5-1980

Masculinity, femininity, & androgyny : the interaction of college students with preschoolers

Jan Alexandra Jones

MASCULINITY, FEMININITY, & ANDROGYNY:

THE INTERACTION OF COLLEGE STUDENTS WITH PRESCHOOLERS

BY

JAN ALEXANDRA JONES

A THESIS
SUBMITTED TO THE GRADUATE FACULTY
OF THE UNIVERSITY OF RICHMOND
IN CANDIDACY
FOR THE DEGREE OF
MASTER OF ARTS IN PSYCHOLOGY

MAY 1980

APPROVED:

Joanne C. Preston 8/21/79
COMMITTEE CHAIRMAN DATE

William E. Walker 8/21/79
COMMITTEE MEMBER DATE

Joan N. Dickinson 8/21/79
COMMITTEE MEMBER DATE

ABSTRACT

The relationship between sex-typing and the interaction of college students with 2- to 4-year-old male and female children was examined. Seventy-one Introductory Psychology students were administered the Bem Sex-Role Inventory (BSRI), which was scored in terms of the 7 factors introduced by Walker & Preston (1979). Small groups of 3 and 4 individuals were randomly selected to spend 20 minutes in the Child Development Lab, where they had the opportunity to interact with the children, to play with the toys, to observe, and to interact with each other. The behavior of each individual within the groups of students was recorded by trained raters observing through a 1-way mirror. Although it was predicted that the factors of Nurturance and Autonomy would account for the majority of the variance, a cannonical correlation failed to indicate significant results. Results are discussed in terms of the behavioral observation technique employed, the predicting value of the BSRI, and implications for future research.

Masculinity, Femininity, & Androgyny: The Interaction of College Students with Preschoolers

A new wave of research on role behaviors stereotypically associated with males and females was introduced in 1974 when Bem developed a measure of sex-typing based on the assumption that masculinity and femininity are two independent dimensions rather than opposite ends of a bipolar continuum. Bem's research was strongly influenced by the theoretical work of Bakan (1966), describing his bipolar constructs of agency and communion. For Bakan, agency and communion encompass much of the masculine-feminine stereotype respectively (Brown & Marks, 1969). Bem, however, points out a major limitation of a sex-role dichotomy in that it obscures the possibility that many individuals are both masculine and feminine, or "androgynous" (Bem, 1974). Walker & Preston (1979) go beyond the two independent dimensions of masculinity and femininity originally measured by Bem's scale. Their factor analysis of the Bem Sex-Role Inventory (BSRI) yields 8 independent components involved in sex-typing. Rather than assigning a sex-type as proposed by Bem (1974), the multiple dimension profile would enable both males and females to demonstrate groups of masculine and feminine characteristics (Walker & Preston, 1979). It is this progression in the research on sex-roles, with an emphasis on the situational influence on sex-typed behavior, which lays the groundwork for the present study.

Bakan (1966) proposes that a fundamental polarity underlies human existence, anchored by the constructs of agency and communion -- "agency for the existence of an organism as an individual, and communion for the participation of the individual in some larger organism of which the individual is a part" (Bakan, 1966). Agency is manifested in separation, a drive toward mastery, self-protection, self-assertion, and self-expansion. Communion is manifested in the formation of unity with other organisms, in openness, in noncontractual cooperation, and in the expression of feeling. One of Bakan's basic conceptions is that agency and communion are male and female principles, differentiating the composite of males from the composite of females (Carlson, 1971).

Bem's major criticism of a bipolar continuum of masculinity-femininity such as Bakan's agency and communion, is that it fails to take into consideration that many individuals are androgynous; they might be "both masculine and feminine, both assertive and yielding, both instrumental and expressive depending on the situational appropriateness of these various behaviors" (Bem, 1974). Masculinity and femininity are therefore viewed in terms of an orthogonal two-dimensional model. The influence of Bakan is acknowledged as Bem uses the terms "instrumental" and "agentic" to describe the masculinity scale, and "expressive" and "communal" to describe the femininity scale (Wiggins & Holzmuller, 1978).

Bem also points out that a bipolar dimension of personality would obscure evidence that strongly sex-typed individuals may have a limited range of behaviors available to them across situations. In addition to the assumption that the concept of androgyny

is a reliable one, an underlying assumption of the BSRI is that the highly sex-typed individual is one who has internalized society's sex-role of appropriate behavior for males and females. Bem determined that both masculinity and femininity scores were correlated with social desirability, however there is a near-zero (-.06) correlation between social desirability and androgyny. Androgynous individuals have the psychological freedom to engage in whatever behavior they perceive is most effective in that situation, irrespective of the stereotype of masculine or feminine (Bem, 1976). The BSRI has permitted extensive research on sex-typing, and androgyny in particular.

