that he was finished with an item (e.g., "I just can't think of any more."), did the E proceed to the next item.

The frame of reference given to the Ss concerning the warm-up procedures and the creativity tasks was that these were children's games and that the E was interested in how children played these games. Wallach and Kogan's (1965) instructions were used. The Instances task was introduced as follows:

> In this game I am going to tell you something and it will be your job to name as many things as you can think of that are like what I tell you. For example, I might say "things that hurt." Now you name all the things you can think of that hurt. (E then lets the child try.) Yes, those are fine. Some other kinds of things might be: falling down, slapping, fire, bruises, or a knife. So we see that there are all kinds of different answers in this game. Do you see how we play? (If the child already indicated strong understanding, the last sentence is replaced by, "I can see that you already know how we play this game.") Now remember, I will name something and you are supposed to name as many things as you can think of that are like what I've said. OK, let's go. (Wallach and Kogan, 1965, p. 29.)

E's explanation of the example was expressed in a manner which conveyed the feeling of suggestion rather than finality. The

possible answers were given slowly and in a suggesting tone, to give the impression that the E was thinking of them at the time.

The Alternate Uses task was introduced as follows:

> Now, in this game, I am going to name an object--like a light bulb or the floor--and it will be your job to tell me lots of different ways that the object could be used. Any object can be used in a lot of different ways. For example, think about string. What are some of the ways you can think of that you might use string? (E lets the child try.) Yes, those are fine. I was thinking that you could also use string to attach a fish hook, to jump rope, to sew with, to hang clothes on, and to pull shades. There are lots more too, and yours were very good examples. I can see that you already understand how we play this game. So let's begin now. And remember, think of all the different ways you could use the object that I name. Here we go. (Wallach and Kogan, 1965, p. 31.)

After all Ss had been given the creativity tests, the Play and Game List, the Schaefer scales, and the "What I Am Like" tasks were group administered in each school. E explained that he was interested in other games besides the ones which he had already played with the children (the creativity tasks), and wanted to know whether or not the children liked or disliked any of these other games. The E described the format of the Play and Game List and asked the Ss to mark those games which they liked and those which they disliked. Although instructions were printed on the sheet, E went over them with the class to make sure that the instructions were understood (see the Play and Game List, Appendix A, for the printed instructions).

The Schaefer scales were administered next. The atmosphere was matter-of-fact, and with minimal instructions. Instructions

were as follows:

> I wonder if you could all tell me what your father and mother are like. There are lots of different things that you could tell me, and it would take a long time if I talked to each one of you individually. To make things easier, I've printed up a list of ways that different parents treat their children. Some of the items will probably describe your father or mother fairly well, some of the items won't describe them at all, and some of the items will describe them a little or somewhat. (The questionnaires were then distributed.) Look at each item. You will see that it is followed by L, SL, or NL. If your father is like the description given in the item, put a circle around L. If he is somewhat or a little like the description, put a circle around SL. If he is not like the description, put a circle around NL. This list is to describe your father; later I'll give you another list to describe your mother. Are there any questions? Remember, circle L if it's like your father, circle SL if it's somewhat or a little like your father, and circle NL if it's not like your father.

The mother questionnaire was administered after the father questionnaire. The same directions as above were given except that the gender of the pronouns was changed.

Finally, the measure of anxiety, test anxiety, and defensiveness was administered as follows:

> I'd like to know what each one of you is like. The best way would be to do some more things together, but we don't have the time for it. So I've printed up a list of sentences called "What I Am Like." I'll pass them out to you now. (E passed out the questionnaires.) There are a whole lot of sentences here. Some of them will probably describe you and some of them probably won't. If a sentence describes you, circle the number of that sentence. If it doesn't describe you, don't circle the number. Now, follow along as I read the instructions. (E reads the instructions.) Are there any questions?

CHAPTER THREE

RESULTS

Statistical Design

Original design. Each of the four creativity variables (Instances-number, Instances-unique, Alternate Uses-number, Alternate Uses-unique) was transformed into standard score form. For example, an S's standard score for Instances-unique was obtained by totaling his raw scores for the five questions, subtracting this total from the population mean, and then dividing the resulting figure by the standard deviation of the population. Each S's standard scores for the four creativity variables were then summed so that they would constitute a total creativity score (CR).

To assess the reliability of the creativity instrument, item-sum correlations and Spearman-Brown split-half reliability coefficients were performed for each of the four creativity variables. A correlation matrix for the four variables was also compiled. In order that the number and unique variables from a given procedure (e.g., Instances or Alternate Uses) be uncontaminated for purposes of correlation, a second matrix was constructed in which the "number" measures consisted of all responses except those that were unique. This latter procedure was employed by Wallach and Kogan (1965).

Spearman-Brown split-half reliability coefficients were obtained for masculinity score (MAS), femininity score (FEM), and number of items marked "like" on the Play and Game List (LIKE). Spearman-Brown split-half reliability coefficients were also obtained for the 18 father scales and the 18 mother scales.

Masculinity scores were split at the median, as were femininity scores. Ss were divided into four sex-role pattern groups: high masculine - high feminine, low masculine - high feminine, high masculine - low feminine, low masculine - low feminine. A one-way analysis of variance was then performed on the creativity index scores as well as on the 18 father scales and the 18 mother scales.

Creativity index scores were rank-ordered. T-tests were performed between the top and bottom quartiles for the 18 father scales and the 18 mother scales.

A correlation matrix was obtained for the following variables: masculinity score (MAS), femininity score (FEM), number of Play and Game List items marked "like" (LIKE), creativity index (CR), intelligence (IQ), and socio-economic status (SES).

Additions to the design. For reasons which will be discussed later, it was decided to add and to construct additional variables and to perform a number of additional analyses.

The Lorge-Thorndike I.Q. test had been group administered by the school system to all elementary school pupils two months prior to the study. This test provided a measure of verbal intelligence

(VIQ), a measure of performance intelligence (PIQ), and a total intelligence measure (TIQ). Chronological age (CA) was obtained from school files, and for each S a mental age score (MA) was derived from the CA and TIQ information.

Two experimental scales were derived from the Play and Game List. A measure of total number of sex-typed activities (SEX) was obtained by adding the FEM score to the MAS score. A difference score (DIFF) was obtained by subtracting the FEM score from the MAS score.

It was decided to combine the individual parent scales into more global measures. Intercorrelations were obtained for the 18 father scales (see Table 1) and for the 18 mother scales (see Table 2). Four father scales having an average intercorrelation of .62 appeared to be measuring positive or nurturant parental behaviors. These four father scales were converted to standard score form and summed to yield a measure called "father plus" (F+). The same four mother scales had an average intercorrelation of .54. In similar fashion a measure called "mother plus" (M+) was obtained. Eight scales appeared to be measuring negative parental behaviors; the average intercorrelations were .52 for the father scales and .53 for the mother scales. The eight father scales were converted to standard score form and summed to yield a measure called "father minus" (F-). A similar measure called "mother minus" (M-) was obtained from the eight mother scales. Finally, three father scales having an average intercorrelation of

Table 1

Intercorrelations among Schaefer Father Scales

(N = 70)

Schaefer father scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Acceptance	1.00	.56	.46	-.37	.20	-.01	.77	.28	.11	.05	-.22	-.13	.74	.32	-.06	-.40	.01	.12
2. Childcenteredness		1.00	.40	-.31	.09	.01	.54	.22	.24	-.03	-.24	.01	.45	.21	-.02	-.29	-.01	.16
3. Possessiveness			1.00	.15	.34	.30	.38	.42	.57	.49	.25	.25	.31	.31	.34	.21	.39	.23
4. Rejection				1.00	.04	.43	-.30	.19	.40	.59	.60	.58	-.37	.28	.48	.63	.64	.35
5. Control					1.00	.39	.36	.30	.18	.46	.03	-.15	.23	-.05	.31	.04	.14	-.07
6. Enforcement						1.00	.13	.36	.27	.55	.22	.19	-.13	.03	.34	.42	.22	.14
7. Positive Involvement							1.00	.41	.20	.16	-.25	-.12	.65	.31	.10	-.30	-.04	.02
8. Intrusiveness								1.00	.37	.57	.17	.11	.20	.34	.40	.12	.30	.12
9. Control Through Guilt									1.00	.52	.30	.37	.04	.32	.46	.33	.54	.27
10. Hostile Control										1.00	.41	.26	.00	.20	.62	.57	.61	.23
11. Inconsistent Discipline											1.00	.58	-.04	.29	.28	.59	.43	.37
12. Nonenforcement												1.00	-.12	.52	.17	.69	.55	.51
13. Acceptance of Individuation													1.00	.32	-.07	-.37	-.10	.16
14. Lax Discipline														1.00	.20	.35	.48	.43
15. Instilling Persistent Anxiety															1.00	.42	.50	.16
16. Hostile Detachment																1.00	.65	.45
17. Withdrawal of Relations																	1.00	.56
18. Extreme Autonomy																		1.00

Note.—For 69 df, r's of .30 and .24 are significant at the .01 level and the .05 level respectively.

Table 2

Intercorrelations among Schaefer Mother Scales

(N = 70)

Schaefer mother scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Acceptance	1.00	.52	.34	-.30	.11	-.01	.62	.10	-.06	.00	.05	.02	.52	.09	-.11	-.32	-.19	.19
2. Childcenteredness		1.00	.61	-.05	.10	.03	.50	.44	.15	.00	.10	.30	.51	.12	.16	-.06	-.05	.32
3. Possessiveness			1.00	-.03	.08	-.05	.37	.34	.17	.09	.01	.22	.28	.12	.19	-.06	-.05	.18
4. Rejection				1.00	.27	.53	-.24	.10	.50	.64	.51	.54	-.20	.45	.52	.74	.68	.47
5. Control					1.00	.41	.13	.20	.38	.41	.08	.02	.21	-.07	.36	.14	.17	.12
6. Enforcement						1.00	.11	.22	.40	.55	.28	.31	-.11	.02	.40	.40	.37	.28
7. Positive Involvement							1.00	.22	.00	-.16	.06	.02	.60	.01	-.06	-.30	-.26	.02
8. Intrusiveness								1.00	.17	.08	.12	.11	.28	-.04	.34	.00	-.01	.05
9. Control Through Guilt									1.00	.59	.28	.38	-.03	.22	.63	.44	.48	.30
10. Hostile Control										1.00	.34	.37	-.22	.36	.60	.63	.58	.40
11. Inconsistent Discipline											1.00	.57	.09	.54	.38	.49	.66	.51
12. Nonenforcement												1.00	.06	.58	.41	.59	.56	.62
13. Acceptance of Individuation													1.00	.07	-.02	-.31	-.28	.11
14. Lax Discipline														1.00	.27	.51	.42	.42
15. Instilling Persistent Anxiety															1.00	.56	.44	.23
16. Hostile Detachment																1.00	.68	.48
17. Withdrawal of Relations																	1.00	.54
18. Extreme Autonomy																		1.00

Note.—For 69 df, r's of .30 and .24 are significant at the .01 level and the .05 level respectively.

.36 appeared to be measuring a possessing, controlling, intruding type of paternal behavior. These three scales were converted to standard score form and summed to yield a measure called "father neurotic" (FN). A similar intercorrelation pattern was not found for the same three mother scales. Father plus (F+) score and mother plus score (M+) were summed to provide a "parent plus" score (P+), and similarly a "parent minus" score (P-) was obtained. The individual scales comprising the derived scales are listed in Appendix I.

