To the Graduate Council:

I am submitting herewith a thesis written by Elizabeth Joann Murphey entitled "The Effects of First-Born Siblings on the Gender Identification of Second-Born Siblings." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Leonard Handler, Major Professor

We have read this dissertation
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Accepted for the Council:

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Graduate Studies and Research

THE EFFECTS OF FIRST-BORN SIBLINGS ON THE GENDER IDENTIFICATION OF SECOND-BORN SIBLINGS

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ABSTRACT

The present study was designed to look at the effects of older siblings on the gender identification of younger siblings. Four groups of children encompassing all combinations of birth order and gender were selected from a rural school system. Additionally, a modified miniature situations scale (MMS) was devised for the study to measure gender identification. All second-born children were given the MMS scale as well as the femininity scales from the California Personality Inventory—(CPI-Fe). First-born children were only administered the femininity scale from the CPI. Results from the study indicate that birth order is not a factor in the gender identification of younger siblings. However, older siblings with younger cross-gender siblings were found to be significantly more masculine than younger siblings with older cross-gender siblings as measured on the CPI-Fe index. Correlation coefficients obtained from second-born children for scores on the femininity scale of the CPI and the MMS index indicate that the MMS scale can be a useful measure for assessing gender in latency-age children.

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CHAPTER I

INTRODUCTION

In reviewing the literature on sex-role differentiation there is a general acceptance and agreement that the early years are the most important in the development of sex-role orientation. Even so, there is still a great deal of controversy concerning the psychological and psychosocial factors which result in the formation of sex-role identity. Although infants generally come into the world with one assigned sex, research has shown that biological gender does not always correlate with sex-role orientation. Therefore, persons with one biological gender can assume the characteristics of the opposite gender to a greater or lesser degree. With both sexes, masculine and feminine characteristics seem to be distributed across individuals due to a number of factors. Heredity, the effects of parenting, cultural and ethnic standards, socioeconomic status, and the influence of one's peer group have all been cited as factors influencing masculinity or femininity. In addition to the above influences, it has also been hypothesized that birth order affects sex-role orientation. The general effects of birth order have been studied for over fifty years now. Research on factors affecting masculine and feminine traits also has a long history. However, in relatively few instances have these two factors been combined to produce studies on the effects of growing up with an older sibling of the same or opposite sex. The studies that have been conducted have produced inconsistent results and utilized varied measures of masculinity and femininity. This study

hopes to renew the effort by looking at the effects of growing up with an older sibling of the same or opposite sex on the second-born child. Specifically, sex-role orientation will be studied in both siblings to see if there is any effect on the sex-role orientation of the second-born child as a result of the gender of the older sibling.

Social Sex-Role Differentiation

Anthropologists and sociologists tell us that sex-role differentiation is universal among human societies. It appears that this has always been so. Regardless of the geographical location, men and women have always had different functions, rights, responsibilities and privileges based exclusively on their biological gender. Different behaviors have also been expected from males and females, particularly in their interactions with members of the opposite sex.

Most writers attribute this distinction of sex role to biological givens. Although it is not known how or when the family originated, scientists estimate that the family probably evolved between 100,000 and two million years ago (Skolnick & Skolnick, 1977). It is generally accepted that family life benefited by the early human combination of prolonged child care with the need for hunting with weapons over large terrains. The hunters were males because males are physically larger and usually stronger compared with females. The sexual division of labor on which the family was based grew out of a rudimentary prehuman division between male defense and female child care. Among humans, this sexual division of functions became crucial for food production, and formed the basis for future economic specialization and cooperation (Skolnick & Skolnick, 1977).

It is hypothesized that primitive man was more mobile than primitive woman because of her child-rearing responsibilities. Since she breast-fed the child, it was necessary for her to remain in close proximity to the offspring. This left the males to assume the food gathering functions (hunting or planting). Early on, it was the duty of the male to "bring home the bacon," so to speak and the role of the female to prepare the meal and care for the offspring.

Other writers (Gutmann, 1965; Erikson, 1951, 1964) have postulated that in addition to the biological differences in males and females that there are personality differences in males and females as well. These differences are felt to equip each sex to carry out their basic biological functions—men to earn the living and women to rear children. These basic personality differences were felt to be instrumental in perpetuating society's role structure. It is still believed by many that men were destined by nature to be dominant while women were created to be submissive. Men traditionally define themselves through their work; women define and create their identities through supporting the wishes and activities of others (Berger & Wright, 1978).

What was surprising to some, and ignored by others interested in sex-role differentiation, was the diversity among societies as far as how both physical and intrapersonal characteristics were distributed. Societies were described by Mead (1935) in which the women did the bulk of the heaviest physical labor. Mead also reported that there were societies where both men and women were nonaggressive and nurturant and societies where both sexes were ruthless and aggressive. Additionally, she found societies that were a reversal of our Western culture where

women were dominant, impersonal and managing and men were more emotional, less independent and less responsible.

Social scientists have also stated that mothers across cultures play the major role in the socialization of children while fathers are important in providing resources for the family. Parke and Sawin (1976) quote Margaret Mead as having said that "fathers are a biological necessity but a social accident" (p. 365). The father's role in the family has long been viewed as providing secondary support to the mother-child dyad while the mother was the primary caregiver.

Nevertheless, arguments abound regarding sex-role differentiation. At one extreme it is argued that the near-universal similarities in societal arrangements are attributable to the significant differences in the genetic codes of men and women and that these genetic givens also produce differences in personality (Tiger & Fox, 1971). The opposing argument points to the variability among societies and attributes sex-role differentiation to environmental factors as well as biological factors (D'Andradle, 1966). The writers citing the nurture argument note that there are no existing data pointing to personality differences in men and women. Rather, the evidence seems to indicate that personality characteristics are highly malleable. Sex-role differentiation is viewed as being most influenced by the sex-specific child-rearing practices of parents and by the nature and severity of the sex-role differentiation imposed by the society.

Several studies support this tenet. In an ethnographic survey, Barry, Bacon, and Child (1957) found that although there was a general trend for boys to be trained in self-reliance and achievement and girls

to be trained in obedience and nurturance, the degree to which this was so was most related to the economy of the society. The more a society required superior physical strength and motor skills, the more gender-specific was the sex-role differentiation. To support this claim, Haavio-Mannila (1975) surveyed several European countries and noted that the sex-role differentiation, as it related to participation in the labor force, was related to the rate of industrialization.

Once established sex-role differentiations appear difficult to alter because they are taught without equivocation early in children's development. Gradually as the needs of society change, so also do the ways the sexes distinguish themselves. Only under political and social pressure do the changes occur more rapidly.

American Sex-Role Differentiation

According to the traditional concept of the American family, women are homemakers and men are breadwinners. Sex-role differentiation has occurred along these expectations. The more successful the man as a breadwinner, the less successful he was required to be in other areas. Bernard (1981) summed up the history of males as providers in a comprehensive article which stated "Men were judged as men by the level of living they provided" (p. 4). As men have been the sole support of most families, the ability to support one's family well is perhaps the single most important criteria designated to men. Brenton described the risks:

> By depending so heavily on his breadwinning role to validate his sense of himself as a man, instead of also letting his roles as a husband, father, and citizen of the community count as validating sources, the American male treads on psychically dangerous ground. It's always dangerous to put all of one's psychic eggs into one basket. (1966, p. 194)

In our society there has been a clear set of roles prescribed for males and females. Josselyn (1956) notes that across most cultures the mother is almost always the primary caretaker and in our Western culture it is even considered inappropriate for fathers to be nuturant toward their infants. In the main, our society still expects fathers to be detached or uninterested in infants.

Parsons (1958) has emphasized the different roles American parents play with their children. He says the father represents the instrumental parent who models societal norms, ideals, values, competency, and the striving for achievement. He is the link between the outside social system and the family system because he is less tied to child care and more involved with the community. His instrumental role within the home also encompasses major decision making and disciplinary duties. The mother represents the expressive component of the parent role. She is the nurturant, integrative, supportive link in the family system who smoothes relations among family members and sometimes acts to mediate father-child relationships.

Although there have been slow changes in the sexual differentiations of men and women, the largest changes have occurred within the past decade. This sexual division of labor is beginning to change in the industrial society. Prolonged child care ceases to be a basis for female subordination when artificial birth control, spaced births, small families, patent feeding, and communal nurseries allow child care to be shared by men. Automation and cybernation have removed most of the heavy work for which women are poorly equipped. Occupational competence increasingly depends upon formal education and vocational training as

opposed to physical strength and stamina. Additionally, we are changing from an entrepreneurial to a bureaucratic society where there is less emphasis on aggression and dominance and more emphasis on cooperation and cohesion. This in turn affects the models our children have as well as the messages they receive regarding sex role differentiation. It is therefore conceivable that the exploitation of women that came with the rise of the state and of class society will disappear in the future. This suggests that the roles of both men and women are rapidly changing.

The beliefs that men are dominant, thinking beings while women are submissive, feeling beings are also changing. This is due in large measure to the actions of women who refuse to accept the past assumptions and inequities. In the past there has been an asymmetrical nature to the functions of men and women. For women, family involvements have been primary, and work was permitted as long as it did not spill over into family issues; for men, work was primary and it was expected that men's work would spill over into family issues. Now both men and women are expected to invest more of themselves in the sphere that has beforehand been less central for them. Men are being expected to accept increasing family responsibilities while women are entering the labor force in unprecedented numbers.

It is unquestioned that women are entering the labor force as never before. Overall, women make up two-fifths of the American workers. Two-fifths of American women with preschool age children and one-half of women with school age children work. Fathers have now begun to play a more active part in rearing their children. While females still carry the bulk of child care responsibilities—in 1974 the U.S. Department of

Labor reported that 96 percent of all child care workers were female—males are beginning to rear children in unprecedented numbers. In 1977 there were 900,000 children under the age of 18 years living with their fathers, and the Department of Health, Education and Welfare stated that 5,000 of these children were of preschool age. It is estimated that by the year 1985 35 percent of all single-parent children will reside with their fathers. With these increases as well as with the increasing divorce rate, there is a trend for sex role differentiations to be smaller, since each spouse must be prepared to assume the role of the other in the event of their absence.

Within the last 30 years, changes, which have evolved both in the structure of our society and in the nuclear family, have had a profound effect. These changes include the high percentage of married women working outside the home, the smaller number of families that have relatives living in the household, the greater geographic mobility of families, and the increasing specialization of adult jobs (i.e., many children are only vaguely aware of what their parents do for a living, etc.). Most of these changes are beyond our control and represent transformations in society to which we are forced to adapt.

Perhaps the greatest changes in the past two decades is the numbers of women who have entered the work force. Many jobs, formerly reserved for men, are now occupied by women. This new generation of women now takes the concept of equal opportunity for granted. This new-found equality for women seems to indicate that women are abandoning their traditional feminine roles. However, this may not be the case.

As Betty Friedan (1981) notes, there is the feeling that something has gone wrong. Friedan states:

> I know that equality is necessary for women—and opens new life for men. But I hear fears and feelings now that I would not let myself hear before. Perhaps we have denied certain yearnings for fear we would be trapped again in the terrible dependence that was once woman's lot. Yet, if we now suggest that experiences such as motherhood are more important than we wanted to admit, do we deny the necessity of liberation for women? (Friedan, 1981, p. 42)

It would appear that women, having entered the work force, are not at ease adopting the male role model along with the job. This merging of male and female work roles may not necessarily indicate a merging of sex roles for men and women. It would appear that some of the traditional roles of women not only still exist but are becoming more sought after even as women gain more equality with men in the work force.

Theories of Sex-Role Differentiation

Several theorists have examined the differences between males and females. Two theorists, Erikson and Gutmann, have examined fundamental differences between males and females in the way they perceive themselves, express their orientation to the environment and relate to other people.

Erikson (1959) believes that men are instinctually and culturally the more vigorous, active, motoric species, and in terms of psychosocial ego development, their sense of identity is based on achievement and active doing which he calls "constructive intrusiveness." Women, on the other hand, are instinctually and culturally predisposed to be dependent, nurturant, and passive. They tend to sublimate their frustrated and unfulfilled ambitions by becoming more aesthetically rather than intellectually oriented.

Erikson (1951, 1964) states that these gender-related ego style differences are observable in children's play. Boys emphasize outer space and girls emphasize inner space. He states:

> This then is typical: the girls' scene is an interior scene, represented either as a configuration of furniture without any surrounding walls, or by a simple enclosure built with blocks. In the girls' scene, people and animals are mostly within such an interior or enclosure, and they are primarily people or animals in a static (sitting, standing) position. Girls' enclosures consist of low walls, i.e., only one block high, except for an occasional elaborate doorway. These interiors of houses with or without walls, were, for the most part, expressly peaceful. (Erikson, 1964, p. 590)

Erikson concluded that the sexual differences represented by the use of space in play paralleled the morphology of genital differentiation itself: internal organs for the female which include access and statically awaiting ova; external male organs which are erect and intrusive to channel the mobile sperm cells. He talked of boys' play as

> . . . either houses with elaborate walls or facades with protrusions such as cones or cylinders representing ornaments or cannons. There are high towers and there are outside enclosures or buildings, and there are more automatic objects and animals moving along streets and intersections. There are elaborate automobile accidents, but also traffic channelled or arrested by the policeman. While high structures are prevalent in the configurations of the boys, there is also much play with the danger of collapse or down-fall; ruins were exclusively boys' construction. (Erikson, 1964, p. 591)

Gutmann (1965) proposes that male and female ego styles are created by the way each gender views his/her milieu. He believes that the normative male milieu is allocentric, i.e., it is a fragmented haphazard world which must be harnessed by the male to conform to his own unique personality. He states the following concerning the male world.

> Allocentric space tends to be open, a region of channels, pathways, and vistas which do not converge on the self. In general, allocentric space can only be articulated to the self through purposeful movement, through making the scattered paths relevant to self-defined goals. . . .
>
> In the allocentric sphere, relations with others share the general unpredictability of allocentric events. There, others are alien, intent on private goals; the allocentric others are a class of objects, to be tested and investigated as such. Objectifying others thus, we also objectify ourselves, and thereby come to experience our own separateness. . . .
>
> The future is always in doubt in the allocentric milieu, as there the tides of event and influence make it unlikely that the future will be a version of the present. The future is most relevant when it is the most uncertain, and the future orientation is therefore highly appropriate to those who live within the allocentric realm: For them, present security is bolstered by plans; that is, by schemata which represent the future as already mastered, an extension of the present. But the future orientation is not integral to autocentric settings, where the future can be viewed as a continuation of the present and change is seen to proceed from one's own personal or shared purposes. (Gutmann, 1965, pp. 234-236)

Gutmann contends that men inhabit an impersonal world of business, government, and institutions.—a world that is run by impersonal laws of economics or political order. Change and indeterminancy are the keynotes of this world. In order to control their allocentric milieu, males tend to be more pragmatic in the way they see things, more critical of their acceptance of reality, more disciplined, more future oriented and more concerned with erecting barriers between themselves and others.

