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Influence of Sex of Experimenter on Assessment of Gender Identity in Preadolescent Children

by

David Coron

Thesis presented to the School of Graduate Studies of the University of Ottawa as partial fulfillment for the degree of Doctor of Philosophy in Child-Clinical Psychology.

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CURRICULUM STUDIORUM

The author, David Coron, was born in Bronx, New Tork on January 22, 1950. He graduated from Valley Stream High School in Valley Stream, New York in June 1968. He attended Grinnell College in Grinnell, Iowa and received a Bachelor of Arts degree with a major in Psychology in May 1971. He graduated from Syracuse University in June 1974 with a Master of Arts degree in Psychology. He was employed as a full-time child psychologist at Central Georgia Regional Hospital in Milledgeville, Georgia from August 1974 to August 1975. From that time until July, 1976, he was employed at Children and Youth Services of St. Lawrence Psychiatric Center in Ogdensburg, N.Y.: in July, 1976 he became a full-time graduate student in the Child-Clinical Psychology program at the doctoral level at the University of Ottawa.

ABSTRACT

Two male and female experimenters(Es) observed and tested 120 elementary school children(Ss) to determine the effect of E's sex on standard measures of gender identity. Ss, first born children age 6 through 11, were equally divided by sex of S, sex of E and presence/absence of a father figure in the home. Each S was administered the IT Scale for children, a standard series of questions and observed in a 20-minute free-play session with sex-typed toys; the standard questions were used to ensure the presence or absence of a father figure in S's home. Parent questionnaires were also compiled to obtain measures of gender-identity not influenced by E variables. Statistical analyses of the results were completed separately for sex of subject, and ANOVA and tests of Honestly Significant Differences(HSD), as well as Student t-tests were used. Results of these procedures indicate that certain dependent variables were significantly influenced by the sex of the experimenter within both the male and female subjects. Although no significant effects for father status were found within univariate statistical analyses, the IT Scale for Children, the most widely used measure of gender-identity, was found to have significant E sex effects for male and female subjects. The results of the study suggest that E's sex is an important factor in the design of studies investigating gender-identity or sex-role related topics. Possible explanations for these findings are offered based on the previous body of literature, and conclusions and recommendations for consideration in the design of future studies are reported.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES (Continued)

CHAPTER I

INTRODUCTION

In the course of clinical internships and practice, one occasionally discovers apparent etiological factors which apply not only to a specific client, but also to a more widely observed clinical phenomena. Such was the case when the present author began treating a transsexual child. When the clinical and developmental psychology literature was reviewed, it became clear that an important factor in gender identity problems was the role of the parents, particularly the father. Further study indicated that transsexualism is not the only clinical disorder related to unusual or inadequate gender identity; a wide range of behavior disorders are apparently related to the phenomena of gender identity (sex-role) and the father's role in the family.

Most of the clinical literature in this area focused on the inadequacy of the father-son relationship and the possible effects of varied interpersonal interactions. It appears that certain effects can be demonstrated as a result of insufficient paternal influence or contact with boys; these effects seem more pronounced and of greater longevity when the child is deprived of such experiences at an early age. Despite the apparent wealth of data to support the relationship between inadequate father-child interactions, gender identity and possible clinical disorders (i.e. impaired social and interpersonal relationships, juvenile delinquency) few substantitive studies are reported in which girls are included in the research design.

Given the popular myth of the "fairer sex" and their supposed vulnerability to social influences, such an oversight represents a fundamental problem to the student of children's social development. All the major theories of social and gender-identity development include the father as a central figure whose influence is significant for both sexes; although the mother's importance is accepted, paternal influences are more central to most theories of sex-role development. Those authors who have included female subjects in their research methodologies have often found interesting and subtle effects in father-absent populations.

While the research in this area is lacking due to the paucity of studies including a combined female and male subject sample, there are other methodological difficulties in many of the more widely cited studies. The most important of these problems is the tendency to view gender-identity as a bipolar variable rather than as a more "fluid" variable. With the recent societal trend to dissolve stereotypic sex roles, one might expect the contemporary researcher to include dependent variables which accommodate this movement toward more liberal definitions of gender-identity. This has been done recently, but methodological deficiencies including uncontrolled variables continue to beleaguer the research; these variables seem intrinsic to the measures used as well as to the assessment procedure. The literature review to follow documents the historical and theoretical context within which these studies have been conducted; the present author also attempts to identify those variables which might have contaminated previous research findings.

REVIEW OF LITERATURE

The role of parents in the socialization process of children has long been under empirical study (Freud, 1924 and 1933; Fenichel, 1945; Klatskin, 1952; Parsons, 1955). This body of literature is extensive for human (i.e. Levy, 1943; Spitz, 1945 and 1946; Bowlby, 1960) and infra-human species (i.e. Harlow, 1962; Seay, et al, 1964; Harlow and Harlow, 1965), and documents the effects of various types of maternal care on the developing organism. Until recently, however, (Herzog and Sudia, 1968; Biller, 1971; Lynn, 1974) there has only been minimal empirical research into the effects of early paternal care. Although the mother is often primarily responsible for child care, the influence of the father is extensive, but less well documented.

In 1968, it was estimated that six million children in the United States were growing up in fatherless homes (Herzog and Sudia, 1968), and with liberalized societal mores and new divorce laws, the number has undoubtedly increased. Although it is quite probable there are nearly as many girls as boys in these homes, researchers have generally chosen to investigate the effects of father-absence on boys; relatively few studies have incorporated girls in their subject samples, fewer still have studied girls exclusively. It is therefore not surprising that less is known about the effect of father-absence on the development of gender-identity in preadolescent girls.

The typical methodology for studying the effects of parental behavior on neonates has been to delineate differences in their behavior under conditions of single parent deprivation. The effects of maternal deprivation are dramatic in the infra-human species (i.e. Harlow, 1962) as well as in the human research (Spitz, 1945; Rheingold and Bayley, 1959). The results of these studies suggest the necessity for investigation into the effects of paternal deprivation and several authors (Herzog and Sudia, 1973; Biller, 1971; Lynn, 1974) have recently undertaken such research projects. Indications are that under certain conditions, including father-absence in early childhood, preadolescent children deviate from normative data on several different, standardized measures of sex-role (i.e. masculine or feminine). Intrinsic to these studies of sex-role development are several assumptions including: 1) certain stages of sex-role development exist; 2) sex-role is an observably measureable trait; 3) environmental (parental) influences on sex-role development are subject to investigation.

It is not a new "empirical" trend to categorize aspects of behavior as sex-typed. Ancient cultures used sex-type dichotomous groupings (i.e. the Chinese Ying-Yang), and, on what we now recognize as empirically defensible grounds (Bakan, 1966). In addressing these sex-typed differences, Money (1965) and Money and Erhardt (1968) suggested that androgen is the hormone responsible for embryonic and later sexual differentiation but cite no reason to expect that androgen would directly mediate behavioral characteristics. Despite this, they report certain discrete differences in behavioral, as well as physical, traits in cases of female hyperadrenocortical hemaphroditism

(as compared to "normal" females), and Money's (1965) general formulation also lends credence to psycho-social factors (to be discussed below) in sex-role development.

Garai and Scheinfeld (1968) have reported an extensive cataloging of sex-typed mental behavioral traits. From the age of 23 hours to 71 hours, boys show reliably more "hand to mouth" contact; at 96 hours girls are more reactive to tactile stimulation; at 12 weeks, girls discriminate better between line and face drawings; at 5 months of age boys give more attention to novel stimuli; both child and adult traits are reported. Kagan (1972) noted that girls (age 18 months) show more fear in novel situations than their male peers, and the boys explore novel settings more readily at the same age; it was proposed by Kagan (1972) that the more rapid myelinization of neurons in females may account for some of these differences in behavior. Brown and Lynn (1966) have also reported many sex-typed differences in biological-constitutional components of behavior. It is apparent that differences exist between the sexes from the earliest moments of life, and these differences are apparently not exclusively physiological in nature. These behavioral differences between the sexes are somewhat less clear when gender-identity or sex-role development is considered. Unlike certain physiological and/or behavioral differences which appear to emerge spontaneously, gender-identity is assumed to be the product of a continuous developmental process during the childhood years.

THEORIES OF SEX-ROLE DEVELOPMENT

Without this assumption that the differentiation of gender-identity is a developmental process, few theorists or researchers would choose to study its emergence. However, while it is accepted, with few exceptions (see Money, 1970), that Homo sapiens can be divided into two discrete sexes on the bases of chromosomal and physical characteristics, the clear delineation of two behavioral or psychological entities is considerably more difficult, if not impossible. Particularly in today's world of expanding roles for both sexes, there is an ambiguity in behavioral functioning between the two sexes which has led at least some people to describe the present status of gender-specific roles using the term androgyny. Despite this, formulations concerning the factors involved in the emergence of specific gender-identities continue to be forwarded, as they have since Freud's early interest in the process of identification.

Theories of Masculine Sex-Role Development

Theories of masculine identification were among the earliest to delineate the course of male sex-role development. Freud (1924) was the major influence for identification theorists, postulating that anatomical and biological differences between the sexes predisposed children to different patterns of behavior. Prior to age three to five, the boy is said to primarily have a relationship with his mother, and identification with the female sex is dominant. During these years, the boy is said to perceive his father as a rival for maternal affection and the fear of castration arises. These fears and conflicts are

only resolved when the boy identifies with the father and represses his desire for sexual possession of his mother. Crucial to the development of masculine behavior is the boy's perception of the father as threatening (castrating), punitive and frustrative of his Oedipal strivings (Fenichel, 1945); only identification with the father alleviates this anxiety. Masculine behavior is thus interpreted to be a consequence of this identification with the father.

A second, related hypothesis detailing paternal influence in sex-role development has been forwarded by Whiting (1959). This formulation emphasizes the child's identification with his father in his role as the primary consumer of valued resources. The father must have access to more such resources than the mother if the appropriate masculine behavior is to be imitated and rehearsed, in fantasy and reality. Crucial in this status-envy hypothesis is not a desire to possess the mother, as in Freud's formulation, but the child's perception that control of valued commodities and activities is monopolized by the father.

The identification process has also been discussed from a learning theory perspective; Mowrer (1950) emphasized the importance of developmental identification. This identification is said to be based in a nurturant father-child relationship, giving rise to a dependency on the father to provide emotional support and affection. This relationship then initiates the reproduction of parental characteristics to avoid feeling a loss of affection when the parents withold praise and affection. As the father becomes a more salient source of such reinforcement, at about age 4, the boy assumes a more exclusively masculine role. The more social reinforcement a boy receives from

his father, to that degree he will imitate and reproduce his father's behavior. The greater the resulting respect and affection the boy has for his father, the more salient his approval will be; without the father as a source of reinforcement, the boy's masculine development would presumably be attenuated.

Role theory (Parsons, 1955) combines learning theory and identification concepts to explain the emergence of gender-identity. The parent most in a position to control and dispense rewards and punishment is the person with whom the child most closely identifies. Most important in this conceptualization is the assumption that the parent's saliency to the child is directly related to that parent's control of the environment. For the father, this would most often include limit-setting, decision-making and the dispensing of reinforcement. The apparent difference between this theory and the position of social-power theorists (i.e. Bandura and Walters, 1963) is that in the role theory the child identifies not with the parent per se, but rather with the child-parent relationship at a given time, while in social-power theory the parent is seen as a more complete role model who controls environmental contingencies and resources.