For heuristic purposes it was also decided to include the anxiety (ANX), test anxiety (TA), and defensivemess (DEF) scores in the analyses.

Spearman-Brown split-half reliability coefficients were obtained for all of the above new variables.

A correlation matrix was obtained for a total of 22 original and additional variables. Because the femininity measure was extremely skewed, Chi-squares were used to test the relationship of FEM to pertinent variables.

Inspection of the creativity index (CR) frequency distribution suggested that 11 Ss were extremely creative while 12 Ss were extremely uncreative. T-tests were performed between these two extreme groups on a number of variables.

A number of variables were analyzed in the following 2 x 2 analyses of variance:

femininity x masculinity
father plus x masculinity

creativity x total I.Q.
father plus x anxiety
masculinity x anxiety
femininty x anxiety
father plus x mother plus
father plus x father minus.

In addition, each of the above eight sets of variables was divided at the median (i.e., low creativity and high creativity, low total I.Q. and high total I.Q.) and analyzed by Chi-square to see if particular groupings within each set of two variables were significantly more frequent than other groupings within the same set.

Reliability

Spearman-Brown split-half reliability coefficients indicated moderate reliability for the Play and Game List variables of MAS, FEM, and LIKE (see Table 3).

The validity of the creativity instrument was assessed by several procedures. Item-sum correlations for the Instances procedure are presented in Table 4, while item-sum correlations for the Alternate Uses procedure are presented in Table 5. All items appeared to contribute significantly to their respective subtest total scores. Means and standard deviations of items and totals are listed in Table 6 for the Instances procedure and in Table 7 for the Alternate Uses procedure.

Intercorrelations among the four creativity subtests were quite uniform (see Table 8), and remained significant even when the "unique" totals were subtracted from the "number" totals to correct for contamination (see Table 9). Two sets of Spearman-

Table 3

Spearman-Brown Split-Half Reliability Coefficients for Play and Game List Variables, Derived Parent Scales, I.Q., and Personality Variables

Variable	$r_{1,2}$
MAS	.59
FEM	.62
LIKE	.77
F+	.87
M+	.83
F-	.91
M-	.91
FN	.60
TIQ	.82
ANX	.72
TA	.90
DEF	.71

Table 4

Item-Sum Correlations for the Instances Procedure

(N = 70)

Item	Number	Unique
1. Red	.73	.63
2. Round	.92	.92
3. Noise	.84	.90
4. Square	.83	.80
5. Wheels	.80	.78

Table 5

Item-Sum Correlations for the Alternate Uses Procedure

(N = 70)

Item	Number	Unique
1. Newspaper	.79	.84
2. Knife	.83	.83
3. Tire	.78	.70
4. Shoe	.77	.77
5. Chair	.82	.81

Table 6

Means and Standard Deviations of Items and Totals for the Instances Procedure

(N = 70)

Item	Number		Unique	
	$\bar{x}$	S.D.	$\bar{x}$	S.D.
1. Red	52.07	47.77	8.87	14.53
2. Round	35.76	35.02	8.60	15.27
3. Noise	52.16	45.80	13.37	23.26
4. Square	34.20	41.76	8.07	25.17
5. Wheels	17.27	10.94	2.74	6.14
Total	191.46	148.51	41.66	68.88

Table 7

Means and Standard Deviations of Items and Totals for the Alternate Uses Procedure

(N = 70)

Item	Number		Unique	
	$\bar{x}$	S.D.	$\bar{x}$	S.D.
1. Newspaper	10.63	9.48	4.41	7.76
2. Knife	12.37	10.09	4.20	5.51
3. Tire	7.47	4.63	3.24	3.26
4. Shoe	8.36	7.11	3.46	4.45
5. Chair	8.93	6.18	3.64	4.24
Total	47.76	30.06	18.96	20.22

Table 8

Intercorrelations among Creativity Subtests

(N = 70)

Creativity subtest	1	2	3	4
1. Instances - number	1.00	.92	.73	.82
2. Instances - unique		1.00	.71	.83
3. Alternate Uses - number			1.00	.92
4. Alternate Uses - unique				1.00

Note.—For 69 df, r's of .30 are significant at the .01 level.

Table 9

Intercorrelations among Creativity Subtests, Corrected for Spuriousness

(N = 70)

Creativity subtest	1	2	3	4
1. Instances - number	1.00	.76	.42	.71
2. Instances - unique		1.00	.32	.83
3. Alternate Uses - number			1.00	.54
4. Alternate Uses - unique				1.00

Note.--For 69 df, r's of .30 are significant at the .01 level.

Brown split-half reliability coefficients were computed for the four subtests. Items 1, 3, and 5 were contrasted to items 2 and 4 in the first case, while in the second case items 1 and 2 were contrasted to items 3, 4, and 5. Reliability coefficients were substantial in every case and the two sets of comparisons were virtually identical (see Table 10). Split-half reliability coefficients were also obtained for the Instances procedure and the Alternate Uses procedure by comparing number of responses to number of unique responses. Split-half reliability coefficients were obtained for the test as a whole by comparing the total sum of the number and uniqueness responses from the Instances procedure with that obtained from the Alternate Uses procedure, and also for the test as a whole by comparing the number of responses to the Instances and Alternate Uses procedures with the number of unique responses to these same two procedures (see Table 11). Results indicated that the test as a whole was an extremely consistent instrument. (Correlations among the subtests, various subtest combinations, and the creativity index are presented in Table 12.)

Spearman-Brown split-half reliability coefficients for the original 18 father scales and the original 18 mother scales are listed in Table 13. In general, the 16-item scales appeared to possess more internal consistency than the 8-item scales. The four scales comprising the F+ scale were arranged into three different sets of split halves for the purpose of computing

Table 10

Spearman-Brown Split-Half Reliability Coefficients for the Four Creativity Subtests

(N = 70)

Creativity subtest	Items 1, 3, 5 vs. items 2, 4	Items 1, 2 vs. items 3, 4, 5
Instances - number	.93	.90
Instances -- unique	.91	.92
Alternate Uses - number	.92	.88
Alternate Uses - unique	.92	.90

Table 11

Spearman-Brown Split-Half Reliability Coefficients for Combinations of the Four Creativity Subtests (N = 70)

Creativity subtest combinations	$r_{1,2}$
Instances - number vs. Instances - unique	.96
Alternate Uses - number vs. Alternate Uses - unique	.96
Total Instances vs. total Alternate Uses	.89
Total number vs. total unique	.97

Table 12

Intercorrelations among Creativity Subtests, Various Subtest Combinations, and Creativity Index

(N = 70)

Creativity variable	1	2	3	4	5	6	7	8	9
1. Instances - number	1.00	.92	.73	.82	.98	.79	.93	.91	.93
2. Instances - unique		1.00	.71	.83	.98	.78	.87	.96	.93
3. Alternate Uses - number			1.00	.92	.74	.98	.93	.85	.90
4. Alternate Uses - unique				1.00	.84	.98	.93	.96	.96
5. Instances - total					1.00	.80	.92	.95	.95
6. Alternate Uses - total						1.00	.95	.92	.95
7. Number - total							1.00	.94	.98
8. Unique - total								1.00	.99
9. Creativity Index									1.00

Note.—For 69 df, r's of .30 are significant at the .01 level.

Table 13

Spearman-Brown Split-Half Reliability Coefficients for Schaefer Father Scales and Schaefer Mother Scales

(N = 70)

	Father $r_{1,2}$	Mother $r_{1,2}$
1. Acceptance	.81	.78
2. Childcenteredness	.84	.65
3. Possessiveness	.61	.64
4. Rejection	.87	.80
5. Control	.54	.57
6. Enforcement	.45	.57
7. Positive Involvement	.75	.68
8. Intrusiveness	.71	.41
9. Control Through Guilt	.59	.58
10. Hostile Control	.79	.80
11. Inconsistent Discipline	.64	.71
12. Nonenforcement	.72	.79
13. Acceptance of Individuation	.63	.65
14. Lax Discipline	.55	.67
15. Instilling Persistent Anxiety	.59	.61
16. Hostile Detachment	.83	.82
17. Withdrawal of Relations	.67	.73
18. Extreme Autonomy	.63	.61

roliabilities. Correlations within the sets ranged from .74 to .78 with an average r of .77. Application of the Spearman-Brown formula yielded a reliability coefficient of .87. M+ correlations ranged from .68 to .74 with an average r of .70, yielding a reliability coefficient of .83. The eight scales comprising the F- scale were arranged into four different sets of split halves. Correlations within the sets ranged from .80 to .86 with an average r of .84, yielding a reliability coefficient of .91. M- correlations ranged from . 81 to .86 with an average r of .83, yielding a reliablilty ciefficient of .91. The three scales comprising the FN scale were arranged into three different sets of split halves, and correlations within the sets ranged from .38 to .48 with an average r of .43, yielding a reliability coefficient of .60. (Results are listed in Table 3.) In general, as would be expected, it appears that the more scales contained in the derived scale, the greater was the reliability of the derived scale. The F- scale and the M- scale were quite consistent internally, the F+ scale and the M+ scale were slightly less consistent, and the consistency of the FN scale was only moderate.

Use of Verbal I.Q. and Performance I.Q. as alternate halves of the Total I.Q. resulted in a Spearman-Brown split-half reliability coefficient of .82 (see Table 3). The test anxiety measure showed considerable internal consistency, while that of the anxiety measure and the defensiveness measure was somewhat more moderate (see Table 3).

Results of Statistical Analyses

Results of original analyses. The population employed in the study had the following mean Lorge-Thorndike I.Q.'s: 103 Verbal (VIQ), 105 Performance (PIQ), 104 Full Scale (TIQ). Mean mental age (MA) at the time of the study was 11 years, 6 months, with a standard deviation of 15 months, while mean chronological age (CA) was 11 years, 0 months, with a standard deviation of 6 months. It thus appears that although mean I.Q. was slightly above average, a fairly wide distribution was present. Mean SES rating was 3.8, with a standard deviation of 1.5. Thus, the fathers of the Ss tended to be proprietors of small businesses, skilled workers, or clerical personnel. The subject population could be described as average middle class.

Masculinity and femininity scores were split at the median. High masculine Ss were those who scored 16 or above (N = 36) while low masculine Ss were those who scored 15 or below (N = 34). High feminine Ss were those who scored 3 or above (N = 32) while low feminine Ss were those who scored 2 or below (N = 38). In the case of both the MAS and the FEM scores the mean (see Table 14) was virtually identical to the median. The high MAS - high FEM group and the low MAS - low FEM group contained about twice as many Ss as the low MAS - high FEM group and the high MAS - low FEM group (see Table 15).