A female milieu, states Gutmann, is autocentric, i.e., a woman sees it as an extension of her own personality being ordered more or less along the modalities of her personality. He states:

> Autocentric space is enclosed, bounded by allocentric regions where the known gives way to the unknown, and where the web of interpersonal bonds ravels and thins out. By the same token, autocentric pathways, intrinsic to the established communications network, can be experienced as converging towards, and radiating from, the self.

> Autocentric time is linked to repetitive body and seasonal cycles. There, time tends not to be objectified as a question, apart from the predictable cycles which define and measure change. . . .
>
> . . . the autocentric sphere pools individuals into larger groupings of nuclear family, extended family, neighborhood, clan. When the self derives its definition and its "names" from the groupings to which it belongs, the distinctions between the self and the other members are blurred over. We identify ourselves with a name—and we thus identify and recognize ourselves in the other who derives his "name" from our common affiliation. . . . In this situation self and others are not experienced as "me distinct from them," but as "my group apart from those others." (Gutmann, 1965, pp. 234-235)

Gutmann continues to build his case for the differences in the male and the female by stating that males have more ego strength than their female counterparts. He cites psychoanalytic theorists such as Rapaport (1958) and Schaefer (1954) in his understanding of the concept of ego strength. Primarily he discusses the concept of ego as a "psychic institution organized around the function of delay. Through the judicious exercise of delay, with due regard for the requirements and possibilities in external reality, the strong ego guides the human organism toward reasonable gratification" (Gutmann, 1965, p. 229). Ego strength, he states, is generally defined in terms of delay and the derivatives of delay. Although Gutmann does not define female ego functions as regressive and maladaptive, he does state that the ego strength construct has more relevance for men than for women. In addition to the concept of delay, Gutmann concludes that the qualities most vital to ego strength, and ego integration in effective interpersonal functioning, are objectivity, flexibility, future orientation and ego boundaries. As previously reviewed, he notes that these are qualities which women generally are lacking.

Gutmann concludes that

> . . . accordingly when women are assessed against criteria for competence and "ego strength" based on successful "allo-centric" living they may necessarily appear childish, regressed, personalizing the world without due regard for boundary and delay. The point of this paper is that ego functions germinating in importantly different milieux cannot be compared along the same continuum, but can only be assessed in relation to their relevant psychosocial ecology. (Gutmann, 1965, p. 237)

Erikson and Gutmann were two of the first writers who stated that there were some fundamental gender-linked ego styles which are generally consistent in males or females. Although they did not hypothesize as to whether these differences are genetically and/or culturally induced, they did hypothesize that masculine ego functions were quite different from feminine ego functions.

The female writers who have examined gender identification are Jacobson (1964) and Mahler (1975). Their findings agree and overlap regarding gender identification as being both biologically and culturally enhanced. She stated that mothers often commented that their baby girls were softer and more cuddly than their male babies. She attributes the next important stage in gender identification to the discovery of the anatomical sexual organs. While she states that this usually occurs earlier in boys, children generally have noted the sexual differences by age two.

Mahler (1975) states that while the male child's discovery of his penis seems to bring unmitigated pleasure, it also helps the acquisition of firm gender identification by his opportunity to identify with the father. This occurs because of the mother's respect for the boy's "phallicity" in normal development. Gender identification appears to be

more complicated in girls. The young girl's discovery that she is lacking a penis brings on a range of emotions including anxiety, anger, and defiance. Some young girls have been observed trying to undo this perceived injustice by attempting urination while standing. However, during rapprochement, the young girl seeks to resolve this conflict by symbolically displaying her anger at her mother, whom she views as having "castrated" her. In normal development, penis envy is repressed and true ego identification with the mother occurs. Even so, tomboyish, anal or phallic behavior may continue due to the unconscious wish for the absent penis.

Jacobson (1964) agrees with Mahler's observations. She states that gender identity is furthered by the discovery of one's genitals. She says:

> In the beginning oedipal phase, the child's identity formation gains a strong impetus from his increasing genital interest, which centers the self- and object-directed cathexes about images of others' and his own genital organ. (Jacobson, 1964, p. 70)

Jacobson also agrees that this task is easier for the male child than for girls. In discussing this she states:

> . . . The little boy establishes his phallic position and hence his sexual identity more easily and readily than the little girl, who needs more time to form a realistic image of her genital, to accept it, and hence her feminine identity. (Jacobson, 1964, p. 71)

Mahler (1975) feels that the gender-determined difference in boys and girls is responsible for their behavioral differences. She also describes males as active and aggressive while girls are less active and more prone to a depressed mood. Again there is a consensus that boys exhibit very different behaviors.

Research on Sex-Role Differentiation

Bakan (1966) formulated his terms, "agency" and "communion," to describe what he viewed as different stages of ego functioning. He noted that there are four levels of sexual differentiation: (1) biological (based on specific contributions to the reproductive process), (2) secondary sex characteristics (facial hair, breasts, etc.), (3) social structure (the role function of the individual in society), and (4) psychological makeup (based largely on his own terms of "agency" or "communion"). Bakan noted that in each of the four categories of sexual differentiation there is room for overlap. He noted that there are varieties of inner sex (hermaphroditic) individuals and that the distribution of secondary sex characteristics, social roles and psychological measures characteristically show overlap of at least some degree, and sometimes show a quite extensive overlap. He noted that it was quite possible for an individual to be extremely masculine on one index and extremely feminine on another.

Although Bakan did not incorporate the theories of Erikson and Gutmann into his work on masculine and feminine styles, he cited research which paralleled the ideas espoused by Erikson and Gutmann in their work. Bakan first cited research by Lombroso (1923) who used terms and descriptions only slightly different from Gutmann's. Lombroso described woman as being altrocentrist and man as egocentrist. She stated that

> . . . the fundamental fact which determines woman's attitude toward life is that woman is altrocentrist, that is to say, she centers her feelings, her enjoyment, her ambition in something outside herself; she makes not herself but another

> person, or even things surrounding her, the center of her emotions. . . . Man, on the other hand, is egocentrist, that is to say, he makes himself and his pleasures and his activities the center of the world in which he lives. (p. 6)

Bakan also cited the work of H. A. Witkin as helpful in formulating his thoughts on masculine and feminine psychological functioning. Bakan noted that Witkin also found interesting differences in male and female functioning. Witkin stated:

> Further evidence of the deep-seated character of the observed modes of perception is the finding that men and women differed markedly from each other in the tests used. The differences were always in the same direction—women "going along with" the visual field more than men and responding less to bodily experiences. . . .
>
> These differences between men and women in susceptibility to influence by the structure of their surroundings are thus pervasive, and represent a difference between the sexes of very great importance. The finding of perceptual differences associated with as broad and fundamental a differentiation of people as sex supports the conclusion that the process involved is related in an essential way to the basic psychological organization of the person. (Witkin, 1950, p. 160)

Although many of Bakan's conclusions were related to differences in sexuality and eroticism between males and females, Bakan concluded that his constructs, "agency" and "communion," were indeed valid terms to connote different styles of ego functioning in males and females. He concluded that "agency" was the term for masculine ego orientation. He described "agency" as being characterized by self-protection, self-assertion, self-expansion, aggression, assertion, conquest, risk, self-sufficiency, isolation, alienation, aloneness, urge to master, objectivity, change, repression of feeling (especially negative affect), inhibition of impulses, self as individualistic, independence, competetiveness, and ability in spacial, numerical skills. "Communion" is the term that

Bakan used for female ego orientation. It is also an encompassing construct for female ego style which is characterized by other-relatedness, contact, openness, acceptance, union, cooperation, emotionality, expressiveness, tolerance, acceptance of negative affect, social consciousness, interpersonal concern and interest, generosity, receptivity, community, repression, and ability in communicative, verbal skills.

Research on Agency/Community

The first research to actively attempt to empirically validate Bakan's agency-communion constructs began a little more than a decade ago. Carlson (1971) noted that due to the pro-feminist climate our conceptualization of sex role differentiation was in a state of fluctuation as was our concept of masculinity and femininity. Although he urged an abandonment of the bipolar model of masculinity-femininity in favor of a dualistic concept, his first study was designed to develop implications of the formulation of the explicit hypotheses of Gutmann's and Bakan's work.

Using Bakan's hypotheses Carlson conducted five separate investigations with 213 college students who ranged in age from 19 to 55 years. He noted that his subjects came from very diversified groups in terms of their levels of education, their socioeconomic status and their marital status. Carlson formulated three hypotheses that correlated with Gutmann's and Bakan's theories in terms of the differences in masculine and feminine ego styles.

The first of these hypotheses was that males, in choosing ten terms to describe themselves from a list of 30 socially desirable

adjectives, would select terms that describe themselves in individual, personal terms while females would select terms which would be more interpersonal and social. Carlson reported his positive chi-square results to be significant at the .01 level. Furthermore, in a second situation, when asked to describe a significant other, male subjects tended to use an impersonal, demographic first sentence whereas female subjects generally used personal, nondemographic first sentences.

In examining whether females gave more self-centered representation of space, Carlson asked the question, "Describe the physical, geographic environment you lived longest in for the first ten years of life." In responding, females tended to describe this from a personal vantage point, i.e., they included personal, participant memories in their descriptions whereas males seemed to describe the environment in factual, demographic ways.

Carlson next had these subjects describe the future in terms of what sort of person they expected to be 15 years from then, what they might be doing and how they might have changed. As one might predict, males mostly structured their future around their careers, whereas family and inner psychological changes were mentioned far more by females.

In order to examine agentic and communal themes in male and female reaction to significant affective arousal, the same subjects were asked to report critical incidents of the following seven feelings in their lives: negative affects, including shame, fear, anger, disgust, and positive affects including joy, excitement, and surprise. Sixty percent of the male responses were agentic compared to 60 percent of

female responses, which were communal. That is, males tended to relate themes which involved aloneness, taking risks, success, aggression, sexuality and danger, whereas females emphasized togetherness, social acceptance, receptivity, dependence, and altruism. Carlson concluded that the existence of the agency/communion constructs had been validated as a measure of sex role orientation.

Perhaps more significantly, Carlson then sought to test the applicability of the agency/communion construct of sex role orientation by sampling 200 abstracts from the annotated bibliographic appendix to Maccoby's (1966) The Development of Sex Differences. Carlson developed a seven-part agency-communion formulation based on Bakan's (1966) major ideas. Carlson then used these seven criteria to rate these abstracts as confirming or disconfirming one of the agency/communion dichotomies. The results showed that 97 percent of the abstracts confirmed at least one of the seven agency/communion differentiations. Carlson concluded, "Taken together the results of these three quite diverse studies . . . offer confirmation of the basic soundness of Gutmann's and Bakan's conceptualizations. The agentic/communal distinction has demonstrated applicability as a valid measure of sex role orientation" (Carlson, 1971, p. 274).

While earlier writers such as Erikson and Gutmann hypothesized that biological gender determines sex role orientation in most cases, most recent researchers have questioned this conclusion. Cohen (1973) and Trupin (1976) believe that sex role adaptation is not dependent on biological determinants. Rather, variances of agentic and communal characteristics are more widely distributed across males and females.

Simply stated, this notion emphasizes that there is more variance of masculine/feminine characteristics within individuals in each gender than one would find if biology was the major determinant of sex role orientation.

Both Cohen and Trupin have attempted to find measures of agency/communion themes to assess a person's masculinity or femininity. Cohen (1973) rated 59 male and female undergraduate subjects as either masculine or feminine regardless of their gender by the results they received on the masculinity and femininity measures of the California Psychological Inventory (CPI). In analyzing recollections for agentic content, Cohen found that three themes: (a) surgency (e.g., self-expansion, assertiveness, competition, initiative), (b) instrumentality (mastery, practical problem-solving), and (c) libido (drive or sexual conquest), were found to be more prevalent in recollections of "masculine" males and "masculine" females. The difference in agentic content between masculine males and feminine males was highly significant, while the difference in agentic recall between masculine females and feminine females was also in the predicted direction, but was non-significant. Conversely, in analyzing their recollections for communal content, i.e., (a) active social cooperation (e.g., altruism, helping, concern about welfare), (b) passive social connectedness (e.g., reunion, receiving support, receptivity, desire for reduced separation from others), and (c) eros (e.g., expressions of warmth, sympathy, empathy, affection), these themes were found to be more prevalent in recollections of "feminine" males and "feminine" females. When aggression (both physical and verbal) was analyzed separately in both male and female

subjects' recollections, it was found that the amount of aggression they contained varied according to the masculinity of the subject. That is, the rank order for most to least aggressive recollections was masculine males, masculine females, feminine males, and feminine females. Cohen sums up his results by stating the

> . . . results for both agency and communion suggest that differences are most affected by within-gender sex role orientation, particularly in males, than by gender per se. . . . The effects of sex role orientation were consistently larger than the effects of gender especially in males. . . . (Cohen, 1973, pp. 248-249)

In his research Cohen noted that he chose the constructs of agency/communion because they had been empirically tested by Carlson (1971). In using the California Personality Inventory (CPI) Femininity Scale as an independent variable to assess masculine or feminine traits, Cohen noted that it included many of the characteristics of agency/communion in its items. He noted that high femininity is characterized on the CPI by "helpfulness, gentleness, moderation, sincerity, respectfulness, and sympathy, while masculinity or low femininity . . . is characterized by hard-headed outgoing ambitiousness; masculinity; activity; robustness; opportunism; and impatience with delay or reflection" (Cohen, 1971, p. 248).

Cohen concluded that because there is less toleration in our society for deviation from the stereotypical sex role of males, males must therefore make a more salient commitment psychologically to behave in the accepted manner. He concluded that there was more relative permissiveness for women to hold either set of sex role attitudes than there is for men in this society to do the same. Cohen also concluded

that his results provided some validity for the California Psychological Inventory Femininity Scale.