Kohlberg (1966) presents a cognitive-development analysis of the development of sex-roles. In this formulation, the boy develops a permanent sex-role image of himself during years two through four. Specific mechanisms were cited for masculine sex-role development, and is best described as similar to social power theory. (Bandura and Walters, 1963), but included such descriptive terms as "interest, competence, cognitive similarity and emotional-affectual attachment" (Kohlberg, 1966, pg. 111).

Theories of Feminine Sex-Role Development

Theories relating to the father's role in the development of gender-identity in females are similar, though less meticulously developed than theories of masculine development. Freud (1933) suggested that during the oral and anal periods of infancy, the girl develops an attachment to her mother. However, during the Oedipal period, she begins to form an erotic attitude toward the father and detaches herself from the mother. The father subsequently provides his daughter with considerable affection for passive, helpless and other "feminine" behavior, thus firmly encouraging these attitudes. Psychological identification with the mother occurs quite late, sometimes after the next child is born, and when physiological differences between the sexes are most profound (i.e. in child birth).

Mowrer (1950) presents a rather simplistic explanation of the father's role in feminine development. Succinctly, the theory postulates that the father reinforces attempts by his daughter to emulate the mother. No psychological importance is attributed to the father-daughter relationship beyond the father's capacity and role to reinforce feminine behavior.

In the role theory formulation, Parsons (1955) suggests that the father varies his role as a function of the sex of his child. While the boy is encouraged to develop abilities in the area of instrumental behavior (i.e. command of the environment through physical prowess), the girl is expected to develop more fully in the area of expressive (affectual) behavior. This hypothesis corresponds well with the reports of Tasch (1952) that fathers view girls as more delicate and sensitive than boys, and thus encourage different behaviors in opposite sexed children. Johnson (1963) has supported

this hypothesis by suggesting that the mother teaches both boys and girls an expressive behavioral component while fathers teach boys instrumental behavior, and girls expressive behaviors.

It is apparent that similarities exist within all the major theories concerning paternal influences on sex-role development and differentiation. All approaches suggest that deficiencies in the child-father relationships would have predictable effects, particularly in the area of gender-identification and these effects should be somewhat dissimilar for different ages at which father-absence occurs.

Stages of Gender-Identity Development

The course of the gender-identity development is postulated to be a continuous process, although it has been conceptualized as a step-wise progression. This artificiality is defensible on empirical grounds (Biller, 1971) as each of several major theories shares the assumption that stages of gender-identity are intrinsic to its development.

The first stage in the development of gender-identity is sex-role orientation (Biller, 1971) and occurs during the second and third years of life. Sex-role orientation is conceptualized as an individual's evaluation of his own masculinity and/or femininity and is generally considered to be a product of early learning experiences. The boy discriminates that he is more like his father than his mother, while the girl perceives herself as similar to the mother and different from the father. With increasing age, the child also incorporates

familial, internal and cultural expectations into his sex-role orientation. Sex-role preference is the second of the three developmental stages that Biller (1971) postulates. Sex-role preference refers to the child's perception and evaluation of certain culture-bound behavioral prescriptions and proscriptions for each sex. The term relates to a preference for certain (culturally) sex-typed activities, roles and attitudes. Within the individual's ability to make such decisions, choice and discrimination between activities is implied in this formulation. Sex-role adoption is considerably more complex than either sex-role preference or orientation, as it is heavily influenced by external factors. The term refers to publicly observable, overt behavior patterns and includes society's evaluation of the masculinity or femininity of the behavior (and the individual). Assertiveness, competitiveness, independence, expressions of physical prowess and mastery of the environment are all considered observable masculine behaviors while passivity, dependency and timidity are the more traditional labels applied to overt feminine characteristics (Biller, 1971).

Sex-role orientation is seen as predisposing a child toward similar sex-role preference and adoption, although experiences of the child at any point in early childhood may alter the course of this development (Biller, 1971). Socio-cultural factors may likewise force a child to assume masculine sex-role preference and adoption, although his orientation may be feminine; such is often the case in the most aberrant form of sex-role orientation, preference and (particularly) adoption which Stoller (1968) has called childhood cross-gender identity. In order to study the course of gender-

identity development and related forms of psychopathology or social deviance, some type of empirical measurement is necessary. A wide variety of such techniques have been used and include objective and subjective measures; some assessment instruments have been specifically developed for measuring gender-identity, while others have been adapted for this purpose.

Measurement of Sex-Role

Different methods have been used to study gender-identity and its development in children, the most common techniques calling for inference or subjective judgements. The first figure drawn in human-figure drawing tasks has been one measure used to assess sex-role orientation (Biller, 1968), but may not be reliable for use with certain populations, including young children (Brown and Tolor, 1957). The Franck Drawing Completion Test (Franck and Rosen, 1948) attempts to assess masculinity-femininity on the basis of elaborations of incomplete line figures, attributing masculine and feminine characteristics to angles and curves respectively. Certain responses given in the Blacky Pictures have also been used as a measure of sex-role development (Leichty, 1956).

It is reported by Biller (1971) that a common technique for assessing a child's sex-role development (orientation and preference) is the IT Scale for Children (ITSC). "IT" is a neuter-type, stick figure picture of a child, and the subject must choose what "IT" would prefer from a set of various socially sex-typed items and activities. The test, developed by Brown (1956), is open to criticism (i.e. Brown, 1962) because "IT" actually appears more masculine than feminine, hence, there is an intrinsic bias in the scale. Despite

this, Hetherington (1966) has reported acceptable construct validity for the scale and its use is widely accepted, although other certain modifications have also been advocated (Fling and Manosevitz, 1972).

With populations of young children, free play is often used to infer sex-role preference and adoption (Rabban, 1950). Rekers and Lovaas (1974) have measured sex-role development using the time spent in actual play with sex-typed toys as an empirical measure. A game preference test has been developed (Rosenberg and Sutton-Smith, 1959) and the (preadolescent) child's responses are compared to normative data for both sexes. Point scale ratings (Koch, 1956) and peer-ratings (Gray, 1957) have also been used with some success to assess gender-identity development.

Several methodological shortcomings exist in most attempts at measuring gender-identity. The first, and most obvious, is the implicit assumption that masculinity and femininity are mutually exclusive bipolar characteristics. Biller and Liebman (1971) have shown this to be an erroneous assumption, but only they and Bates, Bentler and Thompson (1973) have attempted to incorporate independent assessments of both characteristics into a useful assessment procedure. Biller and Liebman found that athletic, well-liked males possess a high level of masculine and feminine personality characteristics, and social desireability appears to be a function of both sets of traits. Bates, et al (1973) have developed an assessment tool (the Gender Behavior Inventory for Boys--GBIB) and approach gender-identity as a complex variable and not as femininity or masculinity per se.

A second criticism relates to the experimenter's influence on the data collected. Rosenthal (1965) has found this to be a significant factor in many types of psychological research; Rekers (1975) has demonstrated that the sex of the experimenter can be a significant factor in overt sex-typed behavior emitted by a child. Only a limited number of other reports (i.e. Rekers and Yates, 1976; Borstelman, 1961) have attempted to assess or control for this apparently powerful experimenter influence.

A further difficulty affecting the results of any study pertains to the way in which father-absence is defined (temporary or permanent) and controlling the extent to which surrogate male models may play a role in a child's life (Herzog and Sudia, 1973). It is surprising that very little of the research on sex-role development has attempted to control these factors; they appear to be of considerable importance.

Paternal Absence and Sex-Role Development

Overlooking the aforementioned methodological deficiencies of previous studies, several patterns of gender-identity development emerge as a result of father-absence (or separation). Effects differ according to the age of the child when father-absence occurred, the socio-economic status of the family, and the number, order and sex of siblings.

Reports of the study of father-absence in preadolescent girls are not extensive or large in number. It has been more common for researchers to study father-absence in males, perhaps reflecting a past cultural bias which elevated the role of the male and concomitantly depreciated the status of women. Feminity has traditionally been

defined in negative terms (i.e. "Mulier est hominis confusio—woman is the confusion of man", Adler, 1927, page 129), and described with adjectives such as passive, dependent, narcissistic, etc. Only recently have authors and researchers been more kind toward the "fairer sex", using terms such as interpersonal skills, sensitivity, warmth...to represent female behavioral characteristics (Biller, 1971).

Research into the area of father-absence and feminine-role development has been characterized by the study of adult or adolescent women, with attention given to an impairment in interpersonal relations. Seward (1945) has found father-absent women more rejecting of the role of wife and mother, while Jacobson and Ryder (1969) have found that father-absent women have trouble achieving satisfactory sexual relations. This impairment of interpersonal and sexual relations with men is explained within a psychodynamic perspective by Leonard (1966). Leonard suggested that an absent father is often idealized and used as an ideal when a girl chooses a boyfriend (or husband). Since ideals are rarely attainable, subsequent disenchantment may lead to a deterioration of the male-female relationship. In fact, Hetherington (1972) has found father-absent girls to have inadequate social skills with males.

The few studies reported which included preadolescent girls showed their greater dependency on mother (Lynn and Sawrey, 1956) and a higher rate of delinquency (and acting out) as compared to a group of father-present peers; however, as Herzog and Sudia (1968) point out, the methodology of these studies must be questioned due to errors

in measurement and subject sampling. It should also be noted that since girls generally show greater variance in toy preference than do boys (Ward, 1968; Lansky, 1967), inferences from preference measures must be explored very carefully.

The effect of father-absence on social development in males has been more thoroughly studied. Early father-absence (before the age of five) has been found to have the most severe effect on a boy's masculine development. Biller (1969) has found that boys who became father-absent before the age of five had less of a masculine sex-role orientation than father-present boys and those who experienced this separation before age four were significantly different (less masculine) from those who became father-absent after age five. Santrock (1970) has reported that boys who lived in father-absent homes before age two were less trusting, industrious and felt more inferior to their peers than a group of male peers who have become father-absent at ages three to five. Kohlberg and Zigler (1968) have found that boys become more sex-typed through age 6 and then their interests become less sex specific.

While most of the literature reviewed indicates a significant effect of the age of the child when father-absence began, the socio-economic status (SES) of the family is also relevant when one considers parent-child interactions (Klatskin, 1952); however, much of this (SES) research is confounded by a lack of control for the age at the onset of father-absence, and the literature is therefore less than conclusive. Altus (1958) found that middle-class father-absent

male adolescents were lower in masculinity (as measured by the MMPI) than lower-class control groups. Several other studies have reported no differences in masculinity ratings between SES groups (i.e. Greenstein, 1966), although the problem of the child's age at the time of father-absence must again be noted. No studies have been reported which adequately control this age variable for SES group comparisons of gender-identity development (for either sex), although Bronfenbrenner (1958) has found SES a significant factor in child-rearing practices.

The fact that alternative male or female models may compensate for father-absence can be predicted from most theories of gender-identity development. Koch (1956) and Rosenberg and Sutton-Smith (1966) have found that older siblings can exert a significant influence on a younger brother's masculine development; similar effects of older sisters on younger (male) siblings (Brim, 1958) have been noted, although this was seen as anti-feminine effects. Exposure to the influence of male groups (gangs and clubs) with a resultant difference in masculine behavior has also been found; in father-absent boys with older brothers (Koch, 1956; Sutton-Smith, Rosenberg and Landy, 1968) and those with stepfathers (Oshman and Manosevitz, 1976) similar effects are noted; however, the effect of an older sibling (or stepfather) on sex-role development is apparently not as great as the effect of the natural father being present.

It appears from the literature that several methodological deficiencies exist in previous research studying the development of gender-identity in father-absent children. It is this author's opinion that the influence of the sex of the experimenter is perhaps one of the most obvious and disconcerting of the methodological shortcomings

of previous research.