Analyses of variance revealed no significant differences in

Table 14

Means and Standard Deviations for Major and Minor Variables

(N = 70)

Variable	$\bar{x}$	S.D.	Variable	$\bar{x}$	S.D.
VIQ	103.23	12.85	CR	0.00	3.72
PIQ	105.31	13.56	F+	0.00	3.38
TIQ	104.48	12.14	F-	0.00	3.24
CA	132.14 (mo.)	5.71 (mo.)	M+	0.00	6.00
MA	137.78 (mo.)	14.85 (mo.)	M-	0.00	6.13
SES	3.86	1.51	FN	0.00	2.27
MAS	15.36	4.56	P+	0.00	6.02
FEM	2.78	2.79	P-	0.00	11.25
SEX	18.14	6.22	ANX	8.38	3.82
DIFF	12.57	4.30	TA	8.43	5.08
LIKE	60.66	21.71	DEF	11.81	3.26

Table 15

Composition of Sex-Role Groups According to N, MAS Score, and FEM Score

	Sex-role group			
	High MAS-high FEM	Low MAS-high FEM	High MAS-low FEM	Low MAS-low FEM
N	22	10	14	24
MAS				
$\bar{x}$	18.73	12.90	18.86	11.25
S.D.	2.59	2.23	2.21	3.53
FEM				
$\bar{x}$	5.27	4.40	1.00	0.88
S.D.	2.76	2.50	0.88	0.85

creativity between sex-role groups. Results are presented in Table 16. The variance of the creativity scores within each sex-role group was quite large. Thus, Hypothesis 1, that high MAS - high FEM boys score highest in creativity, Hypothesis 2, that low MAS - low FEM boys score lowest in creativity, and Hypothesis 3, that low MAS - high FEM boys score higher in creativity than high MAS - low FEM boys were not supported. The correlation between CR and LIKE was -.01, not significant. Thus, Hypothesis 4, that the total number of items marked "like" on the Play and Game List is positively correlated with creativity, was not supported. SES was not significantly correlated with intelligence, masculinity, femininity, or creativity. I.Q. was not significantly correlated with creativity. (Correlations among the variables are presented in matrix form in Table 17.)

The most creative fourth of the Ss was compared against the least creative fourth of the Ss on the 18 father scales and the 18 mother scales. Mean creativity score for the high group (N = 18) was 4.70 with a standard deviation of 4.52; mean for the low group was -2.87 with a standard deviation of 0.49. The large difference between standard deviations is due to the fact that scores for the top quartile ranged from 19.12 to 1.12 whereas scores for the bottom quartile ranged only from -2.26 to -3.94. With one exception, no significant differences were found on any of the 36 parent scales. On the "Control" scale low creative Ss gave their fathers a mean rating of 9.8 whereas high creative Ss

Table 16

Creativity Means, Standard Deviations, and F Ratios for Sex-Role Groups

(df = 3,66)

	Sex-role group					
	High MAS-high FEM (N = 22)	Low MAS-high FEM (N = 10)	High MAS-low FEM (N = 14)	Low MAS-low FEM (N = 24)	F	p
$\bar{x}$	-0.68	0.40	-0.17	0.55	.46	ns
S.D.	2.56	3.12	2.73	5.13		

Table 17

Intercorrelations among Major and Minor Variables

(N = 70)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. VIQ	1.00	.69	.91	-.40	.85	.17	.09	-.28	-.06	.28	.02	.11	-.07	.21	-.42	-.50	-.14	.07	-.50	-.19	-.41	-.30
2. PIQ		1.00	.92	-.35	.87	.06	.18	-.18	.05	.30	.15	.14	-.19	.01	-.29	-.47	-.18	-.10	-.41	-.01	-.22	-.29
3. TIQ			1.00	-.40	.93	.12	.15	-.25	.00	.32	.09	.14	-.14	.12	-.38	-.52	-.17	-.02	-.49	-.11	-.34	-.32
4. CA				1.00	-.06	.14	-.22	.13	-.10	-.32	-.11	-.02	.00	-.08	.10	.12	.00	-.04	.12	.12	.23	.22
5. MA					1.00	.19	.08	-.22	-.04	.23	.06	.14	-.15	.10	-.38	-.53	-.19	-.03	-.49	-.07	-.28	-.27
6. SES						1.00	-.04	.08	.00	-.10	.05	.04	.11	-.04	-.06	.09	.06	.04	.02	-.05	.00	-.02
7. MAS							1.00	.40	.91	.80	.84	-.04	.26	.19	-.10	-.15	.06	.25	-.14	-.11	.10	-.12
8. FAM								1.00	.74	-.23	.62	-.12	.06	-.08	.01	.09	.09	-.01	.05	.26	.35	.00
9. SEX									1.00	.49	.89	-.08	.22	.11	-.07	-.07	.08	.18	-.08	.04	.23	-.09
10. DIFF										1.00	.49	.03	.23	.25	-.12	-.22	.01	.27	-.18	-.29	-.13	-.13
11. LIKE											1.00	-.01	.20	.08	-.12	-.11	.01	.16	-.12	-.02	.15	-.12
12. CR												1.00	-.02	.04	-.15	-.15	-.01	.01	-.17	-.04	-.24	-.09
13. F+													1.00	.65	-.16	.01	.46	.91	-.08	.10	.04	.16
14. F-														1.00	-.22	-.11	.41	.90	-.18	.10	-.14	.01
15. M+															1.00	.72	.44	-.21	.93	.12	.22	.30
16. M-																1.00	.40	-.06	.93	.09	.24	.32
17. FK																	1.00	.48	.45	.30	.17	.17
18. P+																		1.00	-.14	.11	-.06	.10
19. P-																			1.00	.12	.25	.34
20. ANX																				1.00	.46	.32
21. TA																					1.00	.38
22. DEF																						1.00

Note.—For 69 df, r's of .30 and .24 are significant at the .01 level and the .05 level respectively.

gave their fathers a mean rating of 8.6. The difference between these means was statistically significant ($t = -2.12$, $df = 21$, $p < .025$, one-tailed test). Since a significant difference was found in only one of 36 cases, little emphasis can be put on this finding. Thus, Hypothesis 6a, that high creative boys rate their fathers high on acceptance, positive involvement, and acceptance of individuation, and Hypothesis 6b, that high creative boys rate their mothers high on these same variables, received no support (see Tables 18 and 19).

Results of the analyses of variance for scores of the sex-role groups on the 18 father scales and the 18 mother scales are presented in Table 20 and Table 21 respectively. The sex-role groups did not show any significant differences on any of the 36 scales. Thus, the following hypotheses were not supported: Hypothesis 7a, that high MAS - high FEM boys rate their fathers high on acceptance, positive involvement, and acceptance of individuation; Hypothesis 7b, that this same group rate their mothers high on these same variables; Hypothesis 8a, that high MAS - low FEM boys rate their fathers high on acceptance, control, and positive involvement; Hypothesis 8b, that this same group rate their mothers high on acceptance; Hypothesis 9a, that low MAS - high FEM boys rate their fathers high on rejection and hostile detachment; Hypothesis 9b, that this same group rate their mothers high on possessiveness, control, intrusiveness, and control through guilt; Hypothesis 10a, that low MAS - low FEM boys rate their fathers

Table 18

Means, Standard Deviations, and t Ratios of High Creativity Versus Low Creativity Groups for the Schaefer Father Scales

Schaefer father scale	Creativity group: High (N = 18) $\bar{x}$	S.D.	Low (N = 18) $\bar{x}$	S.D.	t	p
1. Acceptance	20.94	6.70	21.22	4.48	0.79	ns
2. Childcenteredness	9.17	3.29	9.11	3.43	1.07	ns
3. Possessiveness	7.00	3.05	7.17	2.53	-0.16	ns
4. Rejection	11.00	7.06	11.89	6.72	-0.05	ns
5. Control	8.56	2.23	9.39	3.38	-2.19	<.025
6. Enforcement	7.39	3.29	7.50	3.11	0.09	ns
7. Positive Involvement	17.28	5.97	18.00	5.60	0.89	ns
8. Intrusiveness	8.67	4.87	8.17	3.26	1.00	ns
9. Control Through Guilt	7.06	2.86	6.06	2.64	0.31	ns
10. Hostile Control	16.00	6.24	17.39	5.73	-0.42	ns
11. Inconsistent Discipline	6.44	3.58	5.94	3.57	0.22	ns
12. Nonenforcement	5.94	3.57	5.50	2.98	0.50	ns
13. Acceptance of Individuation	17.78	5.20	18.33	4.59	-0.44	ns
14. Lax Discipline	5.78	3.54	6.28	2.70	-0.33	ns
15. Instilling Persistent Anxiety	6.33	3.07	6.50	3.11	-0.24	ns
16. Hostile Detachment	11.17	8.63	11.61	7.30	-0.17	ns
17. Withdrawal of Relations	6.33	4.24	5.83	4.26	0.08	ns
18. Extreme Autonomy	5.67	4.66	4.89	2.87	0.24	ns

Table 19

Means, Standard Deviations, and t Ratios of High Creativity Versus Low Creativity Groups for the Schaefer Mother Scales

Schaefer mother scale	Creativity group: High (N = 18) $\bar{x}$	S.D.	Low (N = 18) $\bar{x}$	S.D.	t	p
1. Acceptance	24.94	4.45	24.50	3.52	0.89	ns
2. Childcenteredness	9.94	2.98	9.72	3.00	0.25	ns
3. Possessiveness	8.28	3.00	9.28	2.74	-0.22	ns
4. Rejection	12.50	7.54	11.78	6.19	0.34	ns
5. Control	8.72	2.05	8.89	2.42	-0.39	ns
6. Enforcement	7.50	3.29	7.67	2.57	-0.37	ns
7. Positive Involvement	18.67	4.44	19.94	5.30	-1.09	ns
8. Intrusiveness	9.11	2.85	8.94	2.07	1.03	ns
9. Control Through Guilt	7.72	3.18	6.89	2.35	-0.85	ns
10. Hostile Control	17.94	7.63	17.50	6.13	0.00	ns
11. Inconsistent Discipline	6.78	3.99	6.83	3.00	-1.12	ns
12. Nonenforcement	6.67	3.76	6.44	3.35	0.02	ns
13. Acceptance of Individuation	19.39	3.63	17.94	5.17	0.12	ns
14. Lax Discipline	8.00	2.97	8.00	3.45	-0.07	ns
15. Instilling Persistent Anxiety	7.39	3.36	7.50	2.57	-0.57	ns
16. Hostile Detachment	12.11	8.01	12.39	6.53	-0.12	ns
17. Withdrawal of Relations	6.67	3.45	5.56	3.84	0.37	ns
18. Extreme Autonomy	6.56	4.10	6.72	3.16	-0.45	ns

Table 20

Sex-Role Group Means and Analysis of Variance F Ratios for Schaefer Father Scales

(df = 3,66)

Schaefer father scale	Sex-role group mean: High MAS-high FEM (N = 22)	Low MAS-high FEM (N = 10)	High MAS-low FEM (N = 14)	Low MAS-low FEM (N = 24)	F	p
1. Acceptance	21.59	20.90	23.00	19.62	.91	ns
2. Childcenteredness	9.50	9.20	9.57	8.04	.92	ns
3. Possessiveness	7.68	7.10	6.71	7.29	.33	ns
4. Rejection	10.36	12.80	9.57	12.38	.84	ns
5. Control	9.41	8.30	8.71	8.79	.36	ns
6. Enforcement	7.68	7.50	6.43	8.04	.94	ns
7. Positive Involvement	18.50	15.70	18.29	16.08	1.12	ns
8. Intrusiveness	8.82	7.50	8.00	8.46	.33	ns
9. Control Through Guilt	7.27	7.60	7.00	6.62	.30	ns
10. Hostile Control	17.04	15.80	14.86	15.96	.44	ns
11. Inconsistent Discipline	5.32	6.90	7.43	7.54	2.01	ns
12. Nonenforcement	5.50	5.60	5.07	6.50	.68	ns
13. Acceptance of Individuation	18.09	16.90	20.71	17.04	1.84	ns
14. Lax Discipline	4.95	5.90	5.64	6.00	.54	ns
15. Instilling Persistent Anxiety	6.36	6.20	7.07	6.29	.21	ns
16. Hostile Detachment	10.09	12.00	7.93	12.92	1.54	ns
17. Withdrawal of Relations	5.36	7.10	5.71	5.92	.49	ns
18. Extreme Autonomy	4.41	6.90	6.07	5.71	1.49	ns