Trupin (1976) has continued research on the agentic/communal construct with children. He believes that agentic or communal orientations of persons reflect ego development or, in the case of the child, the form such development will take as the child matures. Although no person is completely agentic or communal in orientation, Trupin suggests that this dichotomy reflects the core or essence of ego functioning. He infers that sex role orientation is distinctly associated with either agentic or communal characteristics and these characteristics, in turn, influence one's ego development and functioning.

Definition of Gender and Sex Role

Erikson defined the term gender as the anatomical division into male and female. In most instances humans are easily and unambiguously classified as male or female at birth and retain this biological status throughout their lives. Slaby and Frye (1975) note that gender identity is based on anatomical differences initially, but children develop the cognitive understanding very early that their biological gender is constant and they then learn to relate to themselves and to others under the correct category. Green (1974) adds that not only do children develop a cognitive knowledge about their biological gender but that they also acquire a basic conviction that they are either male or female. However, he also emphasizes that there are exceptions among the transsexual who frequently report that they have had the feeling since childhood that they were trapped in the body of the wrong sex. He also notes that there

is a variety in the degree to which individuals enjoy or resent their biological gender, but, he concludes that the vast majority of persons, including homosexuals, appear to be content with the sexual category into which they have been born and have no wish to change it. Green points out that this does not mean that individuals are necessarily content with the roles and opportunities that society make easily available to their gender. He recognizes that there are gender-linked discriminatory practices which persons in each gender category may dislike.

The term "sex role" is more difficult to define. It is likely that this is related to the fact that the disciplines of psychology, sociology, and anthropology have all contributed to the literature of what sex role is and that these interdisciplinary ideas have been inconsistent and at times conflictual. However, Angrist (1969) has identified three clear usages of the term "sex role" which appear to be consistent in the literature of all three disciplines. The first usage he makes is that stressed by anthropologists, which refers to the normative expectations that members of a given culture or subculture hold regarding the relative positions that males and females should occupy. The term "position" includes the division of labor which is assigned to each sex as well as the societal tasks which are expected with each sex role position. Secondly, Angrist notes that sociologists frequently use the term "sex role" to refer to the relationship among persons. He notes in this usage that the term is used in interpersonal relationships and concerns the processes of role taking and socialization in dyads and in other groups with varying structures.

Thirdly, "sex role" is used by psychologists to refer to the characteristics of women and men themselves as it relates to their behavior, personalities, identities, interests, preferences and their affective state. In other words, Angrist is using the term "sex role" as used by psychologists to measure those characteristics of males and females which have been previously referred to as agentic/communal characteristics. Basically the term "sex role" is used to talk about the stereotypical ways in which typical males and females are expected to behave. In other words, it has been used to describe behaviors that are positively reinforced for members of one sex and either ignored or negatively reinforced for members of the other sex. As Angrist notes, the term sex role is one which includes a multitude of ways and combinations of ways in which a person behaves and these vary across social settings and across the life spans of individuals.

Masculine and Feminine Personality Variables

Two decades ago when Guttmann and Erikson were writing about masculinity and femininity they held the tenet that biological, masculine and feminine sex role behaviors, and psychological attributes of masculinity and femininity, were tightly interrelated. To them biological gender was so intimately associated with masculine and feminine role behavior and the presumed psychological differences of ego functions between males and females that there appeared to be very little overlap or sexual differentiation. That is to say that Guttmann and Erikson assumed that these characteristics were strongly bimodal. Because society gave such negative response to any display of cross-sex behavior

or attributes, it is likely that individuals were more stereotypical in their behavior due to environmental factors. Homosexuals were still "in the closet" at that time and their behavior was judged to be pathological by both mental health professionals and the society at large. Additionally parents, particularly parents of male children, insisted that their children behave according to traditional sex role standards so as to prevent them from growing up to resemble attributes of the opposite sex psychologically or to prevent them from becoming sexual deviants. While girls have traditionally been more or less allowed to be mild tomboys, at least to their adolescence, if not beyond, boys were not allowed to become sissies under any condition.

A listing of researchers who have studied masculine and feminine personality variables includes the basic tenets of Erikson (1964), Outer Versus Inner-Space, Parsons and Bales (1955), Instrumentality Versus Independence, Guttmann (1965), Allocentric Versus Autocentric and Bakan (1966), Agentic Versus Communal Characteristics. All of these researchers concluded that there were fundamental distinctions between the sexes which if not universal, had validity among many cultures.

American researchers who have attempted to validate the earlier research on masculine and feminine characteristics have included: Rosenkrantz, Vogel, Bee, Broverman and Broverman (1968); Jenkin and Vroegh (1969); Brim (1974); and Spence, Helmrich, and Stapp (1974). All of them have conducted formal empirical research in this area and have concluded that the ideal woman is generally described by such adjectives

as emotional, sensitive and concerned with others and the ideal man by such adjectives as competitive, active, and independent. As Spence and Helmrich (1979) note:

> The anthropological literature . . . suggests that, while all cultures do not produce women who tend to be more communal in their personal characteristics than men and men who tend to be more agentic than women, the bast majority do (underlining mine). Thus the agentic-communion dichotomy and its conceptual equivalent appear to have considerable generality in describing the core attributes that societies expect to differentiate women and men. (Spence and Helmrich, 1979, p. 17)

Conceptions of Masculinity and Femininity

As previously noted, the most common view of masculine and feminine characteristics is that they exist as bipolar opposities. This means that the presence of one set of characteristics precludes the presence of the other set of characteristics. Therefore, feminine characteristics are viewed as existing without vasculine traits and vice versa. The concept is that of a single bipolar scale with female characteristics being clustered at the feminine end and male characteristics at the masculine end.

The most notable exception to this view was the dualistic concept which was perhaps first proposed by Jung (1971). He postulated that those masculine and feminine traits co-existed in every individual. He named the masculine part of the psyche "animus" and the feminine part, "anima." Jung stated that every individual has aspects of both "animus" and "anima" which were important to their overall functioning.

However, the bipolar notion of masculinity and femininity has basically guided the research efforts of psychologists. Most research

instruments have been designed along the bipolar conception of masculinity or femininity. Psychometric measures of masculinity and femininity have typically included items which measure the attitudes, motives, vocational interests, preferences for leisure activities, role functions within the home, patterns of interpersonal interactions as well as personality attributes that were thought to distinguish between the sexes. These personality attributes have generally been consistent with the terms which Bakan has used to describe his "agency" and "communion" constructs. Therefore most psychometric measures list items which have a bipolar opposite (i.e., "I like to read mechanics magazines." True or False).

Research on Sex-Role Development in Children

Thus far research has concluded that parenting seems to have a great deal of influence on sex-role development. Parsonian theory claims that the father has the greater impact on his children's sex-role learning as he generally assumes the instrumental parenting role and is more concerned that his children learn proper sex-role behavior. Johnson (1963) states that while the mother generally acts in a nurturant way with children of both sexes, the father tends to interact with his children differently, rewarding masculine behavior in his sons and feminine behavior in his daughters. This reaction of the father is representative of the sex-role demands that society places on children as they grow up.

Researchers have also found that fathers are more concerned than mothers that their children develop distinct sex roles. At least three

studies (Goodenough, 1957; Sears, Maccoby, and Levin, 1957; Lamb, 1977) have shown that fathers tend to treat boys and girls in early childhood in sex-typed ways in more instances than do mothers. They engage in less talking with girls (Rebelsky and Hanks, 1971) and in about the second year of the child's life they become more than twice as interactive with their sons as with their daughters (Lamb, 1977). This emergence of paternal sex-differentiated behavior has an effect on the children. Girls tend to become more dependent than boys on their proximity to, or contact with, their parents (Brooks and Lewis, 1974; Maccoby and Jacklin, 1973, 1974). It was also noted that girls become more dependent on their mothers, while boys become more dependent on their fathers. The major implication of these findings is that during the second year of life fathers become very important in the lives of their sons. The father-son relationship facilitates the adoption of sex-appropriate behavior patterns by boys, who model after their fathers. According to Lynn (1976), most of the research literature seems to indicate that fathers are more concerned with developing their sons' masculinity (to avoid the connotation of being a "sissy") than they are in encouraging their daughters' femininity. However, if the fathers are too alienated, or detached, or excessively punitive with their sons, their boys may not wish to model after them and as a result they adopt less of a masculine sex role. Furthermore, a dominant father will only be an effective masculine role model if he does not impose his will continually on his son but also encourages his son to be dominant. Fathers must not only be dominant (display competence, make decisions, set limits, etc.), but they must also be

nurturant with their sons in order for them to accept his sex-role model.

Some researchers, e.g., Whiting (1975), predict that a child will choose to model after a person whom he envies or one who has greater power, i.e., the dominant parent. A number of studies, e.g., Hetherington (1965), have been carried out to determine whether the dominant parent affects sex-role development. The dominant parent is the one who has more power in terms of his/her influence and decision-making role in the home. Hetherington studied children between the ages of four to eleven and their parents in the home situation. Parental characteristics which were examined were parental dominance, warmth-hostility, and conflict, with each pair of parents rated by researchers on these attributes as they tried to resolve differences in their views on handling sample children's problems. On measures of sex-role identity, most boys modeled after their dominant parent while most girls modeled after the mother, irrespective of dominance. In pairs where the mother was dominant, the sons rated lower on masculinity and they modeled after her personality. In pairs where the father was dominant, the boys imitated the father but the girls still modeled after the mother. The parent who showed the most warmth to the children was more likely to be imitated. In cases of severe conflict between the parents, the children generally followed the lead of the more dominant parent. These results indicated that males need a dominant father figure with whom to identify, to adopt appropriate male behavior, while females can be raised with either a dominant father or a dominant mother and still develop their femininity.

Some interesting results on sex-role development came from Mussen and Rutherford's 1963 research study. The authors used maternal interviews, parental questionnaires and structured doll play to assess sex-role development among boys and girls in the first grade of a public school. They report that the degree of masculinity of the fathers, parental self-acceptance and parental encouragement of their sons' participation in masculine activities had no significant effect on their boys' masculinization, i.e., the acquiring of masculine behavior and interests. The only two significant factors which were positively related to the masculinization of boys were the degree to which these boys saw their fathers as nurturant and the degree to which they saw their fathers as powerful, i.e., instrumental in both rewarding and punishing them. Factors which positively related to girls' feminization include a warm mother-daughter relationship, high masculinity of fathers (but not the femininity of mothers) and the father's encouragement (but not the mother's) of their daughters' participation in feminine activities.

Brofenbrenner (1967) argues that due to changing child-rearing practices, parents, particularly fathers, are hindering their children's optimal masculinization and feminization. Brofenbrenner believes that fathers must model a powerful authoritative role in the family through both reward (affection, involvement in play activities, etc.) and punishment (various punitive disciplinary measures) in order to foster masculine traits in their sons, e.g., assertiveness, initiative, independence. Prior to the 1950's and 60's, fathers tended to be stricter with boys and mothers with girls. However, with the relative

prosperity of the past three decades, the rise in the family's social status and the profusion of child-rearing literature, parental behavior has changed to the extent that both parents tend to have similar effects on their children both within and across sexes. Nowadays, according to Brofenbrenner

> It is almost exclusively in lower-middle class homes that fathers are more strict with boys and mothers with girls. To the extent that direct discipline (i.e., punitive) is employed in upper-middle class families, it tends to be exercised by both parents equally. (1967, p. 183)

He argues that men are tending to take a less dominant role in discipline. As families take on more democratic equalitarian overtones, the once distinct roles of fathers vis-a-vis their sons and daughters and mothers vis-a-vis their sons and daughters are becoming blurred. For instance, more fathers are using "love-oriented" discipline, i.e., reasoning, and interacting in a more expressive mode with their sons, roles that were traditionally played by mothers. As a result, says Brofenbrenner, "boys are becoming feminized," i.e., submissive, dependent, conforming, anxious, less enterprising and self-sufficient and less comfortable in their sex roles.

While Brofenbrenner believes it is primarily the changing behavior of the father that accounts for some of the detrimental effects on the personality of boys, mothers do not entirely escape his criticism. Women have tended to become more democratic and less matriarchial in terms of disciplining their daughters, e.g., by using more love-oriented, psychological discipline. Girls thrive in a matriarchial context, i.e., when living with a mother who authoritatively models the maternal role. Bronfenbrenner states:

> Both responsibility, leadership and dependability are fostered by the relatively greater salience of parents of the same sex. . . . The most dependent and least dependable adolescents describe family arrangements that are neither patriarchial nor matriarchial but equalitarian. To state the issue in more provocative form, our data suggests that the democratic family which for so many years has been held up and aspired to as a model by professionals and enlightened laymen, tends to produce young people who do not take initiative, look to others for direction and decision and cannot be counted on to fulfill obligations. (Brofenbrenner, 1967, p. 184)

In Heilbrun's study (1965), he found that, among university undergraduate students, both the men and women who had identified primarily with their fathers were the best adjusted and those women identifying with low feminine mothers were better off psychologically than those who had identified with highly feminine mothers. The former group described themselves as self confident, while the feminine mother-identified females considered themselves fearful, gentle, obliging, silent and submissive. Heilbrun therefore concludes that identification with the father, not the mother, is "the normal developmental channel for establishing the most satisfactory male and female sex-role identity" (Heilbrun, 1965, p. 86).

This is consistent with the common finding that many psychological disorders in males can be traced back to an overprotective, dominant mother married to a weak, distant father (Hamilton, 1977). Hamilton adds that improper sex-role identification can lead to psychological disorders.

One of the most well-known studies supporting this conclusion is Kayton and Biller's 1970 study of 80 adult males. Of the 80 subjects, 20 were normal, 20 were neurotic, 20 were paranoid-schizophrenics, and 20 were other types of schizophrenics. From a sample list of traits,

80 percent of the normal males chose masculine traits for their fathers and feminine traits for their mothers, while 60-80 percent of the disturbed groups chose more masculine than feminine traits to characterize their mothers and more feminine than masculine traits to characterize their fathers. Another study (Rabin, 1964) looked at 114 schizophrenic, neurotic and normal 10-year-old boys. Evidence of sex-role problems in the parents was found in the histories of the disturbed children. The schizophrenic boys described their mothers as the stronger and smarter parent, the boss of the family and the one they wanted to exemplify when they grew up. The neurotic boys also wanted to grow up more like their mothers than was true for the normal boys.