The first study specifically designed to assess the influence of an experimenter's (E's) sex on the results of a child's sex-role assessment was reported by Borstelmann (1961). He tested a group of three to five year old children (from intact families) utilizing a 2 x 2 factorial design. (Half of the subjects were also retested with the opposite sex experimenter.) The study used the IT Scale for Children, a forced choice toy preference task and an activities (picture-stimuli) preference task; the results indicated no significant influence for the sex of the experimenter.

The results of this study might be attributed to (at least) two factors: the limited size of the sample (N = 32) and the nature of the group of children. If they were from intact families, they presumably would have had appropriately developed or developing gender-identities which were (powerfully) maintained by both parents at home; therefore, a lack of significant influences of the experimenter's sex was probably not an unusual or unpredictable finding.

Other studies have documented the influence of the sex of individuals (not necessarily experimenters) on a child's responses in various situations. Stevenson, Keen and Knights (1963), as well as Allen, Spear and Johnson (1970) have demonstrated that the sex of an experimenter can influence the saliency of social reinforcement upon a child performing an irrelevant task. Specifically, they both found that the opposite sex experimenter was most salient as a socially reinforcing agent. Rosenthal (1965) has shown the influence of an experimenter's sex on the response topography of adult subjects;

perhaps more significantly, Hetherington (1966), Rekers (1975) and Rekers and Yates (1976) have all indicated the need for controlling this E influence in studies using father-absent youth or those with gender-identity problems.

Hetherington (1972) studied father-absent adolescent girls, and found significant effects for the sex of the experimenter/interviewer and the type of father-absence. Intact, divorced and widowed families were studied using behavioral observations, non-verbal interview behavior and other measurement techniques. The results of this study indicated that the father-absent girls talked less with male interviewers and were inadequate in terms of heterosexual social skills. The divorced group demonstrated "immodest" posturing (sprawling legs, leaning toward E) with the male interviewers while the widowed group showed "avoidance" posturing (turning to side, legs together, hand on lap). Thus, while the father-absent and intact family groups verbally responded differently to the male experimenter, the two father-absent groups could also be differentiated from each other on the nature of their responses (divorced--proximity seeking; widowed—avoidance).

Rekers (1975) has further defined the need for controlling the sex of the experimenter in sex-role development research in his clinical studies of childhood cross-gender identity. He has shown evidence of differential responding (as regards sex-typed free play) in the presence of various adults, and Rekers and Yates (1976) have addressed this methodological problem. They suggest free play observations (to be used in assessing sex-role) be made without an adult present (i.e. one-way mirror) to eliminate possible biases; nonetheless, few researchers seem to have attempted to control the sex of the experimenter in this or other ways.

SUMMARY

It can be seen that the concept of gender-identity development is not new to the social sciences and a variety of theoretical formulations have been offered to explain the process. Despite the varied tenets on which these theories are based, they all emphasize the role of paternal influences on children of both sexes. The construct of step-wise developmental progression also underlines the significance of age as a variable in the study of emergent gender-identity. Further, by conceptualizing this development as such, the researcher is better able to measure and classify a child's gender-identity at a given time.

Various methodologies and instruments have been used in the study of gender-identity in children, but most leave unanswered questions concerning the adequacy of the measurement tool and the assessment procedure itself. Uncontrolled factors seem to indicate that findings concerning the ubiquity of effects attributed to father-absence in early childhood may need reconsideration or revision. Effects on social functioning in a wide range of areas may exist, but it remains to be determined if they can be attributed to gender-identity or other mediating variables.

The major shortcomings of the previous research on father-absence and gender-identity in preadolescent children appear to be the lack of studies including female subjects, the failure to control for the effects of the experimenters' sex and the use of measures which conceptualize gender-identity as a mutually exclusive bipolar trait. Further difficulties surround the lack of rigor in choosing subject

samples such that socio-economic status, sibling order and surrogate (adult) male models are not always controlled. This study is an attempt at controlling three of these seemingly salient factors which have not been fully addressed by previous researchers.

That the sex of an experimenter can influence the results of experimental and clinical tasks has been demonstrated by many researchers and the need for appropriate control procedures has been similarly addressed(Harris, 1971). Most researchers have chosen to view such influence as nuisance and artifactual variables, and even those who emphasize its importance do not always offer theoretical explanations to account for such phenomena(Rosenthal, 1966; Rosenthal and Rosnow, 1967;Harris, 1971). However, Borstelmann(1961) and Rekers(1975) have each offered such formulations for the observed effects of E's sex. Borstelmann(1961) noted that if children are differentially responsive to parental qualities such as permissiveness or restriction, warmth and related sex roles, they should develop certain "expectations and anticipatory sets" with respect to the presence of such qualities in other significant adults(such as an experimenter) of each sex. Rekers(1975) has presented a similar interpretation of E sex effects using a more behavioral perspective and implicitly minimizing the cognitive aspects of anticipation and expectation. Environmental events and stimuli are said to become discriminative for specific(sex-typed play) behaviors; these stimuli would include E's sex. The different reinforcement histories of individual children are said to determine the form of the observable response.

Both authors make reference to the child's history and previous

interactions with parents and, to a lesser degree, other adults. As the major theories of sex-role development are also predicated on such interpersonal encounters, deviations in, or lack of identification, reinforcement for "appropriate" sex role behavior, appropriate role modeling or role envy should influence expectations and reinforcement histories and hence differentially effect interactions with adults of both sexes.

Within the Freudian concept of identification and sex-role emergence, it is necessary for the child to overcome an erotic attachment to the parent of opposite sex to achieve adequate gender identity. In males, resolution of such feelings is based upon the child first viewing the father as anxiety producing due to competition for the mother and castration anxiety; later identification with the father is a means of reducing this anxiety. Depending on the age at which father absence occurs, one might expect some boys to be almost sexual in his approach to women, while later father absence might preclude resolution of anxiety produced by adult males, thus also influencing the child's behavioral repertoire. Similarly, one might expect an analagous formulation for the interaction of father absence and E's sex in girls

The several theories which attribute sex-role development to such concepts as status-envy, power and social learning theory are predicated on a child's history of interactions with both parents and an ability to discern their respective and often reciprocal roles. In the absence of the father, a child's expectations would be dissimilar from those of children with both parents present in the home, although an attenuation of such differences might be attributed to surrogate parent models and sibling or peer influences. Nonetheless, the differences

in expectation between groups will likely remain and encounters between father-absent children and an experimenter should be distinct from those with father-present children, particularly if one varies the sex of the experimenter. If the child views women as the controller of resources, these theories would all predict the child's responses to be different than if women were viewed primarily as sources of affection and interpersonal warmth. Such are the bases for predicting that E sex is an important (uncontrolled) variable in the assessment of sex-typed behavior in father-absent children. It is assumed that with greater and broader experiences related to family roles, the father-present child would view each gender as more balanced in their responding, and therefore enter the test situation with a more complete view of the roles and responses from which to choose.

CHAPTER II

METHODOLOGY

Overview

In an attempt to control the methodological difficulties identified in the previous literature, the present study is designed (in part) as a systematic replication of Borstelmann's (1961) study and incorporates the more commonly cited measurement procedures to assess gender-identity. It is felt that certain methodological deficiencies in the previous literature can be remedied. The failure of previous studies to control (and in most cases, report) the sex of the experimenter renders the results of previous research tentative, particularly with reference to the findings of Rosenthal (1965) and Rekers (1975). A seemingly important question unaddressed in previous literature must also be: What are the effects of father-absence (as well as E's sex) on the assessment of gender-identity in preadolescent girls? The concern for the effect of a family's socio-economic status on sex-role development in the father-absent child is noteworthy; research in this area does not control for the age at which father-absence occurred, and this appears to be an important variable (see Biller, 1971). Control of this factor is necessary for a meaningful study of gender-identity and father-absence. For pragmatic reasons, this could not be systematically studied herein.

Subjects

The subjects for the present study were 120 elementary school children, ages 6 through 11. Sixty of the children were from homes in which there had been no resident adult male since the child was

age 5 (father-absent group); the other sixty children were from "intact families" in which the father was not out of the home more than five weeks a year (father-present group). The subject sample was equally represented by each sex and stratified by age (and scholastic grade level). Socio-economic status was a random variable, but 71% of the population were in the poverty (eligible for New York State Public Assistance) category.

During the course of subject selection, only first-born children were accepted for the study; a total of seventeen referred father-absent children were not included in the study, primarily due to the presence of a surrogate father figure in the home.

The experimenters (E) were two female child care work interns and two child psychology interns, all of whom had previously been instructed in administrating the ITSC and other assessment tools. Male experimenters wore collared shirts (with a necktie) while the female E's wore dresses or skirts during testing sessions.

Procedure

Subjects were assigned to male or female experimenters in such a way as to maintain equal age groupings across treatment conditions (sex of experimenter). Each child in a given age category had an equal probability of assignment to either sex experimenter (E). Assignment of children to groups was done "blind" so that E did not know whether children were from father-present or father-absent families. The groups were designated as follows:

1) EM-FA - Male experimenter/father-absent

2) EM-FP - Male experimenter/father-present

3) EF-FA - Female experimenter/father-absent

4) EF-FP - Female experimenter/father-present

Testing and data collection were completed in one session for each child. Each session included the administration of the IT Scale for Children (Brown, 1956) and a twenty-minute free-play period; the interview questions (noted below) were also presented. These tasks were presented in random order for all groups of subjects.

In the administration of the ITSC, a blank card was presented to the subject with the following instructions: "Look at this card and imagine (make believe) that there is a picture of a child on it. Which of these games (toys) would this child like to play (with)?" The child was then presented the following sets of cards and asked to choose the preferred card from the following sets of stimuli (see Table 2).

The initial blank card was used to control for biases reported by Brown (1962) when a drawn figure was used as an eliciting stimulus. As stick figures and even pictures in the shape of a (neuter) human head are prone to (cultural) masculine biases, Brown (1962) suggested this blank card procedure.

To assess gender-identity within a more naturalistic perspective, a toy preference "free play" procedure was used (Biller, 1968a). E led S to a playroom with two sets of toys. The toys were divided into two groups: one associated with maternal nurturance (baby doll and crib, a baby bottle, baby powder, a Barbie doll and two complete sets of clothes, and a Barbie camper), while the second group of toys was

TABLE 2

STIMULI PRESENTED DURING ITSC

A. Toy Pictures Section:

Necklace - Feminine
Tractor - Masculine
Doll - Feminine
Dump truck - Masculine
Train engine - Masculine
Purse - Feminine
Gun (rifle) - Masculine
High chair - Feminine
Cradle - Feminine
Racer - Masculine
Dishes - Feminine
Earthmover - Masculine
Soldiers - Masculine
Doll buggy - Feminine
Knife (pocket) - Masculine
Baby bath - Feminine

B. Paired Pictures Section:

Indian princess - Indian chief
Trousers and shirt - dress
Sewing materials - Airplane parts
Cosmetic articles - Shaving articles
Mechanical tools - Household objects
Mens shoes - Womens shoes
Girls playing - Boys playing
Building tools - Baking articles

C. Child-Figures Section:

Girl
Girlish boy (boy dressed as girl)
Boyish girl (girl dressed as boy)
Boy

associated with masculine aggression (two dart guns, a small target, rubber knife, plastic handcuffs, a GI Joe doll, and a set of cowboys and Indians). These toys have been used by Rekers and Lovaas (1974) to assess deviant sex-roles, and have also been sex-typed and equated for saliency of stimuli and frequency of use by a number of other researchers (Brown, 1956; Fagot and Patterson, 1969; Sutton-Smith, et al, 1963); however, the GI Joe doll and the Barbie camper were added to provide control for contemporary societal trends (as done previously by Walker, 1964), which allows boys to play with certain dolls and girls with previously identified "masculine toys".