Table 21

Sex-Role Group Means and Analysis of Variance F Ratios for Schaefer Mother Scales

(df = 3,66)

Schaefer mother scale	Sex-role group mean: High MAS-high FEM (N = 22)	Low MAS-high FEM (N = 10)	High MAS-low FEM (N = 14)	Low MAS-low FEM (N = 24)	F	p
1. Acceptance	22.50	23.80	25.21	23.88	.72	ns
2. Childcenteredness	8.86	10.00	10.79	9.67	1.28	ns
3. Possessiveness	8.00	9.30	8.43	8.46	.48	ns
4. Rejection	12.86	14.30	10.14	12.83	.87	ns
5. Control	8.91	9.20	8.57	9.46	.28	ns
6. Enforcement	7.41	7.80	6.57	8.50	1.36	ns
7. Positive Involvement	18.86	16.40	19.36	19.62	.90	ns
8. Intrusiveness	9.23	8.70	9.57	8.71	.38	ns
9. Control Through Guilt	7.54	8.40	5.93	7.83	1.65	ns
10. Hostile Control	16.45	18.30	16.29	19.29	1.02	ns
11. Inconsistent Discipline	6.23	6.90	7.64	6.75	.51	ns
12. Nonenforcement	6.09	7.60	6.36	6.04	.50	ns
13. Acceptance of Individuation	18.50	17.90	19.86	17.67	.63	ns
14. Lax Discipline	7.09	8.40	8.07	7.42	.47	ns
15. Instilling Persistent Anxiety	7.14	7.10	6.21	7.25	.33	ns
16. Hostile Detachment	11.82	12.10	10.79	12.29	.14	ns
17. Withdrawal of Relations	5.82	7.20	6.50	6.17	.31	ns
18. Extreme Autonomy	5.86	7.40	7.07	6.21	.69	ns

high on rejection and hostile detachment; Hypothesis 10b, that this same group rate their mothers high on these same variables.

In summary, none of the hypotheses concerning the Schaefer scales, whether the indopendent variable be creativity or sex role, was supported.

Results of additional analyses. Because of the failure to achieve significant results using the individual parent scales, various individual scales were standardized and combined to form global scales measuring positive qualities, negative qualities, and neurotic qualities (as discussed earlier and as listed in Appendix I). It was felt that the small number of items (8 or 16) on each scale could have precluded the formation of distributions having a sufficiently wide spread of scores to allow statistically significant differentiations between groups of Ss. For this reason the derived parent scales rather than the individual parent scales were employed in the correlation matrix. Another reason was that the derived scales had higher reliability coefficients than the individual scales (see Tables 3 and 13).

The correlation matrix (see Table 17) included intelligence, age, and socio-economic status measures, various measures from the Play and Game List, creativity score, derived parent scales, and personality measures.

Femininity was negatively correlated with VIQ and TIQ but not with PIQ. Although at first glance this might suggest that boys of higher intelligence tend to eschew feminine interests, the

extreme skewness of the FEM distribution casts some doubts upon the validity of these relationships. A Chi-square test of the relationship (see Table 22) failed to achieve significance. The positive correlation between DIFF, another way of measuring sex role, and VIQ, PIQ, and TIQ provides stronger evidence for such an interpretation, and the correlation between MA and DIFF falls just short of statistical significance. The negative correlation between CA and DIFF suggests that older boys strive after masculine activities and avoid or deny feminine interests. M+ and M- scores are both negatively correlated with the I.Q. measures as will as with MA. M- correlations are more negative than the M+ correlations, particularly in the case of PIQ where the difference is highly significant ($t = 12.76$, $df = 69$, $p < .005$ or better, one-tailed test). The strong negative correlations between P- and VIQ, PIQ, TIQ, and MA are probably due in main to the influence of the mother, since no significant correlations exist in the case of the F- score. Results also indicate that brighter children are less test anxious (TA), and less defensive (DEF) than their less intelligent counterparts.

SES was not significantly correlated with any of the variables listed in the matrix.

The positive correlation between MAS and F+ suggests that father nurturance facilitates development of masculine interests. Negative paternal qualities (F-) apparently are not as important, nor are the attitudes of the mother (M+ and M-). It would appear

Table 22

Chi-Square Analysis of Relationship Between Femininity and Variables Listed in Correlation Matrix (Table 17)

(N = 70, df = 1)

Comparison variable	Cell description and frequency				X^2	p
MAS	Low FEM-low MAS	Low FEM-high MAS	High FEM-low MAS	High FEM-high MAS		
	24	14	10	22	5.86	<.02
TIQ	Low FEM-low TIQ	Low FEM-high TIQ	High FEM-low TIQ	High FEM-high TIQ		
	16	22	19	13	1.44	ns
SES	Low FEM-low SES	Low FEM-high SES	High FEM-low SES	High FEM-high SES		
	22	16	16	16	.18	ns
CR	Low FEM-low CR	Low FEM-high CR	High FEM-low CR	High FEM-high CR		
	20	18	15	17	.06	ns
F+	Low FEM-low F+	Low FEM-high F+	High FEM-low F+	High FEM-high F+		
	22	16	13	19	1.44	ns
F-	Low FEM-low F-	Low FEM-high F-	High FEM-low F-	High FEM-high F-		
	18	20	17	15	.06	ns

(Continued)

Table 22, Continued

Comparison variable	Cell description and frequency				X^2	p
M+	Low FEM- low M+	Low FEM- high M+	High FEM- low M+	High FEM- high M+		
	17	21	18	14	.52	ns
M-	Low FEM- low M-	Low FEM- high M-	High FEM- low M-	High FEM- high M-		
	18	20	17	15	.06	ns
FN	Low FEM- low FN	Low FEM- high FN	High FEM- low FN	High FEM- high FN		
	19	19	16	16	.06	ns
ANX	Low FEM- low ANX	Low FEM- high ANX	High FEM- low ANX	High FEM- high ANX		
	20	18	13	19	.58	ns
TA	Low FEM- low TA	Low FEM- high TA	High FEM- low TA	High FEM- high TA		
	23	15	13	19	2.02	$<.15$
DEF	Low FEM- low DEF	Low FEM- high DEF	High FEM- low DEF	High FEM- high DEF		
	19	19	16	16	.06	ns

that the positive relationship between MAS and P+ is probably due in main to the influence of the father. In contrast to the MAS variable, the DIFF variable is positively correlated with both F+ and F- but not with M+ or M-. It would appear that having a salient father is related to seeking masculine interests and eschewing feminine interests. The positive correlations between DIFF and ANX and TA suggests that the boys who scored higher in masculinity may be actively striving to be masculine and that they may feel some pressure exerted upon them in this direction.

Because of the extreme skewness of the FEM distribution (the mode was at 0) and the resulting doubts concerning the validity of the various FEM correlations, the relationship between FEM and certain of the variables was analyzed by means of Chi-square. Results are presented in Table 22. There was a tendency for Ss to be either high in MAS and FEM or low in both ($X^2 = 5.86$, df = 1, $p < .02$). This level of significance was slightly less than that obtained by the correlation technique. There appeared to be a tendency, although not significant ($X^2 = 2.02$, df = 1), for Ss to be low in both FEM and TA or high in both; apparently the more feminine interests that a boy has, the more concerned he is about his performance. Thus, the correlation coefficient of .35 is somewhat inflated. Chi-square analysis also indicated that the correlation between FEM and ANX was inflated and not significant. The relationship between FEM and

intelligence has already been discussed.

With the exception of a negative correlation with TA, which suggests that the more creative Ss are less concerned with how they will perform or be evaluated by others, there were no significant relationships between CR and any of the other variables.

General anxiety (ANX) was positively correlated with having a possessive, controlling, intrusive father (FN). Ss higher in TA rated their mothers high in negative qualities (M-). The positive correlation between TA and P- is probably due in main to the contribution of the mother. DEF was positively correlated with M+ and M-, with P-, but not with F+ or F-. The P- score most likely reflects the M- score. It would appear that Ss who were high in DEF had salient mothers but not salient fathers.

T-tests were performed on the 11 most creative Ss versus the 12 least creative Ss for most of the variables listed in the correlation matrix. Mean CR score for the entire subject population of 70 was 0.00 with a standard deviation of 3.72. The median was approximately -1.25. Range of the top 11 Ss was in the interval lying between 2.00 and 19.50, whereas the range of the bottom 12 Ss was in the interval lying between -2.50 and -4.00. Thus, there were several extremely creative Ss but not several extremely uncreative Ss. Of the variables tested, the only significant difference in means between the two creativity groups was in the case of TA; the high creative group scored

Table 23

Means, Standard Deviations, and t Ratios of Extreme High Creativity Versus Extreme Low Creativity Groups for Pertinent Variables

Variable	Extreme creativity group: High (N = 11) $\bar{x}$	S.D.	Low (N = 12) $\bar{x}$	S.D.	t	p
TIQ	107.64	13.58	105.00	11.42	0.50	ns
SES	4.09	1.45	3.75	1.60	0.53	ns
MAS	14.91	2.77	15.17	4.73	-0.16	ns
FEM	2.54	2.84	2.92	1.98	-0.37	ns
SEX	17.45	3.48	18.03	6.27	-0.29	ns
DIFF	12.36	4.41	12.25	3.62	0.07	ns
LIKE	63.36	21.43	60.50	20.17	0.33	ns
F+	0.58	2.34	-0.30	3.09	0.76	ns
F-	0.83	1.90	0.82	3.19	0.00	ns
M+	-1.07	7.26	-1.15	5.74	0.03	ns
M-	-1.29	7.23	-0.56	5.72	-0.27	ns
FN	0.11	1.83	0.45	1.93	-0.43	ns
P+	1.40	3.44	0.52	5.12	0.48	ns
P-	-2.36	13.66	-1.71	11.11	-0.13	ns
ANX	7.64	3.98	9.17	2.29	-1.14	ns
TA	6.00	2.68	11.17	4.63	-3.23	$<.005$
DEF	11.91	3.27	12.08	2.58	-0.14	ns

significantly lower ($t = -3.23$, $df = 21$, $p < .005$, one-tailed test). Means, standard deviations, and t-values for the various variables are listed in Table 23.

A number of variables were analyzed in the following 2 x 2 analyses of variance ($N = 70$, df=1,1,1,66):

FEM x MAS
F+ x MAS
CR x TIQ
F+ x ANX
MAS x ANX
FEM x ANX
F+ x M+
F+ x F-.

Results were as follows:

FEM x MAS: High MAS Ss had fathers more positive than those of low MAS Ss ($p < .10$), high FEM Ss were more anxious than low FEM Ss ($p < .025$), high FEM Ss were more test anxious than low FEM Ss ($p < .10$).

F+ x MAS: High F+ Ss were more test anxious than low F+ Ss ($p < .10$), high F+ Ss were more defensive than low F+ Ss ($p < .10$).

CR x TIQ: High TIQ Ss had larger difference scores on the Play and Game List than did the low TIQ Ss ($p < .10$), mothers of low TIQ Ss were more positive than those of high TIQ Ss ($p < .002$), mothers of low TIQ Ss were more negative than those of high TIQ Ss ($p < .001$), parents of low TIQ Ss were more negative than those of high TIQ Ss ($p < .001$), low TIQ Ss were more test anxious than high TIQ Ss ($p < .05$), low TIQ Ss were more defensive than

high TIQ Ss ($p < .025$).