Biller (1968a) found a strong relationship between kindergarten boys' masculinity and paternal dominance in their performance on self-concept, sex-role preference, and sex-role adoption measures. The boys scoring highly on masculinity tended to have fathers who predominated in decision-making at home. Heilbrun (1965) found that fathers who acted in a highly instrumental way in the home enhanced the child's sex-role orientation more than those fathers who displayed less instrumental behavior.

Still other researchers such as Stolz (1954) and Swarey (1959) compared sex-role orientation in matched groups of latency age children. Consistentl- the father-absent boys were less secure in their masculinity. Lynn (1974) reports that young boys often try to compensate for this insecurity with acts of masculine bravado, e.g., daring to do dangerous things, antisocial behavior, whereas older boys tended to reject adult masculine models in general. Lynn states that the most crucial period

for sex-role development is in the first two to three years of life and studies with males who lacked fathers this early in life reveal the most propensity to femininity. He also states there are not many studies of the effects of father absence on the sex-role development of females and those that look at this question (Burton, 1972) have revealed no effects for females.

Golner (1967) links sex-role identity problems among latency age boys with learning problems. He believes that a boy's internalization of negative parental attitudes regarding his masculinity, leads to the youngster converting these attitudes into learning problems. The problem originates with the preschool boy's inability to identify with either a weak, distant father or an authoritarian, punitive one, i.e., failure to resolve the Oedipal conflict. Characteristics of the mother may or may not include a dominant, over-bearing person who rejects her weak spouse and disparages his achievements. According to Golner (1967), various parental attitudes and behavior cause the youngster to repudiate his masculinity. These include rejection of the boy's sexuality, i.e., suppression of his need to be aggressive, competitive, independent; repudiation of his achievements and successes; and attempts to make him feel dependent, deficient and inferior (e.g., rather than letting him do something on his own, showing him how to do it first). The youngster, in turn, reacts to this type of parent and parenting with self-defeating responses. He may be afraid to compete with a punitive father for fear of retaliation and therefore he acts passively to avoid being successful. With a mother who disparages masculinity in men, the boy may be afraid to assume a masculine role for fear of losing her love. Lacking security

in his sex role, a youngster may feel it is dangerous to become a man and therefore must defend himself against it by turning away from any manifestation of masculinity. "In our culture masculinity calls for the successful acquisition and use of knowledge" (Golner, 1967, p. 239), and therefore the boy shuns learning in school in his effort to avoid taking on masculine attributes. Golner believes the unresolved Oedipal conflict reasserts itself in school because the "classroom situation can become a variation of the Oedipal situation in which case the boy's reactions to the classroom are distorted by his transference of feelings about his parents to his teacher and his studies" (p. 238). For instance, he may express his fear against competing with his father by failing his courses or he may purposefully do poorly in order to passively retaliate and show his anger toward his father.

Sibling Influences

While a great deal of research has been conducted to study factors which affect sex-role differentiation, little attention has been paid to sibling influences in this area. While some researchers have looked at the effects of birth order and sex-role differentiation (Koch, 1954, 1955a, 1955b, 1956a, 1956b, 1956c, 1956d, 1957; Brim, 1958; Vroegh, 1971; Bigner, 1972) almost all of these studies have used preschool aged children as subjects in spite of the knowledge that preschool years are those in which sex-role orientation is being defined. Additionally, most research has not used measures of sex-role differentiation which have been empirically validated and the results which have been collected have yet to demonstrate consistently what effect, if any, an older sibling has on sex-role differentiation of a younger sibling.

Family theorists first neglected the area of sibling relationships since any influences were felt to be indirect and therefore, insignificant. The psychoanalytic notion that sibling relations are governed by the fundamental mother-child relationship in which siblings rival for possession of the mother probably contributed to this lack of interest in this area of sibling relationships. The first person to propose that siblings can directly influence one another was Koch (1954). In a series of studies she reported that there were many effects on a child as a result of the influence of a sibling. She reported that having a sibling of the opposite sex was very stimulating and threatened the security of the first-born child and that the difference associated with ordinal position are frequently contingent on the sex of the child and the sex of the sibling. Koch also noted differences in such factors as the tendency to procrastinate, in language functions, such as articulation, stuttering and volume of speech, as well as differences in activity level and reactions to fear, frustration, anger, sex rivalry and jealousy between siblings. She also noted that there appears to be some sibling effects related to sex-role differentiation. In her 1956a study she noted that:

> . . . there was a strong suggestion that girls with a brother more than two years old have a tendency to be relatively tomboyish.
>
> In the case of sissiness in boys the interaction of ordinal position of the child in his sibship and spacing was significant. Among the second-borns sissiness tended to decrease as the age difference between the sibs increased, while among the first-borns it decreased when sib spacing occurred only between the under-two and to the two-to-four year and to the four-to-six year spacings. From the middle to the four-to-six year spacing there was an increase in sissiness. At the spacings up to four years second-born boys with sisters were more sissyish than were first-born

> boys with sisters; whereas, when the sibs differed by more than four years, the relationship between first- and second-borns was reversed. (Koch, 1956a, p. 243)

In a subsequent study (1957), Koch also noted that "children with a brother were judged less sensitive than those with a sister." Since the culture expects the male "to take it on the chin" it may be this attitude is communicated directly or indirectly by the male to his sibling" (p. 242). While these trends are present, many were judged by Koch herself to be statistically nonsignificant. Koch's studies in the 1950's included research on the effects of sibling position, sex of the child, sex of the sibling and age spacing between siblings. She did conclude that these variables affected the child's personality development and that the sex of the older sibling was one important determinant of sex-typed behaviors and traits in the second-born child. Koch's findings are based on teacher ratings or direct observation, which unlike empirical data, cannot be replicated.

Koch, in essence, was the first person to note that sibling effects were an important factor on the development of children. She also emphasized the need to control for sibling effects in research studies. Sutton-Smith and Rosenberg (1970) noted that there were differences between first-born and later-born children in interests, sex roles and conformity and hypothesized that these differences could be related to the influence of other siblings. They also pointed out that the sex and age spacing of the siblings were important factors in any research to be conducted. Cicirelli (1976b) noted that by age 5 or 6 the position of the child in his or her family influences his or her preferences, styles of thinking, and his or her sense of self-esteem.

Several researchers have suggested that the middle childhood years are perhaps the most important since they are a period of very active development. During these years the integration of social relationships and interpersonal problem solving are addressed (Breger, 1974). Children within this developmental period have been noted to be very actively engaged with their siblings, and to be aware of the social status within the family, school, and neighborhood. It has also been noted (Cicirelli, 1976b) that the main or primary effects of the sibling relationship have been accomplished by this time period.

Studies on Birth Order

Alfred Adler (1924, 1928) was the first person to suggest that birth order affected the personality characteristics of children. He described the first-born as a "power-hungry conservative." He noted that first-born children can develop a striving to protect others and to help them. He stated they often serve as parental surrogates who help in the rearing of younger siblings. When describing the second-born child, Adler (1959) stated that cooperative behavior is more typical of the second-born child than of the first-born. However, he also notes that second-born children are competitive, trying to surpass the achievements of the older sibling. Altus (1962, 1966) suggested that the effects of birth order are not universal but are the result of other familial aspects such as the sex of the siblings and the age spacings.

Altus (1966) also notes that there is a noticeable relationship between birth order and the achievement of eminence in the United States. He states:

> There is also some evidence that in the quite bright segment of our population the first-born are not only present in greater numbers, but are also somewhat more verbally able. The first-born is overrepresented among college populations, and there is some indication that the more selective the college, the greater the overrepresentation. It seems reasonable to believe that the aptitude data and the college attendance figures must be interrelated, and it seems equally reasonable that both sets of data are linked, quite possibly in a causal way, to the numerous data on eminence that have been presented. (Altus, 1966, p. 48)

Catell (1917) studied eminence for over thirty years and concluded that the preeminence of the first-born was due to the differential parental treatment. He stated that first-born children have higher demands for achievement placed on them. Sears (1957) also noted that parents tend to be stricter with first-born children while Lasko (1954) found that parents treated later born children in a more relaxed, permissive way.

Childhood Sibling Research

As previously mentioned, the lack of methodological adequacy makes it difficult to evaluate the existing research on siblings. These limitations include inadequate sample sizes, lack of reliability and comparability of procedures utilized, and in general a lack of demographic information regarding the family context from which the child originates. The demographic information regarding siblings, which always needs to be adequately assessed, includes the sex of the child, the sex of the sibling(s), relative ages of siblings, age spacing between or among siblings, family size and socioeconomic status. For example, Longstreth, Longstreth, Ramiez and Fernandez (1975) noted that certain "older-brother" effects occurred only when the age spacing between the child

and the older brother was less than three years. Other examples have further documented that the effects of socioeconomic status and sibling spacing factors tend to be confounded with the entire size of the family unit (Cicirelli, 1976a).

Same-Sex and Cross-Sex Sibling Interactions

It has been repeatedly noted in the research on sibling interactions that older siblings are viewed as models for younger siblings and as such exert considerable influence over the younger siblings. However, we still have very little information on the effects of same-sex as opposed to cross-sex sibling patterns of interaction. What we do know appears to be credited to only three researchers who have investigated this area. Cicirelli (1972, 1973, 1974, 1975) found that children who have an older sibling of the same sex tended to press for more rapid solutions to cognitive problem solving tasks compared with children who work in the presence of an opposite-sex older sibling. Cicirelli concluded that this finding suggests that there is greater competitiveness within the same-sex sibling dyad. These data seem to agree with the findings of Schachter, Gilutz, Shore and Adler (1978) who stated that same-sex siblings exhibited greater sibling rivalry than opposite-sex siblings due to their more similar and shared interests. Cicirelli (1975) also noted that same-sex siblings who are close in age were thought to engage in more extensive interaction than opposite-sex siblings.

Cicirelli (1976a) also found that older siblings gave more feedback to opposite siblings than they did to same-sex siblings. He noted that this finding did not imply that there was less competition

in opposite-sex siblings but rather that the nature of competitive patterns of interchange between same- and cross-sex siblings varies. He noted that competition did not seem to predominate exclusively in either pattern of sibling structure.

It has been hypothesized by Koch (1954) and reinforced by Brim (1975) that cross-sex siblings perhaps offer each other the opportunity to experience and incorporate aspects of the culturally defined role of the opposite sex. Brim found cross-sex siblings had more traits of the opposite sex than did same-sex siblings and that this was especially relevant for younger rather than older siblings in cross-sex pairs. His conclusion was that younger siblings incorporated the role of older sibling due to the greater power differential of the older sibling in the sibling dyad. He postulated that this occurred by direct role learning, where the younger sibling imitates how the older sibling interacts in a group and how to behave in acceptable ways. Brim made his assumptions by analyzing Koch's data, in which 59 personality traits were reclassified according to the instrumental-expressive roles. Brim stated that this effect of cross-sex siblings assimilating characteristics of the opposite sex was particularly pronounced in the younger of two siblings and particularly in the case of a male child with an older sister of a two-year spacing.

Bigner (1972) selected 295 male and female preschoolers with age spacing between siblings of 12-20 months or 28-48 months. He found that males with older brothers made significantly higher (more masculine) sex role preference scores on the IT Scale for Children (TSC) and males with older sisters and females with older sisters made significantly lower

(more feminine) sex-role preference scores on the ITSC than did females with older brothers. These differences were significant at the .001 and .01 levels of confidence, respectively, although the effects of the examiner's sex, mode of interaction and scoring in this projective instrument used to assess sex-role preference might lead to additional questions. A separate finding from Bigner's 1972 research seems relevant. He found that the presence of an older male sibling provided more of a socially stimulating experience for the younger child compared with the presence of a female sibling, possibly because an older male sibling is able to expose the younger one to a greater variety of social environments or possibly because the young child perceives the male sibling as holding greater social power than an older female sibling. Separate studies seem to corroborate the greater differential effect of an older male sibling as opposed to an older female sibling on a younger child's psychosocial development, particularly in father-absent homes (Kahn, Mahier, and Burnstein, 1970; Santrock, 1970).

Vroegh (1971) investigated the effects of birth order and the sex of the sibling on the child's assumed gender role identity. In order to ascertain which children were more and which children were less masculine or feminine she asked teachers to rank order the children as to their masculine or feminine traits. Additionally, the children were rated by their classmates on a four-point scale of masculinity and femininity. Vroegh concluded that:

> Generally, the results of this study indicated that sex of older siblings without regard to sex of younger siblings and sex of siblings without regard to birth order have no consistent effects upon gender role identity of boys or girls of preschool or in grades two through eight. The

> presence of like-sex siblings, whether older or younger, did not appear to have any predictable effect on masculinity or femininity as determined by teachers or peers.

Vroegh went on to criticize the methodology of past research in this area. She stated that children with only same-sex siblings are more likely to make same-sex choices since they have not been exposed to the cross-sex toys and activities. She concluded that a child with cross-sex siblings does have contact with cross-sex toys and activities and therefore is more likely to make cross-sex choices. It was her hypothesis that this was why researchers have suspected that like-sex siblings reinforce appropriate gender identity. She concludes that the past measures have not been appropriate in this area of research because they "do not measure adequately the variable they are intended to measure" (Vroegh, 1971, p. 411). In her discussion of future research into like-sex and cross-sex gender identity issues, Vroegh notes that:

> Although there is little doubt that modeling is an effective process in the development of the appropriate gender identity, the model must be adequately specified in terms of gender-identity status before anything can be said about a significant relationship of masculinity and femininity, and birth order and sex of siblings. (Vroegh, p. 411)

Rationale For This Study

Since the early 1950's when Koch first suggested that first-born siblings could have a significant effect upon the gender identity of the second-born sibling, little research has been done to verify this specific relationship. Of the few studies that have been conducted, a number of methodological problems have existed. These include a lack of demographic information regarding the families of the children studied,

including such factors as the sex of the child and the child's siblings, and the socioeconomic status of the family. Additionally many of these studies have utilized populations selected at random without control for children who have significant academic, social and/or emotional problems.

This study seeks to investigate Koch's original hypothesis that older siblings can affect the gender identification of the younger siblings while avoiding the methodological problems of earlier studies. In addition, the present study hopes to validate the use of a modified Miniature Situations Test and to accurately identify masculine and feminine traits as measured by the CPI-Fe index.