The child was then told:

> "I want you to play with any of these toys. I will be here, but make believe you are alone and play with whatever toys you like."

Each child was observed for one, twenty-minute session and the amount of time played with masculine and feminine toys was recorded for two, ten-minute periods (to assess possible "warm-up" effects), (Sidman, 1960). The determination as to sex-typed play was made using the following criteria:

a) Masculine play: Play with the masculine toys in a typical fashion; that is, the toys were used for their intended purposes.

b) Feminine play: Same definition as above with respect to the feminine toys.

c) Non-Specific play: Use of any of the two sets of toys for atypical, unusual or cross-gender type play.

Inter-rater reliability checks were completed for each E on four occasions. The author viewed the play session from either behind

a two-way mirror or on a video monitor and independently scored the child's play using the categories and definitions noted above; concordance for all Es was 100% allowing for a ±5 second variance.

E also asked both FA-Ss and FP-Ss the following questions (adapted from Biller, 1968a, pg. 109):

1. Suppose you are moving to a new house. Who picks the place to live?
2. Who says which TV show your family watches?
3. Who would know how to get into your house if your family were locked out?
4. If there is a leaky faucet in your house, who fixes it?
5. Who takes you the most places you want to go?
6. Who punishes you the most?
7. Who tells you to clean things when you've made a mess?
8. Who do you have the most fun with?
9. Who gives you the most spending money?
10. If a light bulb in your house goes out, who puts in a new one?

This data was used to provide a basis for controlling for surrogate males living or available to a FA-subject. If the child answered with a male's name, attempts were made to discern the relationship of the man to the child; as noted previously, seventeen FA children were dropped from the study using this screening procedure.

The Gender Behavior Inventory for Boys (Bates, et al, 1973) was completed by each child's mother and provided a measure of gender-identity in an environment not influenced by E.

Experimental Design

The experiment utilizes a 2 x 2 factorial design with two levels of each factor (father-absence/father-presence and male E/female E); the experimental design demands independent sex of subject analyses as no inter-sex comparisons are made. Each of the eight dependent variables is purported to measure gender-identity (or some component of gender-identity) and all data from these variables are integral in nature, thus allowing the use of inferential parametric statistical analysis.

The first dependent variable (ITSC with modifications) is a commonly used procedure in the recent literature and one upon which much of the previous literature is based (Biller, 1971 and 1974). Its susceptibility to influences such as the sex of the experimenter is important if previous literature is to be considered relevant. The four, free-play observations were selected to allow assessment of sex-typed and non-sex-typed play while also investigating the possibility that warm-up—or habituation--effects significantly alter response topography across a period of time. This type of effect (Sidman, 1960) is not unexpected within an interpersonal situation but its relation to responding should be systematically studied.

It should be noted that by allowing non-specific play, the present paradigm not only eliminates artificial dichotomous sex-role groupings (Biller and Liebman, 1971) but also incorporates contemporary cultural values into the assessment (Walker, 1964).

The selection of the final three dependent variables obtained from the Gender Behavior Inventory for Boys (Bates, et al, 1973) arose as a response to the need for an objective assessment vehicle to be used by the child's parent. While the influence of the experimenter's sex was an essential component in the present study, it was also considered essential to gain independent data from the home, particularly in the case of the female, father-absent subjects.

The resulting statistical analysis of the data from this experimental design required two sets of computations, one for male subjects and one for female subjects. For each group of same sexed subjects, eight 2 x 2 analyses of variance were performed to ascertain within which dependent variable(s) statistically significant differences might lie; to further delineate group differences, Tukey's HSD test was used as a method of post hoc group mean comparison (Kirk, 1968). Further, eight Student t-tests for related measures were performed to ascertain if non-specific and sex-typed play significantly differed between observation periods; this analysis was carried out within each of the four treatment groups (for each sex).

The statistical analyses noted above constituted the tests of eight hypotheses for each of the two subject samples (male and female). The power of non-significant tests ($1-\beta$) was also calculated to determine how such results might be interpreted.

Research Hypotheses

When such factors are appropriately controlled, certain predictions can be made with respect to anticipated research findings. Integrating previous research findings in the separate areas of experimenter influences and father-absent gender-identity development has resulted in the following hypotheses offered for the results of the present research methodology. Each hypothesis is designated for the male or female subject sample by the letter suffixes M and F respectively. Because fo the paucity of literature on father absence, E sex influences and preadolescent female subject samples within such a design, certain hypotheses will be non-directional and in the null form.

Hypothesis 1M: Father-absent groups of boys will score lower on the ITSC than father-present groups; the lowest group mean will be in the father-absent, female experimenter condition.

These predictions are based on previous research with the ITSC in which such effects have been demonstrated; the effect of E's sex and the interaction effects are hypothesized on the basis of integrating the research demonstrating effects of male and female experimenters on social task performance and the ITSC father-status data. It is predicted that the FA-EF group will anticipate reinforcement for more affective, "feminine" responses, and this will necessarily lower the group's mean ITSC score. The children's expectation should be based on a history of interactions with their mother and lack of identification with a male within the home.

Hypothesis 1F: Father-absent and father-present groups of female subjects will not significantly differ on the ITSC.

Hypothesis 2M: Father-present boys will engage in more masculine freeplay (both during and after a warm-up period) than father-absent boys; the FA-EF group will engage in the least masculine freeplay.

These predictions are based on clinical findings and observations, as well as empirical studies, documenting the direction of significant effects of father-status and sex of experimenter in free-play situations; the prediction for interaction effects is an interpolation from the main effects data. It is projected that father-present boys will have the expectation of male approval for instrumental play activities which will most often fall within the masculine play criteria. Father-absent boys will likely anticipate approval from females for play which is not exclusively masculine, as single parent mothers are more likely to have promulgated play activity which is not primarily masculine, but not necessarily feminine.

Hypothesis 2F: Father-absent and father-present girls will not differ on either of the feminine freeplay measures.

Hypothesis 3M: a) Father-absent groups of boys will engage in more non-specific play (during both observations) than their father-present counterparts: b) there will be no significant difference in non-specific play between the E sex factor or the interaction of the main effects.

This prediction is founded on the observation that girls have more varied non-stereotypic play preferences than boys (Rekers, 1975) and therefore the potentially "feminized boys" (FA group) of previous research will be similar in response style to the present subject sample and will therefore show similar play preferences; non-specific play will be the most commonly recorded response. This is (again) based on the assumption that the FA group would not expect approval for masculine play, but might avoid expected disapproval for feminine play by choosing the third alternative of non-specific play.

Hypothesis 3 F: Non-specific play I and II will not significantly differ for the main effects or their interaction.

Hypothesis 4 Ma: The amount of time spent by father-absent boys in masculine play will not significantly differ across the two free-play observation periods.

Hypothesis 4 Mp: The amount of time spent by father-present boys in masculine play will not significantly differ across the two free-play observation periods.

Hypothesis 4 Fa: The amount of time spent by father-absent girls in feminine play will not significantly differ across the two free-play observation periods.

Hypothesis 4 Fp: The amount of time spent by father-present girls in feminine play will not significantly differ across the two free-play observation periods.

Hypothesis 5 Ma: The amount of time spent by father-absent boys in non-specific play will not significantly differ across the two free-play observation periods.

Hypothesis 5 Mp: The amount of time spent by father-present boys in non-specific play will not significantly differ across the two free-play observation periods.

Hypothesis 5 Fa: The amount of time spent by father-absent girls in non-specific play will not significantly differ across the two free-play-observation periods.

Hypothesis 5 Fp: The amount of time spent by father-present girls in non-specific play will not significantly differ across the two free-play observation periods.

These hypotheses are worded in the null form as no data exist to suggest either directional or significant warm-up effects in gender-identity research. Intuitively, however, such effects bear some importance in most research in which social interactions are of significance; as familiarity increases, response patterns may change.

Due to the nature of the last series of dependent variables, the effects of experimenter's sex are not relevant as E was not involved in completing the GBIB questionnaire. Therefore, the following hypotheses omit that variable and the main effects interaction.

Hypothesis 6M: Father-absent boys will score higher on the Gender Behavior Inventory for Boys: Factor I than father-present boys.

High scores on the GBIB: Factor I are associated with a feminine behavioral repertoire or orientation, and as father absence is associated with such findings, the prediction is offered.

Hypothesis 7M: Father-present boys will score higher on the Gender Behavior Inventory for Boys: Factor II than the father-absent boys.

Factor II is designed to yield high scores for behavior most typically characterized as masculine. As this is more common and pronounced in father-present than father-absent boys, the FA groups should score lower on this scale.

Hypothesis 8M: Father-absent boys will have a higher Gender Behavior Inventory ofr Boys: Factor III score than father-present boys.

Factor III scores on the GBIB are related to behavioral disturbance, and the incidence of such behavior is higher in FA than FP groups of subjects in previous research. It is therefore anticipated that scores in this study will reflect this finding.

Hypothesis 6F: Father status in girls will not be a significant influence on GBIB: Factor I scores.

Hypothesis 7F: Father status in girls will not be a significant influence on GBIB: Factor II scores.

Hypothesis 8F: Father status will not be a significant influence on GBIB: Factor III scores for a subject sample of preadolescent girls.

Because there is no empirical data or well developed theoretical basis on which to base directional hypotheses, the null hypothesis has been used for GBIB results in the female subject sample.

CHAPTER III

RESULTS

The results of the present study were analyzed using univariate analyses of variance(ANOVA), Student *t*-tests for related measures and post hoc comparison of the means(Honestly Significant Difference method, Kirk, 1968). Each group of same-sexed subjects required separate univariate analyses of variance(2 x 2 factorial design) for each of the eight dependent variables. Post hoc comparisons, using the HSD procedure, were completed on each dependent variable to compare all experimental and control group means. Student *t*-tests for related measures were used to assess within group warm-up effects during the free-play periods; in addition, tests of statistical power were computed on all non-significant *F*-tests.

Results with Male Subjects

To determine within which of the eight dependent variables significant differences lay, eight univariate analyses of variance were used. Table 3 reveals that significant differences exist within the sex of experimenter variable($F=4.782$; $df=1, 56$; $p<.05$); the father status and interaction variables were not statistically significant; the power of these *F* statistics were <.12 and <.57 respectively. Low ITSC scores have been associated with feminine gender identity and post hoc comparison of the means indicated that the groups with male experimenters and father-absent boys(EM-FA) showed a lower ITSC score than the EF-FA and EF-FP groups(refer to Table 4).

The amount of time spent in masculine free-play(as defined previously) during the first ten-minute observation period was the

TABLE 3

2 x 2 ANALYSIS OF VARIANCE - ITSC SCORES FOR MALE SUBJECTS

Source	SS	df	MS	F	1-p
Main Effects	3388.8658	2	1694.433	2.809*	
Experimenter Sex	2884.2681	1	2884.2681	4.782*	
Father Status	504.5979	1	504.5979	.8366	<.12
Two-Way Interaction					
Experimenter Sex x Father Status	326.6672	1	326.6672	.4549	<.57
Within Cell Error	33776.574	56	603.153		

*p .05

TABLE 4

MEAN AND STANDARD DEVIATION SCORES FOR ITSC - MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	54.933	17.400
EM-FP	44.467	30.589
EF-FA	64.133	18.114
EF-FP	63.000	29.086

second dependent variable on which an analysis of variance was completed and the results of this analysis are presented in Table 5. Examination of the table reveals that there are no significant differences in masculine free-play between the experimental conditions; the HSD test comparing group means resulted in a similar finding of non-significant differences (means and standard deviations presented in Table 6). Calculation of statitical power for these F tests yielded results of $<.06$, $<.18$ and $<.06$ for the three respective ANOVAs.