F+ x ANX: High F+ Ss were more masculine than low F+ Ss ($p < .05$), high F+ Ss liked more items on the Play and Game List than did the low F+ Ss ($p < .10$).

MAS x ANX: Low MAS - high ANX Ss were more creative than low MAS - low ANX Ss and high MAS - high ANX Ss ($p < .10$), fathers of high MAS Ss were more positive than those of low MAS Ss ($p < .10$).

FFM x ANX: No significant results were obtained for this analysis.

F+ x M+: High F+ Ss were more masculine than low F+ Ss ($p < .10$), high F+ Ss liked more sex-typed items than did low F+ Ss ($p < .10$), high F+ Ss liked more items on the Play and Game List than did the low F+ Ss ($p < .10$), high F+ Ss were more test anxious than low F+ Ss ($p < .01$), low M+ Ss were more test anxious than high M+ Ss ($p < .10$), high F+ Ss were more defensive than low F+ Ss ($p < .10$).

F+ x F-: High F+ Ss were more masculine than low F+ Ss ($p < .10$), high F+ Ss liked more sex-typed items than did low F+ Ss ($p < .10$), Ss with less negative fathers had higher TIQ's than Ss with more negative fathers ($p < .005$), high F+ Ss were more test anxious than low F+ Ss ($p < .05$), Ss with more negative fathers were more test anxious than Ss with less negative fathers ($p < .10$), high F+ Ss were more defensive than low F+ Ss ($p < .10$), Ss with more negative fathers were more defensive than Ss with

less negative fathers ($p < .025$).

Chi-square analyses were performed upon the eight sets of measures used as the independent variables in the analyses of variance just described. Purpose was to ascertain statistically whether certain combinations of these variables occurred more frequently than others. It was found that Ss tended to be high MAS and high FEM or low MAS and low FEM ($X^2 = 5.86$, df = 1, $p < .02$), to be high F+ and high MAS or low F+ and low MAS ($X^2 = 2.80$, df = 1, $p < .10$), and to have both parents high in positive qualities or both parents low in positive qualities ($X^2 = 8.23$, df = 1, $p < .01$).

CHAPTER FOUR

DISCUSSION

Although there were some clear-cut results, nevertheless the predicted relationships between the three major variables (i.e., creativity, sex role, and parental behavior) were not obtained or were obtained only in an indirect manner. The question arises as to why there was a lack of support for such predictions.

The creativity measure appears to have been an internally consistent and highly reliable instrument. Unfortunately, it measured only verbal creativity. Ramifications of this limitation will be discussed later. Nevertheless, the creativity instrument seems well-suited for use in future investigations. The sex-role measure, however, presents a somewhat different picture.

The population norms obtained in the present study differ considerably from those obtained by Rosenberg and Sutton-Smith in their revalidation (1964) of the Play and Game List. Four populations from different geographic regions were employed. Means, standard deviations, and N's for the Rosenberg and Sutton-Smith revalidation and the present study are presented in Table 24. Mean masculinity score for the Rosenberg and Sutton-Smith sample as a whole was 18.76 with an average standard deviation of 4.23. Individual sample means ranged from 17.65 to 20.02

Table 24

Comparison of Masculinity and Femininity Data Obtained in the Present Study with the Rosenberg and Sutton-Smith Play and Game List Norms

Masculinity						
	Rosenberg and Sutton-Smith			Present study		
Sample	N	$\bar{x}$	S.D.	N	$\bar{x}$	S.D.
1	159	20.02	4.32	70	15.36	4.56
2	294	17.65	4.24			
3	332	18.21	4.28			
4	267	19.14	4.09			
Average		18.76	4.23			

Femininity						
	Rosenberg and Sutton-Smith			Present study		
Sample	N	$\bar{x}$	S.D.	N	$\bar{x}$	S.D.
1	159	9.20	4.93	70	2.78	2.79
2	294	6.55	4.73			
3	332	7.86	5.28			
4	267	6.51	4.72			
Average		7.53	4.66			

and the four frequency distributions appeared normal. In contrast, the mean masculinity score for the present study was 15.36 with a standard deviation of 4.56. This difference may result from the fact that whereas the present study employed only fifth-grade Ss, Rosenberg and Sutton-Smith's sample was composed of grades three through six all lumped together. This slight difference might be explained in terms of age differences; for example, some of the masculine games in Rosenberg and Sutton-Smith's Play and Game List may be more appropriate for younger children. The masculinity scores obtained in the present study were widely and normally distributed, qualities which usually facilitate statistical analysis.

On the other hand, the distribution of feminity scores had properties which made statistical analysis more difficult. The frequency distribution was highly skewed; the mode (N = 15) was 0 and less than half (N = 32) of the total Ss (N = 70) indicated that they play more than two of the feminine games listed. The femininity mean score (see Table 24) for the present study was 2.78 with a standard deviation of 2.79. Only three Ss received a score of 5, and only one S apiece scored 8, 9, 10, 11, and 13. There were vast differences between the norms of the present investigation and those of the Rosenberg and Sutton-Smith (1964) study. Of the four Rosenberg and Sutton-Smith samples, the highest mean was 9.20 while the lowest was 6.51. Standard deviations ranged from 4.72 to 5.28. Frequency distributions

appeared normal. By contrast, only 11% of the Ss in the present study scored above the lowest Rosenberg and Sutton-Smith sample mean. Also, the shape of the frequency distributions was drastically different: in comparison to the bell-shape of the Rosenberg and Sutton-Smith frequencies, the curve for the present study looked like the right half of a normal distribution.

The question arises as to why this great discrepancy occurred. Several speculations can be made. The Rosenberg and Sutton-Smith study employed Ss in grades 3 through 6. Rather than norms for individual grades being presented, the scores for all four grades were combined and an average was obtained. Because cognitive processes are in a continual state of development throughout the age range on which the norms were obtained (Piaget, 1952), it seems quite likely that a boy becomes more and more aware of sex-role differences as a function of age. Indeed, Kohlberg (1966) has advanced such a proposal. The logical deduction from a cognitive approach to sex-role development would be that a boy becomes more aware with age of the masculinity or femininity of interests and activities. If it is assumed that all boys in a given age sample will be at roughly the same level of cognitive development, the Ss in the sample would have roughly the same degree of awareness of sex-typing of interests. The result would probably be a considerable amount of peer group pressure to conform in the masculine direction. Thus, a fifth-grade boy, by virtue of his advanced cognitive development, would be more aware of the

masculinity or femininity of his interests, and would be under greater peer group pressure to be masculine, than would a third- or fourth-grade boy. This may in part account for the peculiar femininity distribution obtained in the present investigation.

Speculating further about the effects of peer group pressure, the fact that the Play and Game List was group administered may have resulted in denial of some feminine interests. Although the Ss were seated far enough apart so that they could not see each other's answer sheets, the presence per se of classmates who knew the Ss well and who were well known to the Ss, could have caused considerable defensiveness. It would have been wise, in retrospect, to have utilized a less obvious instrument to measure sex role. The notion of obviousness also raises the possibility that Ss who in actuality had fewer masculine interests than the group as a whole may have become quite defensive and over-compensatory, with the result that their masculinity measure was inflated.

Sex of the examiner (male) may have also had an effect, as may have had the Ss fantasies about why they were being tested and what was going to be done with the results. If would be interesting to have had another group of 70 Ss who received the Play and Game List administered by a female E. A worthwhile investigation could involve a comparison between individual and group administration as well as the consideration of the effects of sex of E. Size of group during test administration could also be

taken into account.

Biller, Singer, and Fullerton (1969) studied creativity as a dependent variable of sex-role identification and sex-role preference. The former was measured by figure drawings and choice procedures involving various "pretend" statements while the latter was measured by toy and game choices. Consistent with the present study, no main effect was found for sex-role preference. Neither was a main effect found for sex-role identification. An interaction effect (i.e., high orientation and low preference, or the converse), however, was found. The investigators speculated that boys with discrepant sex-role patterns may have a wider range of experiences available. For example, a boy might "feel like" his father but also have a sister or mother with whom he engages in feminine activities which he enjoys. Another interpretation put forth was that Ss with mixed sex-role patterns may be in considerable conflict, and that this conflict energizes wider ranges of cognitive activity. It would seem important to include an orientation measure as well as a preference measure in any future studies involving sex role and creativity. Ratings of Ss' sex-typed behavior by an older person who has frequent contact (an adoption measure) with him, such as a teacher, might also be included.

Because of the extremely low scores and the odd distribution of the femininity scale in the present study, as well as the possibility that some masculinity scores may have been inflated,

at least two preference measures should be included in future studies. The fact that Ss may be defensive about the masculinity or femininity of their games, interests, and activities provides further reason why adoption measures by teachers or other observers are indicated. Indeed, it may be that the preference measures might be providing a more valid measure of defensiveness than of sex-typed behavior.

Some word is also in order regarding the meaningfulness of the Schaefer scales. Although the 18 scales are supposedly factorially pure and empirically derived, these advantages may have been offset by the brevity of each scale and by the 0-, 1-, or 2-point response alternatives. The 16-item scales were generally more reliable than the 8-item scales. Although the split-half reliability coefficients ranged from acceptable to good for measures containing such a small number of items, they were not as high as one would desire for use in a major study. This was one of the reasons for the decision to utilize derived scales.

The Schaefer scales could be answered "like," "somewhat like," or "not like." Some of the Ss seemed to be extreme responders while others tended to regress toward the mean. Regression toward the mean appears to have occurred more frequently than extreme responding. Thus, many Ss' responses were probably less intense than the home situation warrented. A forced choice ("like" or "not like") method of responding would

preclude regression toward the mean and hence would seem preferable to a tripartate choice for future investigations.

In terms of the present findings the hypotheses concerning creativity and parental behavior may be viewed with considerable reservation. Whereas the use of derived parent scales resulted in significant findings in the case of parental behavior and sex role, the use of these derived scales was not helpful in attempting to relate parental behavior to creativity. The large parental behavior variance within the high and low creativity groups suggests that perhaps creativity is not the product of any one particular parental behavior pattern. The present study has assumed that a creative child comes from a stable, nurturant family situation. By contrast, it seems to be an idea commonly held by the general public that creative individuals come from disturbed or unhappy home situations. This notion is based upon a global approach to creativity and includes as examples many notable poets and artists. The actual state of affairs may be that some individuals are creative because they have been encouraged to express their individuality, while other individuals may be creative because they come from an unpleasant, anxiety-arousing home situation. In the latter case, the anxiety and possible insecurity might serve to heighten the individual's awareness of and sensitivity to the world around him. Such a suggestion is consistent with the findings of the Biller, Singer, and Fullerton (1969) study.

The present study employed only verbal measures of creativity. Mednick (1962), upon whose theoretical formulations the present study is based, has speculated that there may be several types of creativity. In addition, the three-dimensional model of the intellect proposed by Guilford (1965) suggests various types of creativity. Several studies (Getzels & Jackson, 1962; Torrance, 1960, 1962; Wallach & Kogan, 1965) have employed a composite measure of creativity (i.e., verbal and non-verbal creativity) rather than focusing upon one type of creativity as was done in the present study. If possible, future investigations concerned with the antecedents and correlates of creativity should employ several measures; perhaps some facets of non-verbal creativity may be more related to particular types of parental behaviors than is verbal creativity. In addition, it might be fruitful to relate various combinations of different types of creativity to parental variables.