The goals of the present study are thus:

1. To assess the effects of first-born sibling gender and sex-role differentiation on the sex-role differentiation of the second sibling, and

2. To assess the ability of a modified Miniature Situations Test to discriminate masculine and feminine traits of second-born siblings.

CHAPTER II

METHOD

Subjects

Subjects participating in this study consisted of 120 sibling pairs (240 students) selected from Maryville, Tennessee, a small rural community in Eastern Tennessee. Sibling pairs were selected with an age differentiation of no greater than three years between siblings. In addition, pairs were selected so that the second siblings displayed no academic, behavioral or emotional problems. They were in the latency age range (age 6 through 12 years) and they belonged to the Caucasian race.

The subjects were assigned to one of four equal groups based upon gender and group one consisted of 30 pairs of older males with younger male siblings. Group two consisted of 30 pairs of older males with younger female siblings. Group three consisted of 30 pairs of older females with younger male siblings. Group four consisted of 30 pairs of older females with younger female siblings. All older siblings were between the ages of 7 and 15 years. All younger siblings were between the ages of 6 and 12 years. The mean age of the first-born boys with younger brothers was 12.0 years and for older boys with younger sisters was 11.4 years. Older girls with younger brothers had a mean age of 11.8 years and older girls with younger sisters had a mean age of 12.0 years. The mean age of second-born siblings was 10.1 years for boys with

an older brother, 9.8 years for boys with an older sister, 9.1 years for girls with an older brother, and 9.8 for girls with an older sister.

Informed Consent

Following permission from the Board of Education to conduct this study, informed consent was requested from the parent(s) of the siblings. Only one consent form was necessary for each sibling pair. Each consent form was designed to outline the siblings' participation in the study.

After participation had been explained to the parent(s) of each sibling set, parents were asked to sign the informed consent and to complete a questionnaire containing demographic information about the subjects' family. A copy of the consent form can be found in Appendix A. A copy of the parent questionnaire can be found in Appendix B.

Verbal consent was also obtained from each sibling pair used in the study. The following verbal consent and introduction to the study was given to each first born child in grades 7-9:

> I want to ask you some questions about your interests and activities. Read each question on these pages, decide how you feel about it, and then mark your question in the correct answer blank. If you agree with a statement or feel that it is true about you, answer true. If you disagree with a statement, or feel that it is not true about you, answer false. There are no right or wrong answers to these questions so just tell me whatever you feel. This will take about 15-20 minutes of your time. Are you willing to answer some questions for me? Do you have any questions you would like to ask me before we start?

The following verbal consent and introduction to the study was given to each first born child in grades 2-6:

> I want to ask you some questions about your interests and activities. I will read some questions to you, and then ask you how you feel about it. If you agree with a statement or feel that it is true about you, answer true. If

> you disagree with a statement and feel that it is not true about you, answer false. There are no right or wrong answers to these questions so just tell me whatever you feel. This will take about 15-20 minutes of your time. If you don't understand any of the words I read to you, ask me and I'll tell you what they mean. Are you willing to answer some questions for me? Do you have any questions you would like to ask me before we start?

The following verbal consent and introduction to the study was given to each second-born child:

> I want to ask you some questions about your interests and activities and what you would like to do if you were given certain choices. First I will read you some questions and then I will ask you how you feel about it. If you agree with what I read, or feel that it is true about you answer yes. If you disagree with a statement or feel that it is not true about you, answer no. If you don't understand any of the words I read to you ask me and I'll tell you what they mean. Secondly, I will ask you which of two things you would rather do if you had two choices. Then you can do whichever of the two things you choose. This will take about 30-45 minutes of your time. Are you willing to answer the questions and make the choices? Do you have any questions you would like to ask me before we start?

Procedure

Doing research in a school system requires cooperation from a number of professionals. After permission was obtained from the Board of Education and the Superintendent of Schools, persmission was obtained from the individual school principals to survey their school population to look for sibling pairs. Next, cooperation was solicited from the teachers.

After locating the system's population of possible target siblings, teachers of the second-born sibling were asked to review this list and delete the names of any children who were having academic, social, or behavioral problems. School records were then assessed to verify the

birthdates of siblings and to insure that no other factors would preclude them from being subjects in the study.

Informed consent was then requested from the students' parent(s). Simultaneously, demographic information was requested from the parents in the form of a parental questionnaire. The demographic information was requested to obtain the following information.

1. Verification of both siblings' birthdates;
2. Verification of the gender of both siblings;
3. Names and birthdates of any younger siblings;
4. Name, age, occupation and educational level of father;
5. Name, age, occupation and educational level of mother;
6. Any previous marriages of parents;
7. Any other person living in the home;
8. Student's relationship to the adults living in the home (i.e., mother and stepfather);
9. Any problems or concerns the parents had regarding the second-born child.

Once informed consent and demographic information were collected, subjects were seen on an individual basis in a private setting in their schools. Data collection was completed during a time suggested by each student's teacher so that the student would not be missing newly introduced academic material. Verbal permission was then solicited from each individual subject-dyad.

Measures

A review of tests and measures revealed that there are very few existing instruments so assess gender identification in children. Of the

few that exist, most are projective instruments (such as the Draw-a-Person or It Scale for Children) which are subject to examiner interpretation. In order to avoid examiner interpretations of gender identification, tests were chosen for this study which did not involve projective techniques. Only one nonprojective test with established reliability and validity could be found to assess gender identification in children, the California Personality Inventory (CPI)-Femininity Scale (fe) (see Appendix C).

The CPI, developed in 1957 by Gough, was designed to assess personality characteristics and to identify and measure 18 individual variables believed to assess normal (not psychiatric) subjects. One of the 18 CPI scales is a measure of femininity. Additionally, the CPI-Fe scales have been used with adolescent and preadolescent children (Sears, 1970; Gough, 1981). Although not all reviewers assess the CPI in a positive light, Buros (1978) reports that the CPI is a valid measure on a number of criteria. These include universal relevance in meaning in a cross-cultural manner. The CPI has been cross validated on American, Italian, Japanese and French men and women (Gough, 1966). In addition, Buros finds that the CPI is also a useful measure. He states:

> We know of no studies in the realm of objective personality assessment of normals which have lined up competing tests with a view towards discovering the differential predictive validities of the various candidates. Such studies should obviously be done. Our impression is that the CPI would fare relatively well given sharply defined criteria. (Buros, 1978, p. 47)

It would certainly appear then that according to Buros and others (i.e., Goldberg, 1972) that the CPI can be used for providing clinical and research oriented insights into a number of personality variables.

In addition to its usefulness as an integrative scale, a number of investigators have indicated that the femininity scales of the CPI can be used in an independent fashion (Levin & Karni, 1971; Baucom, 1976; Baucom, 1980). Since its inception, there have been in excess of 50 articles published which have used the CPI-Fe Index alone (Gough, 1981).

Since no other nonprojective measurement of gender identification could be found, a second measure of gender identification was devised by reviewing the literature and reconstructing some earlier work completed by Santostefano (1962) and Handler (1982).

Santostefano (1960) originally developed a series of forty-one forced-choice items to be used with adolescents as a measure of personality. He felt that his Miniature Situations Test (MST) was helpful in filling the gap between traditional projective testing (such as the Rorschach and Children's Apperception Test) and the structured interview where the patient could vastly misrepresent his behavior. He asked the adolescents interviewed to choose between two differing tasks and then observed the overt, affective, coping responses of the subject. Santostefano concluded that the MST was a more useful measure of personality variables than the structured interview. He noted that while the adolescents were engaged in their choices on the MST that they frequently engaged in spontaneous and relevant clinical material.

Later Santostefano (1962a, 1962b, 1965) used his procedures with children and concluded that he had validated the constructs of the MST test as a valid measure of personality constructs. Santostefano did not, however, examine his results in terms of the age or sex of his population although he noted the need for such studies to be done.

Handler (1982) in an unwritten pilot study adopted Santostefano's original 41 MST items and expanded them. Based on both his and Santostefano's items, Handler interviewed his two subjects for a 45-minute period. He then produced a written psychological report on both children which was as detailed as a traditional child clinical report. Handler did not expand Santostephano's work in order to look at age or gender specifically. However, the items they jointly developed lend themselves easily to such adaptation since they measure personality variables which have been repeatedly noted as primarily masculine or feminine traits in the literature.

Based on the literature review, masculine and feminine traits were then organized into four main groups. The four categories used were: (A) Aggression, Assertion, versus Nuturance; (B) Mastery, Independence, Conquest, versus Compliance, Tolerance, Dependence; (C) Isolation, Aloneness, versus Union, Merging, and Shared-Expectations; and (D) Vigorous, Active, versus Inactive, Passive.

Nine of Santostephano's and ten of Handler's items were found which easily fit into the four categories. One additional items was added to Category B, Mastery, Independence, Conquest, versus Compliance, Tolerance and Dependence. The added item is listed as number five in Category B (see Appendix D). These 20 items comprised the Modified Miniature Situations Test (MMS).

After the MMS scale was devised, four graduate psychology students rated the scales. The graduate students were asked to decide which of the two forced-choice items represented masculine, as opposed to feminine behaviors. No other information was supplied to the graduate

students. Inter-rater reliability was .975, which indicated that the four graduate students could differentiate very easily and successfully tasks which were masculine as opposed to feminine.

Test Administration

Standardized test procedures were used in the administration of the CPI-Fe scale. Testing was conducted individually in a quiet private room within each school. During the CPI-Fe administration, each of the students was seated beside the examiner in a school chair next to a table. For students in grades one through six each items on the CPI was read to the student and any words which he/she did not understand were explained to him/her before his/her response was collected. For grades above six the CPI was administered on a self-scoring system. Any questions these students had were answered as they progressed through the index. Subjects were encouraged to use their own judgment regarding individual test items. The times for administering the CPI ranged between 15 and 30 minutes.

The MMS scale was also administered according to Santostefano's procedures. For all second born students each item on the MMS scale was read to the student, one situation at a time, and he/she performed the situation standing in front of a table where the items were arranged. Subjects were encouraged to use their own judgment regarding individual situation choices. Testing time for the MMS scale ranged between 20 and 45 minutes.

The CPI-Fe scale and MMS scale were administered randomly to students as informed parental consents were received. However, only one

instrument was administered per child on any day. Each subject was scheduled for test administration on two different days. Once the children had completed the items on the CPI-Fe or the MMS scale they were thanked for their cooperation and they were escorted back to their classrooms.

CHAPTER III

RESULTS

Before examining the effects of birth order on gender identification, a number of extraneous variables were tested to determine if there might be additional factors influencing gender identification. Because children's gender identification has been reported to be influenced by their parents' educational level, a number of two-way ANOVAs were performed to determine if either sibling in the four sibling groups differed on their CPI-Fe scores based on fathers' or mothers' education. The results from these tests indicate that the CPI-Fe scores of both first- (see Appendix E) and second-born siblings (see Appendix F) failed to be influenced by either fathers' or mothers' highest level of education for any of the sibling pairings. MMS scores for second-born siblings were also analyzed using a two-way ANOVA (see Appendix G) to see if they were influenced by either parents' educational level. The results of these tests again failed to show that gender identification was being affected by parents' education.

Sibling pairs were also tested to see if they differed by grade placement, fathers' and mothers' highest level of education, and number of other siblings in the home. Chi Square tests were used to do these comparisons and Tables 1 through 4 show the values used in these calculations. Table 1 shows the breakdown of second sibling by grade for each of the sibling groups. As can be seen, most of the children were

in the second, third, or fourth grades. Results of the Chi Square indicate that second siblings did not differ significantly in grade placement.

Table 1

Second Siblings by Grade Level

Grades	1	2	3	4	5	6
Boy-Boy	2	1	5	11	4	7
Boy-Girl	2	7	12	4	2	3
Girl-Boy	1	3	13	8	1	4
Girl-Girl	1	4	14	4	4	3
Total	6	15	44	27	11	17

Table 2

Educational Level of Fathers

Father's Education	Less Than 11 Years	12 Years	13 to 16 Years	16 or More Years
Boy-Boy	2	7	6	15
Boy-Girl	6	6	10	8
Girl-Boy	5	9	8	8
Girl Girl	5	6	15	4
Total	18	28	39	35

Table 3

Educational Level of Mothers

Father's Education	Less Than 11 Years	12 Years	13 to 16 Years	16 or More Years
Boy-Boy	4	8	10	8
Boy-Girl	6	8	12	4
Girl-Boy	4	5	14	7
Girl-Girl	7	3	13	7
Total	21	24	49	26

Table 4

Subjects with Younger Siblings

Number of Younger Siblings	0	1
Boy-Boy	21	8	1
Boy-Girl	26	1	3
Girl-Boy	22	3	5
Girl-Girl	23	7	0
Total	92	19	9

Tables 2 and 3 show fathers' and mothers' highest grade level for each of the sibling pairs. Pairs were not found to differ by either fathers' or mothers' education level. A look at these tables indicates that fathers primarily had 12 years or more of education while mothers were more evenly distributed across the four educational levels assessed.

Finally, the last test conducted on the subjects of the study involved assessing whether the four sibling pairs differed according to number of other siblings living in the home. Significant differences were found on this test at the .03 level. Inspection of Table 4 indicates that none of the four sibling pairs differed according to the number of other siblings living in the home. However, it appears that significantly more sibling pairs came from 2-children families than from 3- or 4-children families. Overall then, initial tests indicate that sibling groups were equivalent in terms of second siblings' grade level, parents' educational level, and number of other siblings. These factors can thus be ruled out as influencing any differences found between the sibling groups.

In order to answer the question of sibling relationships on gender identification as measured on the CPI-Fe, a three-way analysis of variance (ANOVA) was conducted for CPI-Fe scores obtained from all 240 subjects. The three main effects for the ANOVA were first-born versus second-born, male versus female, and same-sex pairs versus cross-sex pairs. Two of the three main effects were highly significant at <.001 level with same-sex sibling pairs versus cross-sexed sibling pairs failing to reach significance. Critical values and probability levels for the main effects are shown in Table 5.

Table 5

Summary of Obvious Effects from Three-Way ANOVA

Effect	Critical Value	Significant Level
Birth Order	10.637	0.001
Sex	163.558	<0.001
Same-Different	0.129	0.720

An analysis of the two-way interactions, however, indicates that the main effects were not independent of each other. Significant two-way interactions ($\alpha < .023$) were found for first-born, second-born versus same-sex pairs, cross-sex pairs; and for male, female versus same-sex, cross-sex pairs. No significant interaction was found for first-born sibling, second-born sibling versus male, female. The three-way interaction was also found not to be significant. Critical values and probabilities for the interactions derived from the three-way ANOVA are illustrated in Table 6.