The second free-play variable was the amount of time spent in non-specific play and results of this analysis of variance are presented in Table 7. Within this dependent variable, significant differences lay between the two father status groups ($F = 6.6458$; $df = 1$; $p < .001$). Further examination of differences between group means using the HSD test revealed that with female experimenters, the subjects (males) engaged in significantly more non-specific play than their counterparts in the male experimenter groups. The power of the non-significant F value for the interaction of the two independent variables was $> .99$.

The twenty-minute free-play period was divided into two equal periods to study possible warm-up effects (Sidman, 1960) within this measure of gender-identity; the second pair of free-play scores were analyzed in an identical fashion to that of the first set. Table 9 presents the results of this analysis of variance on masculine play (II) data. It can be seen that the interaction term, Experimenter-Sex x Father Status appears

TABLE 5

2 x 2 ANALYSIS OF VARIANCE - MASCULINE PLAY (II)

Source	SS	df	MS	F	1-β
Main Effects	7301.3155	2	3650.6577	3.0088*	
Experimenter Sex	3713.0645	1	3713.0645	3.0603	<.26
Father Status	3588.2510	1	3588.2510	2.9575	<.18
Two-Way Interaction					
Experimenter Sex x Father Status	3619.2644	1	3619.2644	2.9830	<.76
Within Cell Error	67944.8460	56	1213.3010		

TABLE 6

MEAN AND STANDARD DEVIATION SCORES FOR MASCULINE PLAY I - MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	56.333	23.597
EM-FP	56.267	33.412
EF-FA	25.067	34.876
EF-FP	56.067	44.313

TABLE 7

2 x 2 ANALYSIS OF VARIANCE - NON-SPECIFIC PLAY (I) FOR MALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	21932.613	2	10961.8066	10.4559*	
Experimenter Sex	14946.8047	1	14946.8047	14.257**	
Father Status	6976.8086	1	6976.8086	6.6458***	
Two-Way Interaction					
Experimenter Sex x Father Status	633.7507	1	.6045	.4402	>.99+
Within Cell Error	58709.480	56	1048.384		

*p < .001
**p < .001
***p < .01

TABLE 8

MEAN AND STANDARD DEVIATION SCORES FOR NON-SPECIFIC PLAY I-MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	27.267	20.541
EM-FP	12.200	25.866
EF-FA	65.333	35.231
EF-FP	37.267	43.143

TABLE 9

2 x 2 ANALYSIS OF VARIANCE - MASCULINE PLAY (II)

Source	SS	df	MS	F	1-β
Main Effects	1736.6643	2	868.3321	.86326	
Experimenter Sex	134.999	1	134.99	.1342	<.06
Father Status	1601.6653	1	1601.6613	1.5923	<.12
Two-Way Interaction					
Experimenter Sex x Father Status	21812.2578	1	21812.2578	21.6851*	
Within Cell Error	56329.6572	56	1005.8867		

*p < .001

TABLE 10

MEAN AND STANDARD DEVIATION SCORES FOR MASCULINE PLAY II - MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	67.067	22.952
EM-FP	39.266	40.434
EF-FA	25.933	33.326
EF-FP	74.399	27.407

statistically significant ($F = 21.6851$; $df = 1, 56$; $p < .001$) and post hoc comparison of group means revealed significant differences between the EF-FP and EM-FP groups: the EF-FP group showed significantly more masculine play than the EF-FA group. The statistical power of the F-tests for the two main effects, Experimenter-Sex and Father Status was $< .06$ and $< .12$ respectively.

Non-specific play (II) data were also analyzed using a 2 x 2 analysis of variance, and the results are presented in Table 11. Examination of these results indicate that differences between the independent variables (sex of experimenter and father status) are statistically significant; the power of the non-significant F test for E sex was $< .12$. Father-status ($F = 8.5266$; $df = 1, 56$; $p < .005$) data were further analyzed, and it would appear that during this second period of free-play, non-specific play was equally common among all but the EF-FA group. The significant interaction between the independent variables ($F = 12.7173$; $df = 1, 56$; $p < .001$) could not further be distinguished using the post hoc group mean comparison (HSD).

To identify possible differences due to warm-up effect within individual group means in the free-play data, individual Student t-tests for related measures were computed. Masculine play and one-specific play were treated separately within each group and comparisons were made using these two variables' values to determine if there were significant differences in performance within groups between the two observation periods. Significant

TABLE 11

2 x 2 ANALYSIS OF VARIANCE - NON-SPECIFIC PLAY (NS) FOR MALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	9115.257	2	4567.6285	4.8132*	
Experimenter Sex	1041.6672	1	1041.6672	1.1001	<.12
Father Status	8073.5898	1	8073.5890	8.5266*	
Two-Way Interaction					
Experimenter Sex x Father Status	12041.6563	1	12041.6563	12.7173**	
Within Cell Error	53025.5097	56	946.8841		

*p < .005
*p < .005
**p < .001

TABLE 12

MEAN AND STANDARD DEVIATION SCORES FOR NON-SPECIFIC PLAY II - MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	28.467	25.261
EM-FP	33.599	42.766
EF-FA	65.133	32.124
EF-FP	13.600	16.982

differences did exist within the two father-present treatment groups, EM-FP and EF-FP. Within the first of these groups, significant differences exist in both free-play measures; non-specific play(t = 2.58; df = 14; $p < .05$) was greatest in the second period of observation. Masculine play was greatest in the first time period for this group(t = 1.978; df = 14; $.10 \quad p < .05$), but within the EF-FP group these trends for masculine play(t = 2.164; df = 14; $p < .05$) and non-specific play(t = 3.056; df = 14; $p < .01$) were reversed.

The Gender Behavior Inventory for Boys (Bates, et al, 1973) data were also subject to univariate analyses of variance and post hoc group mean comparisons. High scores on the first factor indicate overt feminine behavioral characteristics, and the results of the ANOVA for this factor are presented in Table 13. It can be seen that there is a significant interaction between the independent variables (F = 7.2906; df = 1,56; $p < .01$). The largest group mean appeared in the EM-FP group, while the lowest mean score was in the EM-FA group (see Table 14). The power of the two non-significant F-tests for main effects were $< .12$ and $< .06$.

According to Bates, et al(1973), high Factor II scores suggest an extroverted, physically active, masculine orientation. Table 15 reports the results of the ANOVA for this factor, and although the E sex variable appears significant(F = 43.9135; df = 1, 56; $p < .001$), this result is probably artifactual as E sex did not vary on the GBIB(as only mothers completed the questionnaire). Factor III was designed as an index of behavioral disturbance, and high scores are associated with father absence in boys; results of an ANOVA

TABLE 13

2 x 2 ANALYSIS OF VARIANCE - GBIB FACTOR I FOR MALE SUBJECTS

Source	SS	df	MS	F	$1-\beta$
Main Effects	120.532	3	40.1773	.5071	
Experimenter Sex	52.266	1	52.266	.2961	<.12
Father Status	68.266	1	68.266	.3809	<.06
Two-Way Interaction					
Experimenter Sex x Father Status	1306.665	1	1306.665	7.2906	
Within Cell Error	10036.594	56	179.225		

TABLE 14

MEAN AND STANDARD DEVIATION SCORES FOR GBIB FACTOR I - MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	30.599	12.403
EM-FP	42.067	18.238
EF-FA	41.799	13.278
EM-FP	34.599	7.356

TABLE 15

2 x 2 ANALYSIS OF VARIANCE - GBIB FACTOR II FOR MALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	4256.1646	3	1418.7215	10.4268*	
Experimenter Sex	4050.8147	1	4050.8147	29.7713*	
Father Status	205.3499	1	205.3499	1.5092	<.12
Two-Way Interaction					
Experimenter Sex x Father Status	7.3500	1	7.3500	.0540	>.99+
Within Cell Error	7619.6064	56	136.0644		

*p < .001

TABLE 16

MEAN AND STANDARD DEVIATION SCORES FOR GBIB FACTOR II - MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	45.467	8.434
EM-FP	41.067	10.278
EF-FA	61.200	12.439
EF-FP	58.200	14.586

on this factor appear in Table 17. No statistically significant differences were noted; the power of the F-tests for E sex and father status were $<.18$ and $<.06$ respectively, and the interaction of the independent variables revealed a power of $<.26$.

Results with Female Subjects

To assess the effects of the treatment conditions on the ITSC scores for females, a 2 x 2 analysis of variance was used. The effect of experimenter-sex appears statistically significant ($F = 6.2144$; $df = 1, 56$; $p < .05$), but the father status and interaction effects fell short of statistical significance (see Table 19) with a statistical power of $<.06$ and $<.76$ respectively. Further scrutiny of the experimenter sex effect using the HSD test revealed that female subjects with male experimenters tended to emit more feminine responses than the groups with female experimenters (refer to Table 20).

Group differences for feminine play (I) (previously defined), were analyzed using a 2 x 2 ANOVA, and the results are presented in Table 21. The only statistically significant finding in these computations was the interaction between the two independent variables ($F = 4.3911$; $df = 1, 56$; $p < .05$). Further isolation of the significant group mean differences (see Table 22) using the HSD test revealed that the EF-FP group engaged in more feminine play than the EF-FA group; no other significant differences were found using this post hoc comparison of the means. The non-significant F-tests on E sex and father status had a statistical power of $<.06$ and $<.12$ respectively.

TABLE 17

2 x 2 ANALYSIS OF VARIANCE - GBIB FACTOR III FOR MALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	274.4317	3	91.4772	.5477	
Experimenter Sex	260.4153	1	260.4153	1.5592	< .18
Father Status	14.0164	1	14.0164	.0839	< .06
Two-Way Interaction					
Experimenter Sex x Father Status	2.0160	1	2.0160	.0121	< .26
Within Cell Error	9352.8904	56	167.0159		

TABLE 18

MEAN AND STANDARD DEVIATION SCORES FOR GBIB FACTOR III - MALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	38.133	11.115
EM-FP	37.533	16.243
EF-FA	34.333	5.381
EF-FP	33.000	15.866

TABLE 19

2 x 2 - ITSC SCORES FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	3588.5318	3	1196.1773	2.0716	
Experimenter Sex	3588.2651	1	3588.2651	6.2144*	
Father Status	.2667	1	.2667	.0005	<.06
Two-Way Interaction					
Experimenter Sex x Father Status	749.0657	1	749.0657	1.2973	<.76
Within Cell Error	32334.8312	56	577.4077		

*p <.05

TABLE 20

MEAN AND STANDARD DEVIATION SCORES FOR ITSC - FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	27.133	10.589
EM-FP	20.200	16.205
EF-FA	35.533	27.023
EF-FP	42.733	34.708

TABLE 21

2 x 2 ANALYSIS OF VARIANCE - FEMININE PLAY (I) FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	1824.3321	3	608.1107	.6112	
Experimenter Sex	160.0667	1	160.0667	.1609	<.06
Father Status	1664.2654	1	1664.2654	1.6727	<.12
Two-Way Interaction					
Experimenter Sex x Father Status	4369.0625	1	4369.0625	4.3911*	
Within Cell Error	55718.5496	56	994.9741		

*p < .05

TABLE 22

MEAN AND STANDARD DEVIATION SCORES FOR FEMININE PLAY I - FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	53.667	25.589
EM-FP	47.133	33.183
EF-FA	39.867	30.738
EF-FP	67.467	35.765

In Table 23, the results of the ANOVA for non-specific play(I) are presented and no statistically significant F values were obtained; post hoc group mean comparisons also supported this finding. The power of these F-tests for E sex, father status and the interaction term were all $<.06$. The second series of play observations were also subject to analyses of variance, and the results of these statistical tests are presented in Tables 25 and 27. It can be seen that for feminine play (II) and non-specific play (II), there are no statistically significant differences between group means; in fact, the differences that do exist are quite small as confirmed in the HSD test. F-tests for E sex, father status and their interaction had statistical powers of $<.12$, $<.36$, and $<.76$ respectively for feminine play and $<.12$, $<.06$ and $<.12$ for non-specific play.