The assumption is made in the present study that creativity is randomly distributed throughout the population. Guilford (1965) also views creativity as randomly distributed. Rather than employing an S-R framework, however, he views creativity as the mutual occurrence of several traits, each of which is randomly distributed throughout the total population. Torrance (1960, 1962) also tends to view creativity as randomly distributed. Moreover, he feels that the American educational system stifles creative potential. All children possess innate creative potential and

this potential can be enhanced or hindered. Indeed, the notion of values seems to be involved; it is almost as if every American child is born free, equal, and creative. The question of an extremely creative person such as a Mozart or a Da Vinci is not discussed by these investigators.

Perhaps such a person is genetically endowed with vast creative potential. Although the creative potential of other people may be enhanced by various means, such a person might still be greatly superior due to some innate individuality.

One S in the present investigation was so much more creative (CR = 19) than any of the other Ss, that in some ways his case seems to be an exception to the notion of a normal distribution. Indeed, in a way it does not seem justified to merely lump him with the other Ss; he merits separate description. This boy was 11 years, 0 months, and had an I.Q. of 115. He came from a lower middle class background and his mother worked part-time as a waitress. In terms of the sex-role groupings he was low MAS - low FEM (MAS = 13, FEM = 0). His scores on the various measures of anxiety and defensiveness were not unusual, but his general anxiety was somewhat above average. His scores on the parent perception measures were not atypical, but he seemed to view his mother as relatively unsalient. This highly creative boy's background would seem more to fit the popular stereotype than the model hypothesized for the present study. One can imagine a boy who may feel neglected or rejected, who does not participate in

a large number of activities (and hence, it can be conjectured, may spend considerable time pondering), and in whom the presence of anxiety facilitates the creative processes. This S impressed the E as observant, curious, intelligent, confident, enthusiastic, and thoughtful rather than impulsive.

The vast differences between this boy and the rest of the subject population also lead to questions regarding the extreme groups analyses employed in the study. Because the difference between this boy and the second most creative S was greater than the difference between the second most creative S and the least creative S one can speculate as to actually how meaningful was the difference in CR scores between the high creative group and the low creative group. Perhaps it would be appropriate in future studies to employ a much larger sample and to select the high creative group on the basis of outstanding accomplishment or some other external criterion as did MacKinnon (1962). Such a criterion could be creative accomplishment in art, English composition, music, etc. If a large sample were employed, a comparison could be made regarding the efficacy of a traditional extreme groups approach (top 25% versus bottom 25%), versus an experimental design based upon actual creative accomplishment.

Although a number of the hypothesis tested in this study were not verified, the relationship between masculinity of a boy's interests and perceived nurturance of his father was quite outstanding. This relationship was manifested by three different

statistical techniques: correlation, analysis of variance, and Chi-square. Results of the present study are consistent with a number of other investigations reviewed by Biller and Borstelmann (1967) which indicate that father nurturance facilitates masculine development.

Before the topic of nurturance is discussed, the term should be clarified. In most studies and in most theoretical literature nurturance is an all-encompassing term used to describe the mother's or father's satisfaction of the child's emotional needs. By contrast, the present study employs the term "nurturance" in a narrower sense. Four parental scales (Acceptance, Childcenteredness, Positive Involvement, and Acceptance of Individuation) which appeared to measure positive qualities were found empirically to be strongly intercorrelated. Although the term "nurturance" was used to describe the entity measured by these four scales, numerous other scales describing positive parental behaviors could have been constructed and included. It would be interesting, for example, to include amount of time spent by the parents with the S versus that with his various siblings, how perceptually aware are the parents of the child's needs, how developed and refined are the parents' empathic qualities per se, etc. Thus, when nurturance is described with regard to the present study, it must be kept in mind that the term is empirical, operationally defined, and fairly limited in breadth.

Social learning theory (Bandura & Walters, 1963; Mischel,

1966) would appear to provide a reasonable explanation for this relationship. Assuming that the father is masculine, a nurturant father by definition would more frequently reward the approach responses of his son, which in turn would provide further opportunities for the son to observe and imitate various of his father's actions. Because the behavior of a nurturant father is more often associated with positive reinforcement, it increases in reward value. Consequently, a boy with a nurturant father is provided with more incentive toward imitation than is a boy with a non-nurturant father. Also, a nurturant father would be more likely to reward his son for imitating him.

The present study yielded a significant positive correlation between DIFF and both F+ and F- whereas in the case of MAS there was a significant correlation with F+ but not with F-. Although these two measures of sex role are in some ways different from each other, it would appear that perhaps positive paternal qualities are more important than negative paternal qualities in determining a boy's masculine development.

The present study suggests that maternal influences, at least at this age level, are not as important to a boy's masculine development as are paternal influences. Part of the reason for this may be that the presence of a father generally serves to hinder maternal overprotection. Maternal overprotection could be manifested by an extreme in either positive qualities (e.g., excessive child centeredness or excessive positive involvement

to the point of being intrusive) or negative qualities (e.g., instilling persistent anxiety). Counteracting the motherly tendency to overprotect her child would be the fact that most fathers are quite adament regarding coddling by the mother as well as the fact that fathers generally provide the child with models of independent, nonsubmissive behavior.

Verification of the null hypothesis with regard to the relationship between creativity and intelligence is consistent with previous studies (Wallach & Kogan, 1965; Biller, Singer, & Fullerton, 1969) which employed a test-free, game-like atmosphere in contrast to studies in which creativity was literally "tested" (Torrance, 1960; Yamamoto, 1964a, 1964b, 1964c). Thus, further support is given the contention that Ss who are actually not extremely creative may, in a timed test, respond at a faster rate than their creative counterparts and may appear "smarter." It would seem possible that a child with a high I.Q. might be accustomed to achieving quite rapid closure on cognitive tasks in general (i.e., he finishes tests quickly, responds in class quickly and without hesitation in the classroom situation, etc.). This tendency, in turn, would probably also be manifested on a typical creativity "test" where the goal is to produce as many responses as possible in a given amount of time.

Of considerable interest are the negative correlational findings between M+, M-, and VIQ, PIQ, and TIQ. It appears that intellectual development can be hindered by an extremely nurturant

mother as well as by a rejecting mother. Although the latter is readily understandable, the former would appear to require some explanation. An extremely nurturant mother may hinder her son's development of competence and resulting self-confidence. In other words, such a boy would be accustomed to having someone (i.e., his mother) do a good part of his thinking for him. To an extent, motivation for development of convergent thinking, divergent thinking, reasoning, learning of factual information, etc., would be lessened. It would appear that the brightest children have mothers who are neither too nurturant nor too rejecting. The relationship between maternal child-rearing behavior is quite statistically significant in the case of performance intelligence (PIQ); negative maternal behaviors seem to pull down performance I.Q. much more than do positive maternal behaviors.

Possibly this can be attributed to the nature of the I.Q. test. The findings also, in some ways, seem to be consistent with studies (Carlsmith, 1964; Maccoby, 1966) in which length of early father-absence was shown to be related to feminine patterning (Verbal higher than Mathematical) on aptitude test scores; having a very salient mother may lessen the father's potential influence.

The fact that creative Ss scored low in test anxiety would seem quite plausible in that lack of anxiety about how one is performing or being evaluated would result in greater cognitive freedom. Boys high in intelligence apparently tend to be low in

TA and DEF. A high degree of concern about one's performance on a given test (i.e., an I.Q. test) tends to lower the actual performance. It has been shown, in fact, that TA score is a function of the content and context of an I.Q. test (Zweifelson, 1956). The relationship between I.Q. and ANX in the present study was negative but failed to attain statistical significance.

Of interest is the finding that ANX and TA are related to sex role. Boys who are high in femininity of interests appear to have a considerable amount of anxiety, as opposed to boys whose number of masculine interests far exceeds their number of feminine interests. Results of the present study appear to be consistent with other research (Rosenberg & Sutton-Smith, 1960, 1961). The present study also suggests that having a salient father, whether his qualities be predominately positive or negative, leads to increased TA and DEF. This relationship between anxiety measures and father salience, however, is difficult to reconcile with the relationship between anxiety measures and sex-role measures.

It may be that boys with salient fathers are provided with masculine models to imitate, and feel that implicit or explicit demands are being made upon them to act in a masculine fashion. This might result in concern as to how they will be judged. At the same time, however, a masculine orientation would seem to predispose such boys to masculine preference and adoption, which suggests that they feel secure in their masculine role, particularly

if a developmental framework is assumed. Because of the differing degrees of importance of sex-role orientation, preference, and adoption at various age levels (Biller & Borstelmann, 1967), it must be remembered that, strictly speaking, results of the present study are applicable only in regard to the sex-role preferences of fifth-grade boys. More research is necessary if we are to satisfactorily describe the relationships among sex role, parental behavior, and anxiety, particularly within a developmental framework.

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APPENDIX A

Wallach and Kogan Verbal Creativity Tasks

Instances:

1. Name all the round things you can think of.
2. Name all the things you can think of that will make a noise.
3. Name all the square things you can think of.
4. Name all the things you can think of that move on wheels.

Alternate Uses:

1. Tell me all the different ways you could use a newspaper.
2. Tell me all the different ways you could use a knife.
3. Tell me all the different ways you could use an automobile tire--either the tube or the other part.
4. Tell me all the different ways you could use a cork.
5. Tell me all the different ways you could use a shoe.
6. Tell me all the different ways you could use a button--the kind that is used on clothing.
7. Tell me all the different ways you could use a key--the kind that is used in doors.
8. Tell me all the different ways you could use a chair.

APPENDIX B

Verbal Creativity Tasks Employed in the Present Study

Instances:

1. Name all the red things you can think of.
2. Name all the round things you can think of.
3. Name all the things you can think of that will make a noise.
4. Name all the square things you can think of.
5. Name all the things you can think of that move on wheels.

Alternate Uses:

1. Tell me all the different ways you could use a newspaper.
2. Tell me all the different ways you could use a knife.
3. Tell me all the different ways you could use an automobile tire—either the tube or the other part.
4. Tell me all the different ways you could use a shoe.
5. Tell me all the different ways you could use a chair.

APPENDIX C

Rosenberg and Sutton-Smith Play and Game List

PLAY AND GAME LIST

NAME _____ AGE _____ GRADE _____

SEX _____ SCHOOL _____ TEACHER _____

Here are a lot of games. Mark only the games that you play now. If you like a game put a mark under the LIKE opposite to that game. If you do not like that game put a mark under the DISLIKE opposite to that game. Thus each game you have played will be followed by:

L D or L D

Games you have not played will not be marked.