Table 6

Summary of Two-Way Interactions from Three-Way ANOVA

Effect	Critical Value	Significance Level
Birth Order by Sex	1.055	0.305
Birth Order by Same-Different	5.342	0.022
Sex by Same-Different	5.224	0.023

In effect, the fact that some of the two-way interactions were significant means that the significant main effects of the three-way ANOVA, i.e., birth order and sex, cannot be taken as independent findings. For instance, in this study, the findings that the same and cross-sex sibling pairs were different was influenced by birth order and sex of the subjects. Another way of looking at the results would be to say that the main effects were compounded by each other. In order to determine how the factors in the ANOVA were affecting each other on the subjects' CPI-Fe scores, Neumon-Keuls (Myers, 1976) post hoc tests were conducted on the two-way interactions and found to be significant. Figure 1 shows the mean scores of all eight groups on the CPI.

Since the interaction of the variables first-born, second-born with male and female gender was not found to be significant and since the main effects for these two variables were significant, no additional tests were performed for this interaction. Figure 2 indicates that boys obtained more masculine scores than girls on the CPI index regardless of birth order. In addition, it appears that girls scored about the same and that boys scored about the same irrespective of birth order. This result indicates that birth order is not a factor in determining gender

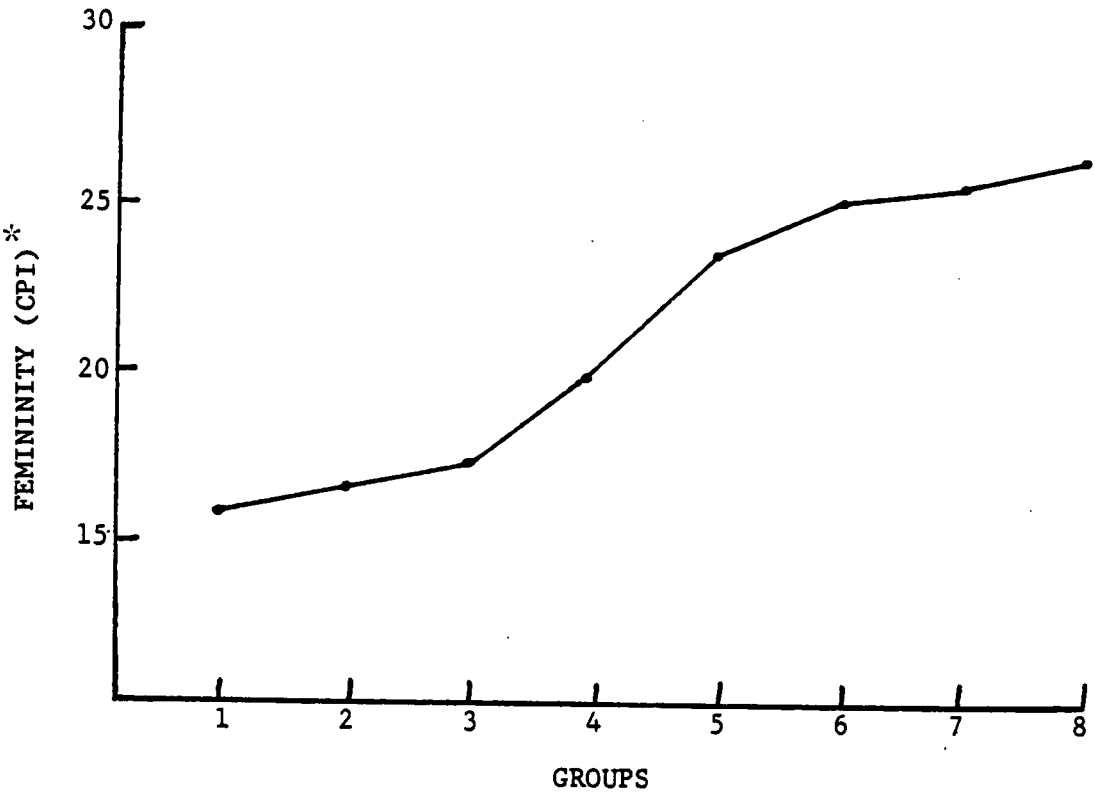

Figure 1. Femininity Scores by Groups.

Group 1: Older Brothers-Younger Sisters
Group 2: Older Brothers-Younger Brothers
Group 3: Younger Brothers-Older Brothers
Group 4: Younger Brothers-Older Sisters
Group 5: Older Sisters-Younger Brothers
Group 6: Younger Girls-Older Brothers
Group 7: Younger Girls-Older Sisters
Group 8: Older Girls-Younger Sisters

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*Possible scores range from 0 to 38.

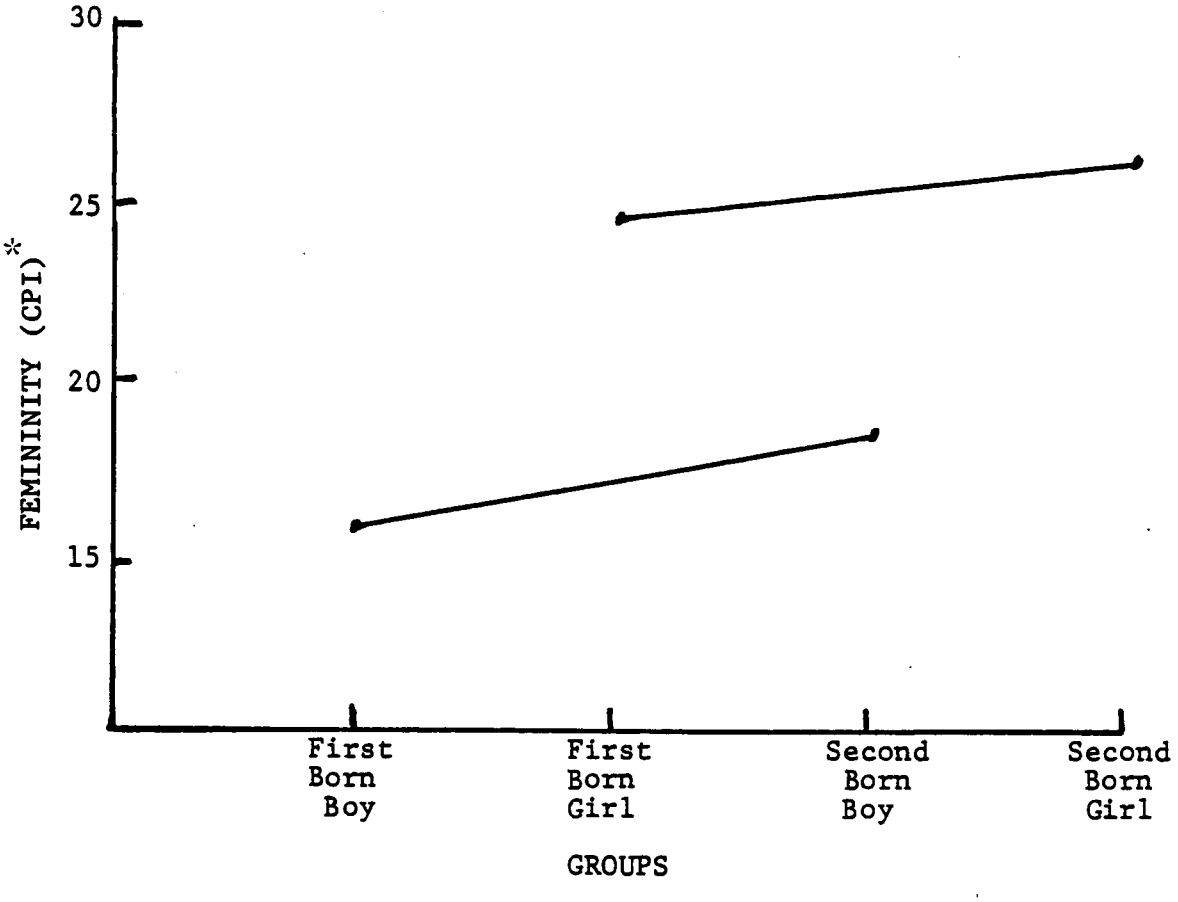

Figure 2. Birth Order by Gender.

*Possible scores range from 0 to 38.

identification based on the CPI-Fe scale. It should be pointed out, however, that scores were affected by sibling pairings, since scores obtained by boys and girls were found to be interacting with same-sex and cross-sex sibling pairings. Thus while birth order was not affecting gender identification, sibling pairings was a factor.

Figure 3 illustrates the interaction of birth order with same-sex siblings and cross-sex siblings. As can be seen, the interaction occurred because CPI-Fe scores indicate that first-born siblings are more masculine when paired with a cross-sex sibling while second-born siblings are more feminine when paired with a cross-sex sibling. The more important factor contributing to this interaction and the only one found to be significant (α .05) was the difference found between first-born and second-born siblings with cross-sex brother and sisters. It would appear that first-born children with younger cross-sex siblings are more masculine than second-born children with older cross-sex siblings who turned out to be more feminine than any of the other combinations in this interaction.

The interaction involving gender (male or female) with cross-sex pairs and same-sex pairs is shown in Figure 4. This figure indicates that female-male-male pairs scored lower on this scale. Boys and girls with cross-sex siblings scored in between. Post hoc testing (Neuman-Keuls) indicates that girls with female siblings were not significantly higher on their CPI-Fe scores than girls with male siblings. CPI-Fe scores between boys with male and female siblings were not different. Differences between boys with male and female siblings and between girls with male and female siblings were highly significant. Thus, when birth

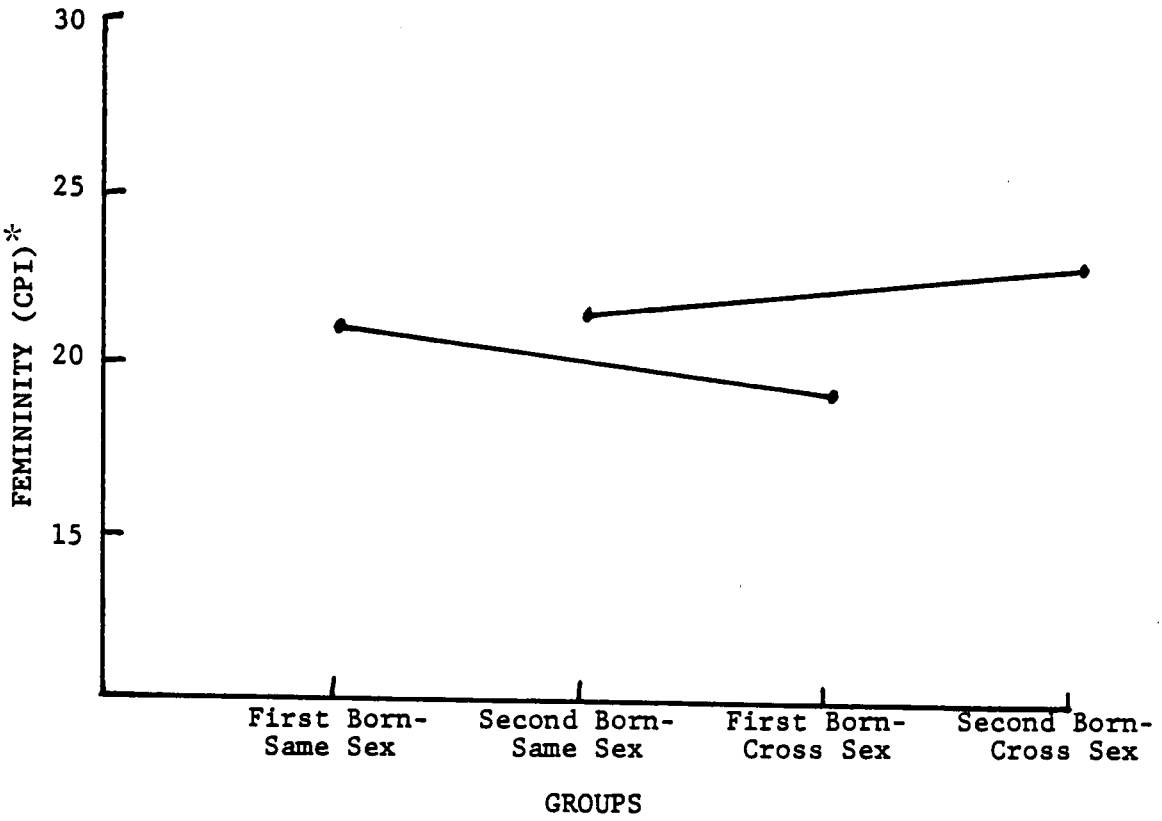

Figure 3. Birth Order by Same and Cross-Sex Siblings.

*Possible scores range from 0 to 38.

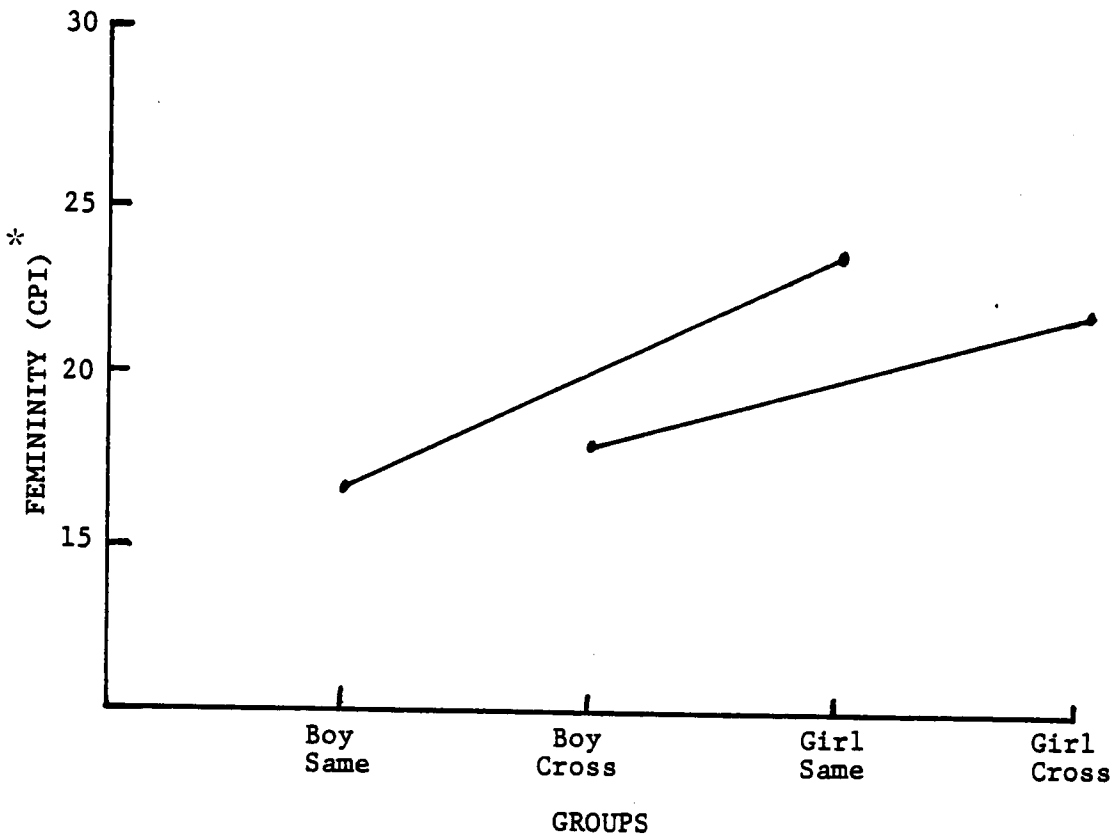

Figure 4. Gender by Same and Cross-Sex Siblings.