As was done for the free-play data with male subjects, individual Student t-tests for related measures were completed for non-specific and feminine play. The t-tests compared results of the first and second ten-minute observation periods within each of the two dependent variables. The significant t-tests indicated that feminine play was significantly more prevalent in the EM-FP group($t = 2.446$; $df = 14$; $p < .05$) during the second ten-minute period of free-play; time spent in non-specific play was significantly greater during the first period for the EM-FA group($t = 1.8$; $df = 14$; $.10 > p > .05$).

Factor I of the Gender Behavior Inventory for Boys(Bates, et al, 1973) was constructed such that high scores are associated with an overtly feminine behavioral repertoire. The 2 x 2 ANOVA summary table for this variable is presented in Table 29 and no significant

TABLE 23

2 x 2 ANALYSIS OF VARIANCE -NON-SPECIFIC PLAY (I) FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	194.999	3	64.9997	.0958	
Experimenter Sex	.600	1	.600	.0008	< .06
Father Status	194.399	1	194.399	.2866	< .06
Two-Way Interaction					
Experimenter Sex x Father Status	15.000	1	15.000	.0221	< .06
Within Cell Error	37978.9088	56	678.1948		

TABLE 24

MEAN AND STANDARD DEVIATION SCORES FOR NON-SPECIFIC PLAY - FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	22.467	17.711
EM-FP	27.067	27.523
EF-FA	23.667	25.229
EF-FP	26.267	31.703

TABLE 25

2 x 2 ANALYSIS OF VARIANCE - FEMININE PLAY (II) FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	7222.1611	3	2407.3870	1.813	
Experimenter Sex	1242.1494	1	1242.1494	.9372	<.12
Father Status	5980.0117	1	5980.0117	.0381	<.36
Two-Way Interaction					
Experimenter Sex x Father Status	1570.8154	1	1570.8154	.2810	<.76
Within Cell Error	274225.2952	56	1325.4517		

TABLE 26

MEAN AND STANDARD DEVIATION SCORES FOR FEMININE PLAY II - FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	58.399	36.365
EM-FP	68.133	40.483
EF-FA	39.067	33.525
EF-FP	69.267	34.880

TABLE 27

2 x 2 ANALYSIS OF VARIANCE - NON-SPECIFIC PLAY (II) FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	1250.1631	3	416.7210	.5296	
Experimenter Sex	828.8145	1	828.8145	1.0534	<.06
Father Status	421.3486	1	421.3486	.5355	<.06
Two-Way Interaction					
Experimenter Sex x Father Status	410.8147	1	410.8147	.5521	<.12
Within Cell Error	44062.6648	56	786.8333		

TABLE 28

MEAN AND STANDARD DEVIATION SCORE FOR NON-SPECIFIC PLAY (II)
FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	11.667	14.186
EM-FP	22.222	36.888
EF-FA	24.333	22.167
EF-FP	24.399	33.075

TABLE 29

2 x 2 ANALYSIS OF VARIANCE - GBIB FACTOR I FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	59.3333	3	19.7778	.0635	
Experimenter Sex	24.0667	1	24.0667	.0773	< .06
Father Status	35.2666	1	35.2666	.1133	< .06
Two-Way Interaction					
Experimenter Sex x Father Status	493.0662	1	493.0662	1.540	< .26
Within Cell Error	17431.3104	56	311.2734		

TABLE 30

MEAN AND STANDARD DEVIATION SCORES FOR GBIB FACTOR I - FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	51.200	17.420
EM-FP	43.933	18.779
EF-FA	46.733	19.649
EF-FP	50.933	14.245

differences appear to exist within the group means; this is further substantiated by the HSD test; the power of the F-tests for E sex was > .99 and for the interaction of these two variables it was .94. High scores on Factor II of the GBIB typically represent a masculine gender-identity and the ANOVA summary for this factor is presented in Table 31. In this analysis, both the Main Effects ($F = 4.3548$; $df = 3,56$; $p < .01$) and the Experimenter Sex variable ($F = 12.7468$; $df = 1.56$; $p < .01$) were significant; the power of the F-tests for father-status and E sex x father-status was $< .06$ and $< .18$ respectively. Although the HSD test revealed the significance to lie between the EM-FP and EF-FA, EF-FP groups (with the latter having significantly higher mean scores), it must be noted that since E did not administer the GBIB these results must be considered artifactual.

Factor III of the GBIB (behavioral disturbance scale) was also used in computing the effects of the experimental manipulations and no statistical differences were found for Main Effects, the independent variables or their interaction and calculation of the power of these F-tests found $1-\beta$ to equal .06, .06 and .12 respectively. Post hoc group mean comparisons further confirmed this finding.

TABLE 31

2 x 2 ANALYSIS OF VARIANCE - GBIB FACTOR II FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	2226.1656	3	742.0552	4.3548*	
Experimenter Sex	2172.0156	1	2172.0156	12.7468*	
Father Status	54.1500	1	54.1500	.3178	<.06
Two-Way Interaction					
Experimenter Sex x Father Status	799.3490	1	799.3490	.0346	<.18
Within Cell Error	9542.2320	56	170.3970		

*p < .01

TABLE 32

MEAN AND STANDARD DEVIATION SCORES FOR GBIB FACTOR II - FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	46.733	15.383
EM-FP	37.533	15.892
EF-FA	51.467	11.249
EF-FP	56.867	8.114

TABLE 33

2 x 2 ANALYSIS OF VARIANCE - GBIB FACTOR III FOR FEMALE SUBJECTS

Source	SS	df	MS	F	1-β
Main Effects	177.9333	3	59.3111	.4034	
Experimenter Sex	81.6661	1	81.6661	.5556	< .06
Father Status	96.2672	1	96.2672	.6549	< .06
Two-Way Interaction					
Experimenter Sex x Father Status	123.2673	1	123.2673	.8386	< .12
Within Cell Error	88231.7704	56	146.9959		

TABLE 34

MEAN AND STANDARD DEVIATION SCORES FOR GBIB FACTOR III - FEMALE SUBJECTS

Group	Mean	Standard Deviation
EM-FA	38.799	16.354
EM-FP	38.467	10.756
EF-FA	33.599	11.507
EF-FP	39.000	8.511

CHAPTER IV

Discussion

The purpose of the present study was to explore the possible effect the experimenter's sex might have on measures of gender-identity; attempts were made to isolate this effect for father-present and father-absent children of both sexes. Gender-identity was assessed using three procedures yielding a total of eight dependent variables.

The data appear to substantiate the hypothesis that both male and female subjects are significantly influenced by the experimenter's sex within certain test-taking situations and assessment procedures (specifically the ITSC and free-play), however it did not replicate the reported findings (Herzog and Sudia, 1973) that father status significantly influences the results of standardized tests of gender-identity. Despite these findings, relationships between treatment conditions and individual dependent variables were identified.

Before a more thorough analyses of the statistical results is undertaken, it is important to consider the qualitative data from the study. Whereas most of the children were unremarkable in their attitude toward the administration of the ITSC, many of the ten and eleven year old subjects were conspicuously bored and uninterested in the toy selection during the second play period. In general, the first play period was entertaining as all children examined the various toys and were easily occupied in solitary play, but these activities waned during the second ten minutes. The choice of free-play rather

than forced choice play procedure(i.e. Rabban, 1960), was based on the need for a continuous measure of toy preference which could be dynamically influenced and modified during the observation period; furthermore, the contrived notion of absolute choice can only obscure relevant data concerning relative preferences.

Although Borstelmann(1961) found no significant effects of E's sex in his study of gender-identity, such an effect was found in this study on the ITSC and one measure of free-play; there was no significant effect for father status or the two way interaction of the independent variables. This is in direct contrast with most of the previously reported research(Stolz, et al, 1954; Biller, 1971, 1974), although some authors have maintained that differences between father-absent and father-present children are not always reliably demonstrable(Miller, 1961; Greenstein, 1966).

Borstelmann's (1961) study was specific in investigating the effect of experimenter sex on the results of the IT Scale for Children(Brown, 1956). While he found no significant differences for the experimenter sex variable, the present study does identify such effects for male subjects, thus supporting the statement in Hypothesis 1M that such differences would be significant. Neither father status nor the interaction of the independent variables were found to be statistically significant variables. Examination of Table 4 indicates that the ordering of the group means was not as predicted; the EM-FP group obtained the lowest group mean score.

Further scrutiny of the F test for father status indicates a relatively low statistical power(< .12). Given this low probability of identifying significant effects of the variable within the present experimental methodology, the probability of identifying such effects within a larger sample cannot be dismissed. Such findings might also significantly effect the interaction of the independent variables, which in this study was not significant, but the F test was more powerful(<.57).

The statistical analysis of the first free-play period revealed significant effect for the main effects of the study, but none of the specific F tests for the individual independent variables were statistically significant. Analysis of this finding utilizing the levels of statistical power to be found in Table 5 indicate that these non-significant findings are not necessarily reliable and data could be gained by further studying Hypothesis 2M. Review of Table 9 further substantiates this assertion for the second play period, but within that Table, the interaction of the independent variable is highly significant; this finding will be further discussed below.

Non-specific play was incorporated into the present assessment procedure to allow the study of non-sex-typed play in children; it would appear that the male subject sample was significantly influenced by both independent variables within this dependent measure. Review of Table 8 reveals that the father-absent groups (as a whole) spent the greatest amount of time in non-specific play; more specifically,

the EF-FA group spent the most time in such activities. Hypothesis 3 M, which addresses this body of data, predicts such results due to the likelihood that in the presence of a female experimenter father-absent boys could play with feminine toys in an atypical manner and meet society's proscriptions, the experimenter's (assumed) approval and the boy's own desires. That such behavior was more evident in the EF-FA group lends further credence to the significance of the experimenter's sex in (some) measures of gender-identity in father-absent males. It should also be noted that the EM-FP group spent the least amount of time in non-specific play and, combined with the aforementioned results, supports the findings of Allen, et al (1970) and Stevenson, et al (1963); these authors found that male Es inhibit responding (to an irrelevant task) in male Ss, whereas the reverse is true for female Es. Table 11 presents similar, though not identical, data for non-specific play in the second period of free-play.

It is important to reiterate that the non-specific play measure was incorporated into the present study to allow measurement of gender-identity without using mutually exclusive gender specific measures. The utility and importance of such procedures have been previously addressed by Biller and Liebman (1971) and Bates, et al (1973), but not within the context of free-play procedures. The introduction of culturally accepted male dolls further is thought to have allowed the male subjects to express themselves affectively without arousing the high degrees of anxiety often associated with cross-gender behaviors.