1. dolls			31. poison tag			61. spin tops			
2. dressing-up			32. kick the can			62. walk on stilts			
3. houses			33. frozen tag			63. fly kites			
4. store			34. ring around the rosy			64. bows and arrows			
5. school			35. London bridge			65. throw snowballs			
6. church			36. farmer in the dell			66. punt back			
7. doctors			37. hoki toki			67. wall dodge ball			
8. bandits			38. in and out the windows			68. king of the mountain			
9. soldiers			39. nuts in May			69. chicken			
10. cowboys			40. oranges and lemons			70. kick dodge			
11. horses			41. drop the handkerchief			71. Simon says, "Thumbs up."			
12. ghosts			42. huckle buckle beanstalk			72. charades			
13. cops and robbers			43. cobbler cobbler			73. spin the bottle			
14. cars			44. mulberry bush			74. I've got a secret			
15. inventors			45. muffin man			75. twenty questions			
16. actors			46. draw a bucket of water			76. name that tune			
17. actresses			47. hopscotch			77. poor pussy			
18. spacemen			48. jump rope			78. musical chairs			
19. tag			49. jacks			79. tail on the donkey			
20. hide and seek			50. hoops			80. hide the thimble			
21. blind man's buff			51. four square			81. bingo			
22. cat and mouse			52. seven up			82. I spy			
23. red rover			53. marbles			83. black magic			
24. puss in the corner			54. follow the leader			84. tic tac toe			
25. pom pom pullaway			55. prisoner's base			85. find the ring			
26. blackman			56. crack the whip			86. buzz			
27. fox and geese			57. tug-o-war			87. mother, may I?			
28. black Tom			58. roly poly			88. letters			
29. wood tag			59. leap frog			89. colors			
30. stoop tag			60. fox and hounds			90. redlight			

91. statues
92. initials
93. here I come, where from?
94. what time is it?
95. beast, bird or fish?
96. dog and bone
97. crows and cranes
98. dodgeball
99. steal the bacon
100. Kingsland
101. dominoes
102. parchesi
103. tiddley-winks
104. snap
105. cards

121. horseshoes
122. matching coins
123. beater goes round
124. capture the flag
125. two deep
126. ball tag
127. bowling
128. wrestling
129. baseball
130. soccer
131. football
132. tennis
133. basketball
134. volleyball
135. boxing

151. forfeits
152. draw or paint
153. make scrapbook
154. make collections
155. garden
156. dance
157. fish
158. hunt
159. sewing
160. toboggan
161. cooking
162. knit
163. crochet
164. use tools
165. handsprings

106. monopoly
107. scrabble
108. checkers
109. chess
110. puzzles
111. clue
112. naughts and crosses
113. darts
114. pick up sticks
115. billiards
116. pool
117. ping pong
118. shuffleboard
119. dice
120. quoits

136. handball
137. racing
138. swimming
139. shooting
140. skating
141. skiing
142. boating
143. horse-riding
144. bicycle-riding
145. bull in the ring
146. squirrel in the tree
147. post office
148. flashlight
149. perdiddle
150. kissing

166. camping
167. hiking
168. climbing
169. raise pets
170. make radio
171. make model airplanes
172. toy trains
173. see-saw
174. work with machines
175. cartwheels
176. stunts in gym
177. roller skating
178. building forts
179. building snowmen
180. clay modeling

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APPENDIX D

Key to Play and Game List Masculinity and Femininity Items

Masculine items			Feminine items		
8	65	158	1	30	49
9	113	164	2	34	87
10	128	168	3	35	156
13	129	170	4	36	159
14	131	171	5	38	161
18	133	172	6	41	162
53	135	174	16	44	163
64	139	178	17	47	175
	157			48	

APPENDIX E

Schaefer Parent Perception Scales and Questionnaire Items Comprising Each Scale

Schaefer scale	Questionnaire items
1. Acceptance	1, 13, 25, 37, 49, 61, 73, 85, 97, 109, 121, 133, 145, 157, 169, 181
2. Childcenteredness	2, 26, 50, 74, 98, 122, 146, 170
3. Possessiveness	14, 38, 62, 86, 110, 134, 158, 182
4. Rejection	3, 15, 27, 39, 51, 63, 75, 87, 99, 111, 123, 135, 147, 159, 171, 183
5. Control	4, 28, 52, 76, 100, 124, 148, 172
6. Enforcement	16, 40, 64, 88, 112, 136, 160, 184
7. Positive Involvement	5, 17, 29, 41, 53, 65, 77, 89, 101, 113, 125, 137, 149, 161, 173, 185
8. Intrusiveness	6, 30, 54, 78, 102, 126, 150, 174
9. Control Through Guilt	18, 42, 66, 90, 114, 138, 162, 186
10. Hostile Control	7, 19, 31, 43, 55, 67, 79, 91, 103, 115, 127, 139, 151, 163, 175, 187
11. Inconsistent Discipline	8, 32, 56, 80, 104, 128, 152, 176
12. Nonenforcement	20, 44, 68, 92, 116, 140, 164, 188
13. Acceptance of Individuation	9, 21, 33, 45, 57, 69, 81, 93, 105, 117, 129, 141, 153, 165, 177, 189
14. Lax Discipline	10, 34, 58, 82, 106, 130, 154, 178
15. Instilling Persistent Anxiety	22, 46, 70, 94, 118, 142, 166, 190
16. Hostile Detachment	11, 23, 35, 47, 59, 71, 83, 95, 107, 119, 131, 143, 155, 167, 179, 191
17. Withdrawal of Relations	12, 36, 60, 84, 108, 132, 156, 180
18. Extreme Autonomy	24, 48, 72, 96, 120, 144, 168, 192

APPENDIX F

Questionnaire Employed to Administer Schaefer Parent Perception Scales (Father)

	Like	Somewhat Like	Not Like
1. Makes me feel better after talking over my worries with him	L	SL	NL
2. Likes to talk to me and be with me much of the time	L	SL	NL
3. Isn't very patient with me	L	SL	NL
4. Sees to it that I know exactly what I may or may not do	L	SL	NL
5. Says I'm very good-natured	L	SL	NL
6. Wants to know exactly where I am and what I am doing	L	SL	NL
7. Decides what friends I can go around with	L	SL	NL
8. Soon forgets a rule he has made	L	SL	NL
9. Doesn't mind if I kid him about things	L	SL	NL
10. Is easy with me	L	SL	NL
11. Doesn't talk with me very much	L	SL	NL
12. Will not talk to me when I displease him	L	SL	NL
13. Seems to see my good points more than my faults	L	SL	NL
14. Doesn't let me go places because something might happen to me	L	SL	NL
15. Thinks my ideas are silly	L	SL	NL
16. Is very strict with me	L	SL	NL
17. Tells me I'm good looking	L	SL	NL
18. Feels hurt when I don't follow advice	L	SL	NL
19. Is always telling me how I should behave	L	SL	NL
20. Usually doesn't find out about my misbehavior	L	SL	NL
21. Enjoys it when I bring friends to my home	L	SL	NL
22. Worries about how I will turn out because he takes anything bad I do seriously	L	SL	NL
23. Spends very little time with me	L	SL	NL
24. Allows me to go out as often as I please	L	SL	NL

	Like	Some-what Like	Not Like
25. Almost always speaks to me with a warm and friendly voice	L	SL	NL
26. Is always thinking of things that will please me	L	SL	NL
27. Says I'm a big problem	L	SL	NL
28. Believes in having a lot of rules and sticking to them	L	SL	NL
29. Tells me how much he loves me	L	SL	NL
30. Is always checking on what I've been doing at school or at play	L	SL	NL
31. Keeps reminding me about things I am not allowed to do	L	SL	NL
32. Punishes me for doing something one day, but ignores it the next	L	SL	NL
33. Allows me to tell him if I think my ideas are better than his	L	SL	NL
34. Lets me off easy when I do something wrong	L	SL	NL
35. Almost never brings me a surprise or present	L	SL	NL
36. Sometimes when he disapproves, doesn't say anything but is cold and distant for a while	L	SL	NL
37. Understands my problems and my worries	L	SL	NL
38. Seems to regret that I am growing up and spending more time away from home	L	SL	NL
39. Forgets to help me when I need it	L	SL	NL
40. Sticks to a rule instead of allowing a lot of exceptions	L	SL	NL
41. Likes to talk about what he has read with me	L	SL	NL
42. Thinks I'm not grateful when I don't obey	L	SL	NL
43. Tells me exactly how to do my work	L	SL	NL
44. Doesn't pay much attention to my misbehavior	L	SL	NL
45. Likes me to choose my own way to do things	L	SL	NL
46. If I bread a promise, doesn't trust me again for a long time	L	SL	NL
47. Doesn't seem to think of me very often	L	SL	NL
48. Doesn't tell me what time to be home when I go out	L	SL	NL

	Like	Some-what Like	Not Like
49. Enjoys talking things over with me	L	SL	NL
50. Gives me a lot of care and attention	L	SL	NL
51. Sometimes wishes he didn't have any children	L	SL	NL
52. Believes that all my bad behavior should be punished in some way	L	SL	NL
53. Hugs and kisses me often	L	SL	NL
54. Asks me to tell everything that happens when I'm away from home	L	SL	NL
55. Doesn't forget very quickly the things I do wrong	L	SL	NL
56. Sometimes allows me to do things that he says are wrong	L	SL	NL
57. Wants me to tell him about it if I don't like the way he treats me	L	SL	NL
58. Can't say no to anything I want	L	SL	NL
59. Thinks I am just someone to "put up with"	L	SL	NL
60. Speaks to me in a cold, matter-of-fact voice when I offend him	L	SL	NL
61. Enjoys going on drives, trips or visits with me	L	SL	NL
62. Worries about me when I'm away	L	SL	NL
63. Forgets to get me things I need	L	SL	NL
64. Gives hard punishments	L	SL	NL
65. Believes in showing his love for me	L	SL	NL
66. Feels hurt by the things I do	L	SL	NL
67. Tells me how to spend my free time	L	SL	NL
68. Doens't insist that I do my homework	L	SL	NL
69. Lets me help to decide how to do things we're working on	L	SL	NL
70. Says some day I'll be punished for my bad behavior	L	SL	NL
71. Doesn't seem to enjoy doing things with me	L	SL	NL
72. Gives me as much freedom as I want	L	SL	NL

	Like	Some-what Like	Not Like
73. Smiles at me very often	L	SL	NL
74. Often gives up something to get something for me	L	SL	NL
75. Is always getting after me	L	SL	NL
76. Sees to it that I'm on time eoming home from school or for meals	L	SL	NL
77. Tries to treat me as an equal	L	SL	NL
78. Keeps a eareful eheck on me to make sure I have the right kind of friends	L	SL	NL
79. Keeps after me about finishing my work	L	SL	NL
80. Depends upon his mood whether a rule is enforeed or not	L	SL	NL
81. Makes me feel free when I'm with him	L	SL	NL
82. Exeuses my bad eonduet	L	SL	NL
83. Doesn't show that he loves me	L	SL	NL
84. Is less friendly with me if I don't see things his way	L	SL	NL
85. Is able to make me feel better when I am upset	L	SL	NL
86. Becomes very involved in my life	L	SL	NL
87. Almost always complains about what I do	L	SL	NL
88. Punishes me when I don't obey	L	SL	NL
89. Always listens to my ideas and opinions	L	SL	NL
90. Tells me how much he has suffered for me	L	SL	NL
91. Would like to be able to tell me what to do all the time	L	SL	NL
92. Doesn't check up to see whether I have done what he told me	L	SL	NL
93. Asks me what I think about how we should do things	L	SL	NL
94. Thinks and talks about my misbehavior long after it's over	L	SL	NL
95. Doesn't share many aetivities with me	L	SL	NL
96. Lets me go any place I please without asking	L	SL	NL

	Like	Some-what Like	Not Like
97. Enjoys doing things with me	L	SL	NL
98. Makes me feel like the most important person in his life	L	SL	NL
99. Gets cross and angry about little things I do	L	SL	NL
100. Believes in punishing me to eorreet and improve my manners	L	SL	NL
101. Often has long talks with me about the causes and reasons for things	L	SL	NL
102. Wants to know with whom I've been when I've been out	L	SL	NL
103. Is unhappy that I'm not better in school than I am	L	SL	NL
104. Only keeps rules when it suits him	L	SL	NL
105. Really wants me to tell him just how I feel about things	L	SL	NL
106. Lets me stay up late if I keep asking	L	SL	NL
107. Almost never goes on Sunday drives or picnics with me	L	SL	NL
108. Will avoid looking at me when I've disappointed him	L	SL	NL
109. Enjoys working with me in the house or yard	L	SL	NL
110. Usually makes me the eenter of his attention at home	L	SL	NL
111. Often blows his top when I bother him	L	SL	NL
112. Almost always punishes me in some way when I am bad	L	SL	NL
113. Often praises me	L	SL	NL
114. Says if I loved him, I'd do what he wants me to do	L	SL	NL
115. Gets eorss and nervous when I'm noisy around the house	L	SL	NL
116. Seldom insists that I do anything	L	SL	NL
117. Tries to understand how I see things	L	SL	NL
118. Says that some day I'll be sorry that I wasn't better as a ehild	L	SL	NL
119. Complains that I get on his nerves	L	SL	NL
120. Lets me dress in any way I please	L	SL	NL