*Possible scores range from 0 to 38.

order is not considered, having a cross-sex sibling has no influence on gender identification.

Besides sibling differences in scores on the CPI-Fe index, a second question of interest is how well the MMS scale would correspond to the CPI-Fe scale in terms of predicting male and female characteristics. In order to test the relationship of the MMS to the CPI-Fe, scores obtained by the various siblings were correlated using Pearson Product Moment Correlation Coefficients. Table 7 shows the correlation coefficients and significance levels for all second-born siblings. Since first-born siblings did not take the MMS scale, no correlation on CPI-Fe and MMS scales could be obtained for first-born siblings. Table 7 shows that the two measures correlated fairly highly with each other in describing male-female characteristics and this correlation is highly significant. Since first-born subjects did take the CPI-Fe, correlation could be obtained between CPI-Fe scores for both older and younger siblings and between CPI-Fe scores for older siblings and MMS scores for younger siblings. Table 7 shows that all first- and second-born siblings are significantly but not highly correlated with each on both the CPI-Fe and the MMS scales.

Table 7

Correlation of CPI and MMS Scales
(N=20)

	CPFIRST	CPSECOND
MSFM	0.2520 p = .005	0.5705 p = >0.00 <.3220
CPFIRST		p = > = <0.00

Tables 8 through 11 illustrate the probability levels and Pearson Product Moment Correlations for the different sibling pair combinations. Table 8 indicates that the CPI-Fe and MMS scales are positively and significantly correlated with each other for younger boys with older brothers. Table 8 also shows that younger boys with older brothers are significantly and positively correlated with each other on both the CPI-Fe and MMS measures.

CPI-Fe measures show younger sisters and older brothers scores to be negatively correlated with each other on both the CPI-Fe scores and the MMS scores. However, Table 9 shows that only the CPI-Fe scale differentiates the children in this group in a meaningful way. The data from Table 9 also indicates that younger girls with older brothers do not score the same on the CPI-Fe index as they do on the MMS index. Correlations between the CPI-Fe and MMS scores for younger boys with older sisters, however, were found to be significant. This relationship is shown in Table 10 which also shows that younger boys, as measured on the MMS scales, are moderately and negatively correlated with older sisters as measured on the CPI-Fe index, but that CPI-Fe measures for these siblings are not correlated.

Table 11 shows that MMS and CPI-Fe measures on young girls with older sisters are moderately but significantly correlated with each other. This table also indicates that younger girls, as measured on the MMS index, show a low but significant correlation with older girls as measured on the CPI-Fe index. The CPI-Fe index showed that older and younger girls scores are fairly highly and significantly correlated with each other.

Table 8

Correlation of Older Brothers and Younger Brothers
(N=30)

	CPFIRST	CPSECOND
MSFM	0.3841 p = .036	0.4505 p = .012
CPFIRST		0.4588 p = .011

Table 9

Correlation of Older Brothers and Younger Sisters
(N=30)

	CPFIRST	CPSECOND
MSFEM	-0.0648 p = .734	0.0476 p = .803
CPFIRST		-0.3815 p = .038

Table 10

Correlation of Older Sisters and Younger Brothers
(N=30)

	CPFIRST	CPSECOND
MSFEM	-0.4399 p = .015	0.3572 p = .053
CPFIRST		0.0467 p = 0.806

Table 11

Correlation of Older Sisters and Younger Sisters
(N=30)

	CPFIRST	CPSECOND
MSFEM	0.3659 p = .047	0.5536 p = .002
CPFIRST		0.6354 p>0.00

Since the MMS index is a new index for assessing gender identification and the CPI-Fe has only been used relatively infrequently for gender identification in children, a test of internal validity was obtained for both measures using alpha coefficients (Cronbach, 1951). The alpha coefficients shown in Table 12 indicate how well the tests actually measure gender traits. The higher the alpha coefficients the better the validity of the test in question. As can be seen in this table, alpha coefficients were quite high for the CPI-Fe scores of both first- and second-born siblings and for the MMS scores of the second-born siblings with the highest reliability obtained for the first born CPI-Fe scores and the lowest for the MMS measures. It appears, then, that both the CPI-Fe index and the MMS index are reliable indications of gender identity in latency age children.

In summary, the major findings of the present study were:

1. Gender identification appears to be independent of birth order.

2. Boys with same-sex siblings are most masculine and girls with same-sex siblings are most feminine on the CPI-Fe index.

Table 12

Alpha Coefficients

	CPI Alpha	Standardized Item Alpha
First born = 0.84914		= 0.85227
Second born = 0.77013		= 0.77380
	MMS Alpha	
Second born = 0.68562		= 0.68766

3. First-born children with cross-sex siblings are more masculine than second-born children with cross-sex siblings.

4. First-born children with cross-sex siblings are significantly more masculine than first-born children with same-sex siblings.

5. Second-born children with cross-sex siblings are significantly more feminine than second-born children with same-sex siblings.

6. The MMS scale devised for this study appears to reliably predict gender identification when compared to the CPI-Fe scale.

7. Parental educational level is not associated with the development of gender identification for the subjects employed in this study.

8. Erikson's and Gutmann's theories still seem accurate and relevant to this population.

9. The CPI-Fe scale does lend validity to Bakan's terms "agency" and "communion."

CHAPTER IV

DISCUSSION

The initial emphasis for this study was to help clarify the ambiguity found in the literature concerning the effect of birth order on gender identification. While investigators such as Koch (1954) report that there are differences in gender differentiation according to birth order and sibling influence, others such as Vroegh (1971) contend that these factors do not affect gender identification. The three-way ANOVA in this study supports some of the findings of previous studies using similar groupings by showing that the subjects' masculine and feminine characteristics as measured by the CPI-Fe were not significantly affected by birth order alone. This can be seen in Figure 2 (p. 60) which shows that girls' scores are much more feminine than boys' scores regardless of birth order. In addition, as can be seen in Figure 4 (p. 63), boys are significantly more masculine than girls as measured by the CPI-Fe regardless of the gender of their siblings. This can also be seen clearly in Figure 1 (p. 59) which shows that girls obtain greater mean CPI-Fe scores than boys regardless of sibling combination.

While it might be anticipated that the girls' scores would be more feminine than the boys' scores regardless of sibling pairings, Figure 3 (p. 62) indicates that there are some interesting interactions occurring between sibling pairings and birth order. Although there are no differences between gender differentiation of first- and second-born children with the same sex siblings, it appears that the obverse is not true.

When first-born children, regardless of gender, have opposite sex siblings, they are significantly more masculine as measured by the CPI-Fe than their second-born siblings (again regardless of gender). Thus, even though birth order does not affect masculine traits in boys and girls, it does affect gender differentiation of first- and second-born siblings in cross-sex pairs.

In addition, the present study found the effects of siblings regardless of birth order is important for gender identification where cross-sex sibling pairs were concerned. Except for Vroegh's findings, it would appear that the CPI-Fe, when used as a measure of gender identification, is consistent with other results reported in the literature regarding gender identification. The one finding that has been repeatedly cited in the literature (Koch, 1954; Brim, 1958) is that an older sister-younger brother sibling pair results in greater femininity for the younger brother. This study supports that finding. However, what this study does that other studies have failed to do is to simultaneously look at the gender differentiation of the older sibling. It would be just as correct to say, given the results of this study, that having a younger brother makes an older sister score more masculine. Altus (1966) seems to have been correct when he proposed that the effects of birth order are the results of other familial factors. Family constellation, then, seems to be the single most important variable in this study.

In order to help validate the findings reported in this study, a number of demographic variables were tested for their possible influence on the results obtained. These included determining whether the four

groups differed from each other according to fathers' educational level, mothers' educational level, siblings' grade level, and the number of other younger siblings living in the household. The four sibling groups were found not to be significantly different on any of these factors except the number of younger siblings living in the household. On this last item, there was a small (α .03) difference between the number of second-born siblings who had one, as opposed to two, younger siblings. However, two-children families were found to be much more prevalent for the children in this study than were households with three or more children. Two-sibling families comprised 77% of this population. By controlling for such factors which might influence gender identification, the present results would appear more valid.

It is interesting to hypothesize which familial factors cause first-born children, regardless of gender, to have more masculine scores only when they have a younger sibling of the opposite sex. Likewise, why do second-born children have more feminine scores regardless of gender only when they have an older cross-sex sibling? Several existing theories might be integrated to explain these results.

First, the earlier research on birth order might explain some of the differences. The works of Cattell (1917), Adler (1923), Lasko (1954) and Sears (1957) taken together would support the hypothesis that there are strong psychological demands for achievement placed on the first-born child. While achievement might by itself be taken as a masculine trait, it certainly encompasses the traits of assertion and/or aggression, mastery, isolation and activity. These are the four main categories of terms cited repeatedly in the literature as masculine traits. Since

second-born children (Lasko, 1954) do not have these psychological demands imposed upon them, it is conceivable that they could be less achievement oriented (i.e., less masculine) than their first-born counterparts. However, this theory would not explain why there is not a significant difference in same-sex siblings.

Since boys scored in a more masculine direction compared with girls, regardless of birth order, and since first-born boys with cross-sex siblings were more masculine on the CPI-Fe index than first-born girls with cross-sex siblings, it seems evident that other factors are enhancing the masculinity and femininity scores in cross-sex sibling dyads.

A second theory that might help to explain the differences in masculinity and femininity scores for cross-sex siblings incorporates the work of Koch (1954), Bigner (1972), and Brim (1958). For instance, Brim (1958) found that corss-sex siblings had more traits of the opposite sex than did same-sex siblings. This research supports this finding for boys with older sisters but not for younger sisters with older brothers. Bigner (1972) also found that boys with older sisters were more feminine than boys with older brothers which is congruent with these findings. This research supports the belief, as shown in Figure 2 (p. 60), that the sex of sibling pairs is indeed an important factor in gender identification. Koch (1954) explained the effects of cross-sex older siblings on younger siblings by hypothesizing greater opportunities for cross-sex siblings to experience and incorporate culturally defined gender traits of the opposite sex. She also noted that cross-sex siblings were very stimulating to each other. A similar explanation was offered by Brim

(1958) regarding the influence of cross-sex siblings. It would appear that in the present study similar cultural influences may have been operating for some older female-younger male dyads as birth order was seen to be an important determinant for gender identification only in these pairs. For some reason, this particular combination seems to make the siblings more alike, in regards to gender identification while in the older male-younger female dyad it serves to make them more different.

A third argument that might help to explain this difference is in the works on gender identification done by Jacobson (1964) and Mahler (1975). They believe that gender identification is more difficult, in normal development, for the female child. It would seem plausible that a first-born girl might not be aware of her lack of a penis in her early development. If she views her parents naked, which she may or may not do, she might attribute this to adult anatomy. However, when the birth of a male sibling occurs, she may suddenly and traumatically be faced with her "castration." This development which occurs only at the birth of a male sibling may exacerbate her anger and defiance and may increase her tomboyish behavior into latency age.

In the obverse dyad, a female child born into a family with an older brother would perhaps never experience a "castration" shock. Since she would know from her birth that she is anatomically different, this difference might serve to reinforce her feminine behavior. Since she is obviously and immediately aware of her "castration," rapprochement with maternal ego identification may be an easier task.

For older males with younger females, gender identification may be relatively easy. The young male may become more excited over his

penis when he discovers his younger sibling is without one. His mother's respect of his "phallicity" may greatly enhance his masculine orientation.

For second-born boys with older sisters, a phenomenon similar to that seen in second-born cross-sex females may occur. The second-born male, immediately aware that he is different from his older, more accomplished sister, may not experience the joy of his penis. Since his older sister is more adept, he may look at his "phallicity" as a possible hindrance and his gender identification may take a more tenuous and difficult path, lasting at least into latency age.

Similarly, it is plausible that care-taking of the young by older siblings, regardless of sex, may help them acquire a sense of mastery or competency. In contrast, younger siblings who are being looked after by older siblings by virtue of their passive role would view themselves as more feminine on gender identification indexes. The fact that differences are only significant for cross-sex siblings may be due to a greater perceived difference between older siblings and cross-sex younger siblings because of the different cultural skills each acquires. In other words, older boys may perceive the competency of younger brothers and younger sisters differentially, i.e., they may see younger sisters as having less male-related coping skills and hence less competency. This same dynamic may be at work in the case of older sisters who may perceive more helplessness in younger brothers than younger sisters. The cross-sex differences found in this study may therefore be attributed to two factors: differences (in terms of less competent cultural skills) that older siblings see in their younger opposite-sex

sibling combined with a culturally defined protective role taken on by older siblings in relation to their younger, more helpless siblings.