The methodology of the present study allowed further scrutiny of free-play procedures by comparing data obtained during the first and second half of the free-play observation period. Sidman (1960) has

suggested the need to assess such effects if one is to avoid methodological flaws and artifactual data. Hypotheses 4 M and 5 M, which are rejected, suggest that no significant differences exist when one compares, respectively, the masculine and non-specific play data. Within the EM-FP group, such warm-up effects existed within the masculine play and the non-specific play measures. Masculine play was more common in the first measurement period, and non-specific play was greatest in the second period. This finding can be explained within the context of the boys initially fulfilling an expectancy consistent with their own behavioral repertoire (masculine gender-identity), but later experimenting with more novel and culturally proscribed toys; such behavior might also have been initiated later in the session as the subjects learned the non-evaluative and non-threatening nature of the task.

Within the EF-FP group the opposite was true and non-specific play was more common in the first observation period. If it is accepted that subjects in ambiguous role-related experimental situations utilize all possible situational cues in choosing responses (Masling, 1966), such effects can be explained. Boys might wish to engage the female observer in their play by making it gender non-specific, but upon determining the non-participatory nature of E's role, the children should resort to play consistent with their gender-identity (masculine).

Although the primary purpose of the present study was to examine the effects of E's sex on the measurement of gender-identity, attempts were also made to systematically replicate the report of previous

authors that father-absent boys differ significantly from their father-present peers on a variety of empirical measures. One such recently developed instrument, the Gender Behavior Inventory for Boys (Bates, et al, 1973) was selected for use since it utilizes measures of behavior to assess gender-identity while not considering masculinity and femininity as orthogonal concepts. The GBIB, as this scale is known, is a parent-completed behavioral checklist and therefore ostensibly not suseptible to the effects of E's sex. It is therefore difficult to attribute significant E sex effects in Factor II (Table 14) to the present methodology; rather, such effects would appear to be artifactual in origin. Examination of Table 12 and 13 indicate significant interaction effects between the independent variables but such effects do not appear to be systematic and are therefore difficult to explain.

The failure of the GBIB to identify significant effects for father status is surprising given the rigorous construction and validation of the scale reported by the authors; however, the statistical power of the non-signifcant univariate F tests on each of the three factors was low (see Tables 14, 16 and 18), suggesting the need for further study in this area. However, careful review of the Bates et al (1973) study suggests a possible explanation for these non-significant findings. Although designed as a measure of normal and deviant gender-identity, the inventory was standardized on a clinical subject sample. Although Biller (1971) and others have found that father-absent boys show a higher incidence of behavioral and emotional

difficulties than their father-present peers, those father-absent children assessed in the present study were an exclusively, non-clinical sample; one child was dropped from the study due to his prior history of psychiatric treatment. Apparently, the Bates et al (1973) study utilized not only a clinic sample but chose only those children with gender-identity problems; the lack of significant differences between groups is therefore not surprising as the present treatment groups could not be differentiated on the basis of incidence or severity of emotional difficulties. It could be suggested that if the present findings are substantiated and a parent questionaire is to be used in future research with a non-clinical sample of father-absent children, the GBIB might be ill-suited for such purposes.

Certain anecdotal observations concerning the female subject sample should be reported prior to the discussion of the more empirical and objective data. The girls differed from the boys in their approach to the play session; the girls' play was calm and generally dealt with social and interpersonal situations as recreated through doll (and van) play. The boys showed a greater propensity for play which generated a high level of activity; in addition the boys' play was most often related to an aggressive theme. These differences are reported in previous research and the reliability of such observations obviates the need for comparing the male and female data in this study.

Analysis of data from the female subject sample revealed that the sex of E was significant in effecting performance on the ITSC whereas father status and the interaction of the variables have

non-significant effects. Thus, Hypothesis 1 F is rejected. Unlike the situation in discussing the results with male subjects, the effect of father status on gender-identity in preadolescent girls is poorly documented(Herzog and Sudia, 1973), and it is therefore not possible to contrast the present results with previous data.

Observations of test taking performance during the ITSC yielded no overt behavioral differences between male and female subjects. For this subject sample of girls, E's sex significantly influenced the results of the test; it should be remembered that this finding is in contradiction to Borstelmann's(1961) report that such effects are not statistically significant. Hypothesis 1 F, a non-directional hypothesis presented in the null form, suggests that such effects exist and is partially substantiated; scrutiny of Table 20 delineates such E sex effects further. It would appear that when tested by a male E, father-absent girls are more masculine than their father-present peers, but no overall father status effects were significant nor was the interaction of the two independent variables statistically significant.

Consideration of the statistical power of the non-significant F tests indicate that it is probable such effects are non-existent for the interaction of the independent variables, but the father status effects require further study with this type of female subject sample. The finding that the father status variable is not a significant influence on ITSC scores is somewhat

unexpected and the paucity of previous literature investigating the effect of father-status on ITSC scores in a female subject sample makes an interpretation of such results tentative. However, one can refer to Brown's original study of the ITSC (1956) and compare the groups mean he obtained for females with the scores in the present study; for both the father-present and father-absent groups in the present study the mean score is approximately 31.5 compared to Brown's (1956) report of a mean score of 38.4 with a standard deviation of 22.2. Consideration of this data would lead the present author to suggest that within the present methodology, the ITSC scores for females are not influenced by father-status and the observed scores are somewhat consistent with previously reported mean scores for females (i.e. Brown, 1956; Schell and Silber, 1968; Bigner, 1972), although considerably lower mean scores have been reported elsewhere (i.e. Lansky and McKay, 1963). Further study into the effects of father-status on the ITSC scores in preadolescent females would appear essential if closure is to be reached on the nature or absence of such effects.

The results of the two free-play periods also bear careful consideration if the effects of the present methodology are to be compared to previous findings. Play sessions have been used to assess gender-identity in females (i.e. Rabban, 1950) and father-absence has been associated with aggressive "masculine" doll play. This aggressive doll play found in father-absent groups of girls did not occur in the present study, but this could, in part, be due to the methodology utilized. If aggressive doll play were emitted and if it was enacted with feminine toys (or the G.I. Joe doll), it would have been scored as non-specific play. The results of the statistical analysis for

this dependent variable (observations I and II) revealed no significant effects for either E's sex or father-status and therefore Hypothesis 4 F cannot be rejected.

Interestingly, there were significant differences revealed when within group comparisons were done using the two observation periods as repeated measures of the two dependent variables for play. Feminine play was most common in the first period for the EM-FP group while non-specific play was more common in the first period than the second for the FM-FA group; Hypotheses 5 F and 6 F are therefore rejected. It was previously noted that sex-typed play might be predicted for the intact family group and as fathers are reported to strongly reinforce affective behavior in their daughters (Johnson, 1963), the results of the EM-FP group are readily explainable. A girl would enter the play session expecting positive feedback for feminine behaviors only to find the absence of such feedback; this expectation unfulfilled, it is not surprising that the child would eventually attend to other, equally attractive toys.

The girls in the EM-FA group were presented with a similar situation as they entered the play situation. Presumably not having the same expectations of being reinforced by a male E for feminine play, they might play with any or all of the toys which were attractive. This type of play pattern would result in much experimentation and what was defined as non-specific play in this study. As interest in the novelty of the play situation and its freedom waned, the child might be expected to lose interest in novel play patterns and resort to

sex-typed play (masculine or feminine) or no play at all, which was encountered with some subjects.

The Gender Behavior Inventory was included in this study for the reasons previously noted; Bates, et al (1973) designed the inventory for use in assessing gender-identity and included measures of femininity as well as masculinity. The three factors of this inventory included in the present study did not differentiate between father-absent and father-present girls, but did reveal significant effects for E's sex. As E did not administer the scale or meet with the childrens mothers who did complete it, this effect is of unknown origin and cannot be further explicated; Hypotheses 7 F, 8 F and 9 F cannot be rejected.

The major tenet of this study was to demonstrate that the sex of an experimenter significantly alters the results of measures of gender-identity; particular attention was paid to these effects within a stratified population of father-present and father-absent children. Borstelmann (1963) investigated the effects of E's sex within a small sample of father-present children and found no significant effects on measures of gender-identity. The present study did not replicate these results, nor were consistent E sex effects found. Rather, it was found that within a battery of tests designed to measure gender-identity, significant effects of E sex do exist but not within every such measure.

Rosenthal and Rosnow (1969) have discussed the possibility of significant interactions between the sex of E and S's sex within the various methodologies used in psychology. They state that even using repeated measure designs (with E sex as the independent variable), the results of data collection with a single subject can often appear to be from two different experiments. Although the authors label this effect artifactual, other reports suggest a more consistent phenomena (Rosenthal, 1967; Rosenthal and Jacobson, 1968). Despite these reports, it has been found that most journal articles in the area of sex-role or sexual stimuli fail to report the sex of E; fewer still have attempted to discern the effects of this variable (Harris, 1971).

Benney, Reisman and Star (1956) viewed the possible interactions of the sex of S and the sex of E as an important area which was a legitimate area for psychological and sociological research. Rosenthal (1966) addressed not only the effects of E's sex, he also reported differences in S's responding to same-sex Es; furthermore, effects of experimenter's sex were reported even in the absence of E's physical presence. Glixman (1967) has also reported significant interactions between the sex of S and E and these effects were viewed as intruding on intrapersonal factors (i.e. gender-identity).

Although a tentative formulation concerning the effects of E's sex can lead to accurate prediction in experimental studies (Masling and Harris, 1969; Harris and Masling, 1970) the pervasiveness and generality of such effects are not universally accepted. Barber, et al (1969) studied the experimenter bias effect (EBE) reported by

Rosenthal (1967), but found several procedures within which the EBE could not be replicated. Levy (1969) also challenged the ubiquity of the EBE, and noted that specific demonstrations of EBE do not make it universal; it is further suggested that such effects might be situational or test-related. The lack of systematic E sex effects in the present study suggests that Barber, et al (1969) and Levy (1969) interpretation of the EBE is a credible formulation.

Johnson (1976) has suggested the need to study the effects of E characteristics, such as sex and age, within experimental paradigms which allow the evaluation of independent variable interaction effects; the author strongly advocates that such studies should consist of varied tasks and be cautiously scrutinized. It is not paramount that Type I statistical errors be greatly minimized; rather, Johnson advocates an answer to the question "is the effect pervasive?". The results of the present study indicate that such effects are highly variable and not pervasive.

Limitations of the Present Study

While the present methodology was an attempt to determine the influence of an experimenter's sex on measurement of gender-identity in preadolescent boys and girls, it was also designed as a critique of the lack of rigor in previous gender-identity research. Variables which were not manipulated in the present study included socio-economic status, sibling sex and groupings and factors related to parent personality characteristics. Each of these variables appear of potential relevance when considering the assessment of gender-identity and factors leading to its development.

Socio-economic status (SES) was to have been held constant in the present study, but this proved impossible given the geographic restrictions placed on the subject sample by the author. Rather than testing children of both rural and urban background to obtain 100 per cent of the sample in the poverty SES category, the author felt the rural/urban dichotomy would further taint the findings, and therefore the present sample was used. Although a supplementary analysis of covariance is possible within the present design, it is not possible to determine the SES of the 29 per cent of families not in the welfare category and therefore such an analysis was not completed. Control of sibling and parental characteristics was beyond the aim of this study, but does appear an interesting area for further investigation.