	Like	Somewhat Like	Not Like
121. Comforts me when I'm afraid	L	SL	NL
122. Enjoys staying at home with me more than going out with friends	L	SL	NL
123. Doesn't work with me	L	SL	NL
124. Insists that I must do exactly as I'm told	L	SL	NL
125. Encourages me to read	L	SL	NL
126. Asks other people what I do away from home	L	SL	NL
127. Loses his temper with me when I don't help around the house	L	SL	NL
128. Frequently changes the rules I am supposed to follow	L	SL	NL
129. Allows me to have friends at my home often	L	SL	NL
130. Does not insist I obey if I complain or protest	L	SL	NL
131. Hardly notices when I am good at home or in school	L	SL	NL
132. If I take someone else's side in an argument, is cold and distant to me	L	SL	NL
133. Cheers me up when I am sad	L	SL	NL
134. Does not approve of my spending a lot of time away from home	L	SL	NL
135. Doesn't get me things unless I ask over and over again	L	SL	NL
136. Sees to it that I obey when he tells me something	L	SL	NL
137. Tells me where to find out more about things I want to know	L	SL	NL
138. Tells me of all the things he has done for me	L	SL	NL
139. Wants to control whatever I do	L	SL	NL
140. Does not bother to enforce rules	L	SL	NL
141. Makes me feel at ease when I'm with him	L	SL	NL
142. Thinks that any misbehavior is very serious and will have future consequences	L	SL	NL
143. Is always finding fault with me	L	SL	NL
144. Allows me to spend my money in any way I like	L	SL	NL

	Like	what Like	Not Like
145. Often speaks of the good things I do	L	SL	NL
146. Makes his life center about his children	L	SL	NL
147. Doesn't seem to know what I need or want	L	SL	NL
148. Sees to it that I keep my clothes neat, clean, and in order	L	SL	NL
149. Is happy to see me when I come home from school or play	L	SL	NL
150. Questions me in detail about what my friends and I discuss	L	SL	NL
151. Doesn't give me any peace until I do what he says	L	SL	NL
152. Insists I follow a rule one day and then forgets about it the next	L	SL	NL
153. Gives me the choice of what to do whenever possible	L	SL	NL
154. I can talk him out of an order, if I complain	L	SL	NL
155. Often makes fun of me	L	SL	NL
156. If I've hurt his feelings, stops talking to me until I please him again	L	SL	NL
157. Has a good time at home with me	L	SL	NL
158. Worries that I can't take care of myself unless he is around	L	SL	NL
159. Acts as though I'm in the way	L	SL	NL
160. If I do the least little thing that I shouldn't, punishes me	L	SL	NL
161. Hugged or kissed me goodnight when I was small	L	SL	NL
162. Says if I really cared for him, I would not do things that cause him to worry	L	SL	NL
163. Is always trying to change me	L	SL	NL
164. Lets me get away without doing work I had been given to do	L	SL	NL
165. Is easy to talk to	L	SL	NL
166. Says that sooner or later we always pay for bad behavior	L	SL	NL
167. Wishes I were a different kind of person	L	SL	NL
168. Lets me go out any evening I want	L	SL	NL

	Like	Some-what Like	Not Like
169. Seems proud of the things I do	L	SL	NL
170. Spends almost all of his free time with his children	L	SL	NL
171. Tells me to quit "hanging around the house" and go somewhere	L	SL	NL
172. I have certain jobs to do and am not allowed to do anything else until they are done	L	SL	NL
173. Is very interested in what I am learning at school	L	SL	NL
174. Almost always wants to know who phoned me or wrote to me and what they said	L	SL	NL
175. Doesn't like the way I act at home	L	SL	NL
176. Changes his mind to make things easier for himself	L	SL	NL
177. Lets me do things that other children my age do	L	SL	NL
178. Can be talked into things easily	L	SL	NL
179. Often seems glad to get away from me for a while	L	SL	NL
180. When I upset him, won't have anything to do with me until I find a way to make up	L	SL	NL
181. Isn't interested in changing me, but likes me as I am	L	SL	NL
182. Wishes I would stay at home where he could take care of me	L	SL	NL
183. Makes me feel I'm not loved	L	SL	NL
184. Has more rules than I can remember, so is often punishing me	L	SL	NL
185. Says I make him happy	L	SL	NL
186. When I don't do as he wants, says I'm not grateful for all he has done for me	L	SL	NL
187. Doesn't let me decide things for myself	L	SL	NL
188. Lets me get away with a lot of things	L	SL	NL
189. Tries to be a friend rather than a boss	L	SL	NL
190. Will talk to me again and again about anything bad I do	L	SL	NL
191. Is never interested in meeting or talking with my friends	L	SL	NL
192. Lets me do anything I like to do	L	SL	NL

APPENDIX G

Questionnaire Employed to Measure Anxiety, Test Anxiety, and Defensiveness

This is called "What I Am Like." There are a lot of sentences printed on the following pages, and you are to pick out all the ones that seem to describe you. If a sentence does describe what you are like, draw a circle around the number of that sentence. But if a sentence does not describe what you are like, then leave it as it is and go on to the next sentence. In other words, circle it if it describes you, don't circle it if it doesn't describe you.

1. I like to wateh television before dinner most evenings.
2. I like to play in the snow.
3. I feel eross and grouehy sometimes.
4. I never worry about what people think of me.
5. I always tell the truth.
6. No one has ever been able to seare me.
7. I am afraid of things like snakes.
8. I get a scary feeling when I see a dead animal.

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9. I never get seolded.
10. I never worry about knowing my lessons.
11. When the teacher asks me to read aloud, I am afraid that I am going to make some bad mistakes.
12. I never worry about how well I did on a test after I've taken it.
13. I am afraid of spiders.
14. I am sometimes afraid of getting into arguments.
15. I worry a lot while I am taking a test.
16. I have never had a scary dream.

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17. I like to spend most of my spare time with friends.
18. There are some people I don't like.
19. I worry that I might get siek.
20. I am a very lively person.
21. When the teaeher says that she is going to give the elass a test, I become afraid that I will do poorly.
22. Once I make up my mind to do something, I do it.
23. I wish a lot of times that I didn't worry so much about tests
24. I like everyone I know.

25. I like to go on trips with my mother and father.

26. I sometimes lose my temper.

27. I sometimes dream at night that I did poorly on a test I had in school that day.

28. When the teacher says that she is going to call upon some boys and girls in the class to do arithmetic problems, I hope that she will call on someone else and not me.

29. I usually don't say much when I am together with other boys and girls.

30. I have never been afraid of getting hurt.

31. When I am in bed at night trying to go to sleep, I often find I am worrying about something.

32. There are some things about myself I'd change if I could.

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33. When I am taking a hard test, I forget some things that I knew very well before I started taking the test.

34. I get scared when I have to go into a dark room.

35. I think I worry more about school than other boys and girls do.

36. I never worry.

37. I don't feel sorry for any of the things I have done.

38. I love to play games best of all.

39. I never worry when the teacher says that she is going to ask me questions to find out how much I know.

40. I find it easy to make new friends.

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41. I'm sometimes sorry for the things I do.

42. I am afraid of being bitten or hurt by a dog.

43. When I am home and thinking about my lessons for the next day, I worry that I will do poorly on them.

44. I always do the right thing.

45. Some of the stories on radio and television scare me.

46. I think I worry more than other boys and girls.

47. I like to go to the beach in the summertime.

48. I never worry about something bad happening to someone I know.

49. I don't feel badly when someone scolds me.

50. I sometimes dream at night that I am in school and cannot answer the teacher's questions.

51. I am never shy.

52. When I am in bed at night, I sometimes worry about how I am going to do in class the next day.

53. I am frightened by lightning and thunderstorms.

54. I am afraid of school tests.

55. I like to play pranks on other boys or girls.

56. When I am alone in a room and hear a strange noise, I get a frightened feeling.

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57. I worry that I might get hurt in some accident.

58. Sometimes when I get mad, I feel like smashing something.

59. When I am on my way to school, I sometimes worry that the teacher may give the class a test.

60. I worry about being promoted at the end of the year.

61. I sometimes dream at night that the teacher is angry because I do not know my lessons.

62. I never worry about what is going to happen.

63. I never hurt anybody's feelings.

64. I sometimes dream about things I don't like to talk about.

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65. I like cartoon movies best of all.

66. I never worry about my school grades.

67. When I am away from home, I worry about what might be happening at home.

68. I am frightened when I look down from a high place.

69. I am never unhappy.

70. When I am together with other boys or girls, I am usually the leader of the group.

71. When the teacher says she is going to give the class a test, I get a nervous or funny feeling.

72. I would rather have a few close friends than many friends.

73. When the teacher says that she is going to find out how much I have learned, my heart begins to beat faster.

74. If I am sick and miss school, I never worry that I will do more poorly in my school work when I return to school.

75. I sometimes get the feeling that something bad is going to happen to me.

76. I sometimes worry about whether my father is going to get sick.

77. I get scared when I have to walk home alone at night.

78. When the teacher says that she is going to find out how much I have learned, I get a funny feeling in my stomach.

79. Other people think I am pretty lively.

80. Without knowing why, I sometimes get a funny feeling in my stomach.

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81. I never worry before I take a test.

82. When the teacher asks me to write on the blackboard in front of the class, the hand I write with sometimes shakes a little.

83. I sometimes worry about whether my mother is going to get sick.

84. I am a person who likes to talk a lot.

85. I never have arguments with my mother and father.

86. When I was younger there were some things that scared me.

87. I get worried when I have to go to the doctor's office.

88. I always know what to say to people.

APPENDIX H

Key to Items Measuring Anxiety, Test Anxiety, and Defensiveness on the "What I Am Like" Questionnaire

Anxiety		Test anxiety		Defensiveness	
7	56	11	52	3	41
8	57	15	54	4	44
13	67	21	59	5	48
19	68	23	60	6	49
31	75	27	61	9	51
34	76	28	71	14	58
42	77	33	73	16	62
45	80	35	78	18	63
46	83	43	82	24	64
53	87	50		26	69
				30	85
				32	86
				36	88
				37	

APPENDIX I

Composition of Derived Parent Scales

Derived parent scale	Composition
Father Plus (F+) and Mother Plus (M+)	1. Acceptance 2. Childcenteredness 7. Positive Involvement 13. Acceptance of Individuation
Father Minus (F-) and Mother Minus (M-)	4. Rejection 9. Control Through Guilt 10. Hostile Control 11. Inconsistent Discipline 12. Nonenforcement 15. Instilling Persistent Anxiety 16. Hostile Detachment 17. Withdrawal of Relations
Father Neurotic (FN)	3. Possessiveness 5. Control 8. Intrusiveness
Parent Plus (P+)	Father Plus (F+) Mother Plus (M+)
Parent Minus (P-)	Father Minus (F-) Mother Minus (M-)