A third finding of interest in the literature on sibling gender identification (Brofenbrenner, 1967) indicates that parents' socioeconomic status can be a factor in their offspring's gender identification. The higher the socioeconomic level of the families, the more blurred gender identification becomes as a result of changing gender identification of the parents. Brofenbrenner believes that, as parents assume less stereotypic roles, children have a harder time differentiating masculine and feminine role behaviors. In the present study, fathers' and mothers' educational level was used as a measure of socioeconomic status in order to determine if gender identification differed for various levels of parental education. The results from the investigation of these factors indicate that neither the CPI-Fe for the first-born, CPI-Fe for the second-born, or MMS scores were significantly affected by either parents' educational level. It would appear that the present results do not support Brofenbrenner's hypothesis concerning socioeconomic status and gender identification in children. These negative findings are more than likely due to either: (1) the inability of parental educational level to accurately define socioeconomic status, or (2) the lack of a relationship between the blurring of paternal and maternal modeling and upper mobility in socioeconomic status, or (3) the lack of any relationship between either socioeconomic status or parental role modeling and the gender identification of children. From the present study, however, it is only possible to say that parental educational level was not a factor with this population.

This study also supports the earlier theorists such as Gutmann (1965), Erikson (1964), Jacobson (1964), and Mahler (1975) who said that boys are in fact different from girls. It seems evident, than when given a choice, boys will choose very different activities from girls. Also for this population boys' and girls' interests are still very different in spite of more egalitarian practices in the schools (e.g., reading books portraying women as competent work-role models). Boys are more likely than girls to be aggressive, competitive, active and isolated. These four constructs form the nucleus of Gutmann's (1965), Erikson's (1964), Jacobson's (1964), and Mahler's (1975) observations. Boys' ego functions, with regard to gender differentiation, are more "agentic" and girls' ego functions are more "communal" in their behaviors. Perhaps this is what Friedman (1981) is referring to when she talks about women denying certain yearnings as they seek equality. Women, it seems, are saying that they value those feminine ego functions in spite of their striving for equality in the world of work.

However, a possible limiting factor of this study is that the CPI scales are a bipolar measure of masculinity or femininity. That is to say that the presence of one attribute precludes the possibility of a second related attribute. In other words, masculine, agentic qualities would preclude the existence of feminine, expressive qualities as measured by this scale. It is possible that measuring instruments which utilized a dualistic (or androgeneous) concept would have produced different results.

Besides looking at the effect of sibling relationships on gender identification, a second question of interest was how well the MMS

measured gender traits. Since the MMS was specifically modified for this study, its correlation with a measure already used to assess gender identity would help validate its usefulness in this area. According to Table 7 (p. 64) there is a fairly large correlation which is highly significant between the MMS and the CPI of the second-born siblings. This correlation is for all second-born siblings regardless of gender.

In looking at the specific pairings, the MMS and CPI-Fe index are significantly correlated for second-born boys and girls as shown in Tables 8 (p. 66) and 11 (p. 67). In addition, the Pearson-Product-Moment Correlations shown in Tables 9 and 10 (p. 66) indicate that the MMS and CPI-Fe scale are not significantly correlated when compared to opposite sex siblings. It would thus appear that Tables 7-11 (pp. 64, 66, 67) support the ability of the MMS to assess gender identification in latency aged children. Since the MMS is a relatively quick and easy procedure to administer, it may provide a useful new tool in studying sibling relationships and gender identification.

Tables 8-11 also give some indication of how the different sibling pairs from the four sibling groups have similar or dissimilar gender identification using both the CPI-Fe and MMS scales. These tables indicate that both the boy-boy and girl-girl groups were positively correlated with each other on both of these measures at a moderate level except for the CPI-Fe scales of the girl-girl group which were highly correlated. For the older boy-younger girl pair, both the MMS and CPI-Fe first-born scale and the CPI-Fe first- and second-born scale were negatively correlated but only the CPI-Fe first- and CPI-Fe second-born

were significantly negatively correlated. The CPI-Fe first-born and CPI-Fe second-born scores were not significantly correlated.

The correlation coefficients for the two mixed groups indicate that girls and boys, regardless of birth order, score opposite from each other for both the CPI-Fe and CPI-Fe-MMS correlations. The fact that the MMS-CPI was not significant for the boy-girl group or that CPI-Fe first and second correlation was not significant for the boy-girl group may be due to the interaction occurring between opposite sex siblings and birth order and gender. It would appear that the MMS scales and CPI-Fe scales are differentially sensitive to these interactions for the mixed group pairs.

It is impossible, from this to study, to say whether the CPI-Fe and the MMS scales are measuring the same or different factors. While it seems plausible that they are measuring similar traits, more research on these two instruments would have to be conducted.

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APPENDIXES

APPENDIX A

April 4, 1982

Dear Parent(s),

A graduate student at The University of Tennessee is interested in learning more about the interrelationships between brothers and brothers, sisters and sisters, and brothers and sisters. Since you have two children in the Maryville City School System, we are asking permission for your children to participate by responding to some questions regarding their interests and activity preferences. This should involve no more than 15 to 60 minutes of your children's time and will be conducted at school during non-academic class periods.

Besides this session with each of your children, we are requesting that you, as parents, complete brief parental interview form with some simple questions about your family. This should take no more than 15-20 minutes of your time.

By signing this form you are giving permission for your children to participate. You are, however, free to withdraw your consent at any time without consequences. The questionnaire you receive does not contain sensitive questions and will be strictly confidential. It will only be seen by the graduate student doing the project.

A duplicate copy of the parental permission form is being sent to you to keep as a copy so that you may refer to it later if needed.

If you have any questions concerning this project, please contact Joann Murphey at 584-0810 or 947-8023.

Sincerely,

Joann Murphey,
Graduate Student

_____
Parent or Guardian Signature

Children's Names and Birthdates:

	Name	Birthdate
1.		
2.		
3.		
4.		

APPENDIX B

I. First born child's Name _____ Age _____

Birthdate _____ Grade _____

Second born child's Name _____ Age _____

Birthdate _____ Grade _____

Has second born child been retained (failed) yes or no

If child has been retained, what grade(s) _____

Other children in family: Name _____ Age _____

Birthdate _____ Grade _____

If none, please indicate:

Name _____ Age _____

Birthdate _____ Grade _____

Home Address _____

Home Phone _____

Child lives with 1) both his parents; 2) mother only; 3) father only; 4) mother and stepfather; 5) father and stepmother; 6) foster parents, 7) other, please explain

_____

Is this the first marriage for the second born child's father? yes or no

Is the first marriage for the second-born child's mother? yes or no

Natural Father's Name _____ Age _____

What is the highest grade father completed? 11 years or less, 12 years, 13 to 16 years, 16 or more

Father's occupation _____

Father's place of employment _____

Natural Mother's Name _____ Age _____

What is the highest grade mother completed? 11 years or less, 12 years, 13 to 16 years, 16 or more

Mother's occupation _____

Mother's place of employment _____

Other relatives or persons living in the home: _____

_____

If the child lives with a stepparent, please include this data:

Stepparent's Name _____ Age _____

What is the highest grade stepparent completed? 11 years or less, 12 years, 13 to 16 years, 16 or more

Stepparent's occupation _____

Stepparent's place of employment _____

What kinds, if any, of behavior cause you concern at home regarding your child?

_____

_____

What concerns do you have, if any, regarding your child's school progress or adjustment?

_____

_____

Does your child have specific problems in: (Comment of any you know)

Reading _____

Math _____

Spelling _____

APPENDIX C

		True	False
1.	I am very slow in making up my mind.	____	____
2.	I think I would like the work of a building contractor.	____	____
3.	I think I would like the work of a dress designer.	____	____
4.	I become quite irritated when I see someone spit on the sidewalk.	____	____
5.	It is hard for me to start a conversation with strangers.	____	____
6.	I must admit that I enoy playing practical jokes on people.	____	____
7.	I get very tense and anxious when I think other people are disapproving of me.	____	____
8.	A windstorm terrifies me.	____	____
9.	I think I would like the work of a clerk in a large department store.	____	____
10.	I get excited very easily.	____	____
11.	I like to boast about my achievements every now and then.	____	____
12.	I think I would like the work of a garage mechanic.	____	____
13.	I like adventure stores better than romantic stories.	____	____
14.	I prefer a shower to a bathtub.	____	____
15.	The average person is not able to appreciate art and music very well.	____	____
16.	The thought of being in an automobile accident is very frightening to me.	____	____
17.	At times I feel like picking a fist fight with someone.	____	____
18.	Sometimes I have the same dream over and over.	____	____

19.	I think I am stricter about right and wrong than most people.	____	____
20.	I think I would like to drive a racing car.	____	____
21.	I like to be with a crowd who plays jokes on one another.	____	____
22.	I am somewhat afraid of the dark.	____	____
23.	I think I could do better than most of the present politicians if I were in office.	____	____
24.	I am inclined to take things hard.	____	____
25.	I always tried to make the best school grades that I could.	____	____
26.	I would like to be a soldier.	____	____
27.	I like to go to parties and other affairs where there is lots of loud fun.	____	____
28.	I very much like hunting.	____	____
29.	In school I was sometimes sent to the principal for cutting up.	____	____
30.	I think I would like the work of a librarian.	____	____
31.	Sometimes I feel that I am about to go to pieces.	____	____
32.	I would like to be a nurse.	____	____
33.	If I were a reporter I would like very much to report news of the theatre.	____	____
34.	I like mechanics magazines.	____	____
35.	I want to be an important person in the community.	____	____
36.	I must admit I feel sort of scared when I move to a strange place.	____	____

37. I'm pretty sure I know how we can settle the international problems we face today. ____ ____

38. If I get too much change in a store, I always give it back. ____ ____

APPENDIX D

A. Aggression, Assertion versus Nurturance

1. Place two sheets of paper in front of the S and say: "Which one do you want to do, tear this sheet of paper or fix this torn piece of paper with scotch tape."

2. Say: "Which would you rather do? Look at this picture of an explosion or look at a picture of a beautiful outdoors scene."

3. Say: "Either hammer this nail or water this plant."

4. Say: "Either cut this design out or color it in. Which would you rather do?"

5. Say: "Either arrange these flowers in the vase or count these buttons in the container. Which would you rather do?"

B. Mastery, Independence, Conquest versus Compliance, Tolerance, Dependence

1. Say: "In this folder I have some lines from a play. Either read them to yourself or we can both read them out loud and each of us can take a part." For younger children you might add: "You can read one line and I can read another and we can act it out, or would you like to read it by yourself."

2. Say: "Here is a game that one person can play or two people can play. Would you like to play the game alone or would you like to play the game with me?"

3. Say: "Which would you rather do, would you rather put the paper clip on these two sheets of paper or would you like to take the paper clip off of these two sheets of paper?"

4. Say: "Here is a group of dolls. Here is a new doll. Should we put the new doll over here by himself (herself) or with the other dolls.?"

5. "Say: "Which would you rather do? Go on a picnic or fly a kit?"

C. Isolation, Aloneness versus Union, Mergining and Shared Expectations

1. Say: "Either trace this design on this sheet of paper or draw the design without tracing it. Which would you rather do?"

2. Say: "We can either play a game that you know or we can play a game that I know. Which would you like to do? Would you like to play my game or should I play your game?"

3. Say: "Here is a square that I would like you to color. Everyone else has colored it red. Would you like to color it red or would you like to color it some other color?

4. Say: "Let's play a game of follow the leader. Would you rather be the leader or should I be the leader?

5. Say: "Now with this game you and I will work together. One of us will hold a pencil at the starting point here and then he will close his eyes. The other person will give him directions, for example, go to the left, go straight ahead, and so on, guiding the person who has his eyes closed so that he (she) can draw a continuous line through each of these squares in the order that they are numbered and end here at square three. Now you can guide me and I'll hold the pencil or you can have me guide you and you can hold the pencil. Which one would you rather do, should I guide you or do you want to guide me?"

D. Vigorous, Active versus Inactive, Passive

1. Say: "This is a tape recorder. It makes a record of a person's voice and it plays records of your voice. Which would you rather do, listen to my voice on the machine or your voice?

2. Say: "Either you pin this badge on me or let me pin this badge on you or should you pin it on me?"

3. Say: "Which would you rather do? Throw the ball to me or have me throw the ball to you?

4. Say: "In this folder I have a picture of a painting by a famous artist. You can either look at the painting or you can measure how long this screw is with this ruler. Which one would you like to do?"

5. Say: "Would you rather build something out of these blocks or would you rather have me build something with the blocks and then you can tell me what you think of it?"

APPENDIX E

Table 13

Summary of Effects of Fathers' Educational Level by First-Born Siblings' CPI Scores from Two-Way ANOVA

Effect	Critical Value	Significance Level
Fathers' Education	0.353	0.787
Fathers' Education by CPI Scores	0.261	0.984

Table 14

Summary of Effects of Mothers' Educational Level by First-Born Siblings' CPI Scores from Two-Way ANOVA

Effect	Critical Value	Significance Level
Mothers' Education	0.216	0.885
Mothers' Education by CPI Scores	0.956	0.481

APPENDIX F

Table 15

Summary of Effects of Fathers' Educational Level by Second-Born Siblings' CPI Scores from Two-Way ANOVA

Effect	Critical Value	Significance Level
Fathers' Education	0.467	0.706
Fathers' Education by CPI Scores	0.389	0.938

Table 16

Summary of Effects of Mothers' Educational Level by Second-Born Siblings' CPI Scores from Two-Way ANOVA

Effect	Critical Value	Significance Level
Mothers' Education	1.194	0.316
Mothers' Education by CPI Scores	0.985	0.457

APPENDIX G

Table 17

Summary of Effects of Fathers' Educational Level by Second-Born Siblings' MMS Scores from Two-Way ANOVA

Effect	Critical Value	Significance Level
Fathers' Education	1.454	0.232
Fathers' Education by MMS Scores	0.908	0.522

Table 18

Summary of Effects of Mothers' Educational Level by Second-Born Siblings' MMS Scores from Two-Way ANOVA

Effect	Critical Value	Significance Level
Mothers' Education	0.829	0.481
Mothers' Education by MMS Scores	0.544	0.839

VITA

E. Joann Murphey was born in Knoxville, Tennessee. She graduated from high school in Abilene, Texas, and attended a variety of undergraduate schools. She received a B.S. and M. S. degrees from The University of Tennessee, Knoxville, in 1968 and 1972, respectively. She taught elementary school for several years and then began work toward her Ph.D. in School Psychology. After completing her internship in School Psychology she continued to work as a school psychologist for a school system. Her work, in that setting, with emotionally disturbed children enhanced her desire for additional skills and so she pursued a doctorate in clinical psychology at The University of Tennessee, Knoxville. Ms. Murphey plans to do psychotherapy with both children and adults.