These limitations could be identified by reviewing the previous literature, but several other methodological inadequacies were noted during the course of the study. The instruments used to measure gender-identity introduce an unavoidable artificiality to the concept, but the IT Scale for Children and free-play situation seemed adequate as research tools; the Gender Behavior Inventory for Boys was not well-suited for this purpose. Because it is oriented more toward clinical than heuristic purposes, one must look elsewhere to find a useful, objective checklist for parents or teachers. Such checklists are needed if the findings of the researcher are to be compared with an objective assessment in a more naturalistic environment; preferably such a checklist will not view masculinity and femininity as mutually exclusive characteristics.

SUMMARY AND CONCLUSIONS

The present study sought to demonstrate the possible significance of the experimenter's sex in studies utilizing measures of gender-identity in a preadolescent population; the methodology used also included father status (absence or presence) in a well-controlled two factor design. Such an investigation was predicated on the need to carefully examine previously reported research in which E's sex remained uncontrolled and often unreported; the significance of E's sex as an intervening variable on certain measures within the present study reaffirms the need for more adequate methodological controls in future research. It also suggests that previous reports relating to preadolescent gender-identity may have been spuriously accepted. Although many predicted results were not confirmed, the present results do portend more carefully controlled studies into gender-identity development.

Within what Biller(1974) has called the most widely used instrument to measure a child's gender-identity (ITSC) there are significant effects fo E's sex for both male and female subjects. As most studies in which children participate utilize this instrument, the findings of those studies bear reconsideration. In the present study it is significant that even when the Brown (1956) procedure for administering the ITSC was modified to reduce biases reported as intrinsic to the scale(i.e. Fling and Manosevitz, 1972), other biasing effects were found. Only Borstelmann(1961) has attempted to study such effects previously, and his subject sample did not include father-absent children. Finally, it is interesting that father status was

not significant within the present methodology; this cannot be explained, but does indicate a need for careful consideration of the past and present finding as previous reports suggest that conditions of father-absence have well-established and notable effects on boys.

The free-play procedure is also widely used as a measure of gender-identity and also seems susceptible to a variable influence due to E's sex and the interaction of this factor and father-status. As such, the need to report data on E and S might significantly influence the consistency and replicability of research findings. Furthermore, the need for a non-sex-typed play category is indicated as many children utilized this play category during the sessions; it also allowed a less radical measure of non-typical play than that provided by the opposite sex-type play category. As evidence also exists to support the presence of warm-up effects in play sessions, the choice of the dependent variable and its recording must not be accomplished without considering such factors.

The GBIB (Bates, et al, 1973) was found ill-suited for use in assessing the gender-identity of children in the present study; its applicability appears more limited to the clinical population for which it was originally designed. Future studies should attempt to utilize an objective checklist type scale to add a more strictly behavioral measure of gender-identity; although Biller and Liebman (1971) have developed such a questionnaire, it is not designed as an objective, empirical measure. The second questionnaire used in the present study was designed to select or eliminate subjects from the

sample available, it was not such a measurement instrument.

Female subjects were included in this study to determine the nature of father-absent effects within that population; the effect of E's sex was also studied. It appears that if effects of father-absence are present in females, they are not revealed in this study. It might be that such effects are less obvious than in males and more related to non-verbal behaviors. It is also possible that the assessment procedures were not appropriate for certain populations, including preadolescent girls, and this remains a fertile area for further research (Brush and Goldberg, 1978).

While the present study failed to replicate previous findings reporting the effects of father-absence on young children, it does underline the need to control S and E variables in research investigating gender-identity and related areas of social functioning. It is hoped that future research will confirm or deny the salience of such factors in a father-absent population of children of both sexes. The ITSC appears sensitive to such effects, as do various measures of play preference. Such effects do not appear to be systematic and do not lend themselves to accurate prediction of results, but if considered artifactual, the effects seem to require that more carefully controlled studies be used to examine previous findings. Artifactual effects can be intrinsic to particular experimental methodologies, experimenter, situational or subject variables, but the demonstration of statistical significance within the present results should be a reminder that the effect of interpersonal factors (i.e. E's sex) must be controlled in

studies of psycho-social phenomena. That a factor such as the experimenter's sex could remain uncontrolled and unreported in a body of literature as extensive as that for gender-identity in preadolescents, represents a serious question which must be addressed in future research; it remains to be seen within which dependent variables measuring gender-identity these effects exist.

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APPENDICES

APPENDIX A

LA FACULTÉ DE PSYCHOLOGIE
UNIVERSITÉ D'OTTAWA
1245, AVE KILBORN
OTTAWA, CANADA
K1H 6K9

THE FACULTY OF PSYCHOLOGY
UNIVERSITY OF OTTAWA
1245 KILBORN AVE.
OTTAWA, CANADA
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Southwood, Station A
St. Lawrence Psychiatric Center
Ogdensburg, New York 13669
February 11, 1977

Dear Sirs:

I am presently involved in completing my doctorate in Clinical Psychology at the University of Ottawa. In this process, I am required to write a doctoral thesis on a contemporary issue in Child/Developmental Psychology, and I have an interest in studying the effects that one-parent families have on emotional and social growth in pre-adolescent children. To that end, I have contacted the St. Lawrence County Department of Social Services for permission to study their one-parent families; this has been approved by the County and the individual parents.

Several of the children who I will be studying are enrolled in your elementary school, and I would like to request the possibility of obtaining your permission to interview each child once for approximtely forty-five minutes at the school. This would be greatly appreciated as it would be convenient from my perspective and least disruptive to the child. Of course, I would give appropriate recognition to your school in the final thesis and will also provide you with any feedback on a particular child after parental permission has been obtained.

I would appreciate hearing from you concerning this matter. I anticipate beginning the study in April, and can be reached at the return address noted above, or at the St. Lawrence Psychiatric Center (315-393-3000, Ext. 256) during working hours. I look forward to your response in the near future.

Sincerely,

David Coron, M.A.
Child-Clinical Doctoral Intern
Psychology

DC/gmh

Dear Parent:

This is to notify you of my intention to meet with your child and you on _____ at _____. I would appreciate it if you would come to the Main Office of your child's school and I will meet you there.

It is my understanding that the St. Lawrence County Department of Social Services has contacted you in regard to this study and has obtained your permission for your child's participation. If there has been any change in your willingness to participate in this study please advise me as soon as possible at the following number: (315-393-3000, Ext. 256) or the address listed below.

I will look forward to meeting both you and your child at the time and date noted above. Thank you for your cooperation.

Sincerely,

David Coron
Child Clinical Psychology Intern
St. Lawrence Psychiatric Center
Station A
Ogdensburg, New York 13669

Dear _____:

In regard to your reply to my letter requesting assistance in the completion of my doctoral thesis, I would like to now inform you that my plans call for the testing of the following individuals, on _____.

_____

_____

_____

_____

_____

_____

I wish to notify the parents of this schedule so that they will be able to make arrangements to meet me at your school at the respective time noted above. I have therefore enclosed form letters to be sent home with the children, if that is acceptable. I look forward to meeting you when I am at the school, and hope I can answer any further questions you might have in regard to my study. If there are any problems with either the dates, times or method of parental notification, please advise me immediately and I will certainly accommodate your wishes.

Respectfully,

David Coron
Child Clinical Psychology Intern
St. Lawrence Psychiatric Center
Station A
Ogdensburg, New York 13669

DC/gmh

Enclosures

APPENDIX B

NAME:_____ NUMBER:_____

Please fill this out so each answer tells how often the description fits your child.

IF THERE ARE EIGHT CHOICES:

(8) Daily; (7) 3-4 Times Per Week; (6) Twice a Week; (5) Once a Week; (4) Twice a Month; (3) Once a Month; (2) Once Every Three Months; (1) Every Six Months or Less

IF THERE ARE FIVE CHOICES:

(5) Always; (4) Very Often; (3) Frequently; (2) Seldom; (1) Never

---

1.	He is good at imitating females	1 2 3 4 5
2.	He likes people	1 2 3 4 5
3.	He acts defiant when given orders	1 2 3 4 5
4.	He dresses sloppily	1 2 3 4 5 6 7 8
5.	He wears a shirt or towel around his waist as a skirt	1 2 3 4 5 6 7 8
6.	He is popular with other boys	1 2 3 4 5
7.	He has temper tantrums	1 2 3 4 5 6 7 8
8.	He sides with his father when there is a family argument	1 2 3 4 5
9.	He imitates females	1 2 3 4 5 6 7 8
10.	He tries to make new friends	1 2 3 4 5
11.	He gets into things he shouldn't	1 2 3 4 5
12.	He likes to keep his hair neat and clean	1 2 3 4 5 6 7 8
13.	He "swishes" and swings his hips when he walks	1 2 3 4 5
14.	He is the leader in the games which he plays with other children	1 2 3 4 5
15.	He lies to his mother	1 2 3 4 5
16.	If given a choice, he would prefer being alone with his mother to being alone with his father	1 2 3 4 5
17.	He plays house	1 2 3 4 5 6 7 8
18.	He jumps from heights and across ditches	1 2 3 4 5
19.	He is patient	1 2 3 4 5
20.	He doesn't mind getting himself dirty or greasy	1 2 3 4 5
21.	He prefers the company of adult women	1 2 3 4 5
22.	He performs strenuous activity for long periods of time	1 2 3 4 5
23.	He obeys parental instructions and advice	1 2 3 4 5
24.	If he wants something expensive, like a bicycle, he will ask his mother first	1 2 3 4 5

25.	He likes to dance	1	2	3	4	5			
26.	He likes to be alive	1	2	3	4	5			
27.	He is restless and overactive	1	2	3	4	5			
28.	He dresses in female clothing	1	2	3	4	5	6	7	8
29.	He has a great sense of humor	1	2	3	4	5			
30.	He obeys his father	1	2	3	4	5			
31.	He plays with dolls	1	2	3	4	5	6	7	8
32.	He is physically aggressive	1	2	3	4	5			
33.	He must get his own way in games	1	2	3	4	5	6	7	8
34.	He likes fairy tales like Snow White	1	2	3	4	5			
35.	He is curious and explores things	1	2	3	4	5			
36.	He tells lies	1	2	3	4	5			
37.	He wears things like wigs, towels, and shirts on his head	1	2	3	4	5	6	7	8
38.	He seems to like childrens company more than adults company	1	2	3	4	5			
39.	He is bossy	1	2	3	4	5			
40.	He play-acts, puts on little dramas	1	2	3	4	5	6	7	8
41.	He will keep playing even with torn clothes	1	2	3	4	5			
42.	He cries easily	1	2	3	4	5			
43.	He uses feminine gestures with his hands when talking	1	2	3	4	5			
44.	He enjoys camping, fishing or hunting and hiking	1	2	3	4	5			
45.	He whines and whimpers	1	2	3	4	5	6	7	8
46.	He plays games such as jacks and jump rope	1	2	3	4	5	6	7	8
47.	He is interested in real automobiles	1	2	3	4	5			
48.	He fights	1	2	3	4	5			
49.	He enjoys romantic love stories	1	2	3	4	5	6	7	8
50.	He obeys his mother	1	2	3	4	5			
51.	He pouts	1	2	3	4	5			
52.	At school he plays with girls	1	2	3	4	5	6	7	8
53.	He is easy going	1	2	3	4	5			
54.	He does things with female relatives	1	2	3	4	5			
55.	At home he plays with girls	1	2	3	4	5	6	7	8

APPENDIX C

APPENDIX C: Distribution of Children's Ages

	Father-Present						Father-Absent					
AGE:	6	7	8	9	10	11	6	7	8	9	10	11
MALES:	4	7	6	4	5	4	3	6	5	7	6	3
FEMALES	8	2	7	5	5	3	8	1	7	4	6	4