As Kelly & Worell (1977) acknowledge, a review of Bem's research suggests that the sex-types assessed by the BSRI enable prediction of a subject's choice of sex-stereotypical activities, and supports the conception that cross-sex behavior is restrictive and motivationally difficult for sex-typed individuals. The sex-typed person is motivated throughout the process of sex-role socialization to maintain behaviors which are consistent with an internalized sex-role standard (Bem, 1974). These individuals are striving to maintain a self-image of masculine or feminine, and do so "by suppressing any behavior that might be considered undesirable or inappropriate for his sex" (Bem, 1974). In research by Bem et al (1974, 1975, 1976), traditional males were shown to be more independent and resistant to conformity in judgments than traditional females, they were shown to forfeit payment in order to be photographed doing sex-appropriate behaviors rather than doing the higher paying cross-sex behaviors,

and were shown to demonstrate significantly less involvement with a kitten than did feminine or androgynous subjects. The results for traditional females have been less conclusive; although feminine subjects failed to demonstrate masculine independence and conformed on more trials than masculine and androgynous subjects, they did not demonstrate the feminine playfulness and nurturance that exposure to a kitten was expected to evoke. The evidence does suggest, however, that sex-typed individuals suppress cross-sex behaviors, although these behaviors may be more adaptive for a given situation.

A major contribution of the BSRI is the opportunity to look at behavior of individuals who are both masculine and feminine, or androgynous, in relation to that of traditional males and females. Bem has hypothesized that androgynous individuals are more likely than either masculine or feminine individuals to demonstrate a more adaptable sex-role orientation, engaging in behavior effective for the situation without regard for its stereotype as more appropriate for one sex or the other (Bem, 1975). Psychological androgyny has been described as a "desirable sex role outcome for both males and females in a time when traditional sex role distinctions are being challenged" (Heilbrun, 1976). Androgynous individuals are proposed to have a broader repertoire of effective behavioral options to engage in across situations than either traditional males or females (Kelly & Worell, 1977). In the series of studies which has been mentioned

above (Bem et al, 1974, 1975, 1976), androgynous subjects demonstrated masculine independence in resisting pressures to conform, displayed feminine playfulness with the kitten, failed to show the tendency to select stereotypic behaviors in which to be photographed over the more highly paid alternative behaviors, and reported feeling more comfortable in performing cross-sex behaviors than indicated by similar reports from either the traditional male or female subjects.

As an extension of the earlier study where subjects were given the opportunity to interact with a kitten, Bem (1976) attempted to evoke the "nurturant sympathies" of subjects in an interpersonal setting. Masculine, feminine and androgynous subjects were left alone with a baby for 10 minutes while observers watched the interaction from behind a 1-way mirror. All subjects participating in the experiment had experienced little prior exposure to babies. It was expected that feminine and androgynous subjects would be significantly more nurturant toward the baby than masculine subjects, as defined by smiling at the baby, talking to the baby, kissing or nuzzling the baby, holding it, and stimulating it by touch or with a toy. It was also predicted that there would not be a significant difference between androgynous and feminine subjects in regard to nurturance. Results confirmed the hypotheses, with masculine subjects demonstrating significantly less nurturance toward the baby than either feminine or androgynous subjects, and with androgynous and feminine subjects

not differing significantly in regard to nurturance.

The present study is an extension of Bem's 1976 experiment attempting to evoke the "nurturant sympathies" of college students with 4- to 7 1/2-month-old babies. When placed in the Child Development Lab with 2- to 4-year-old children, the college students are encountering a different situation. The preschool child is able to iniate an interaction as well as being capable of reacting in many ways to the adult.

Criticism of the BSRI basically acknowledges its adequacy as a measuring device for determining the sex-typing of individuals, although several important questions have been raised. Strahan (1975) expresses concern that the BSRI score is strongly influenced by the subject's frame of mind or transient mood state, and points out the drawbacks of using a t ratio. Strahan (1975) and Spence et al. (1975) offer the criticism that the instrument fails to distinguish between low-low androgynous and high-high androgynous individuals. Bem (1977) acknowledges the validity of this criticism and has adjusted the scoring procedure for her scale accordingly. Kelly & Worell (1977) have offered a very pointed criticism, saying that the scoring procedure using median cutoffs to place individuals into one of 4 sex-role quadrants yields only broad typologies. They advocate the use of a graded continuum or interval scale in determing individual scores rather than types; in addition, they suggest that negatively valued traits be added to the items on the inventory.

In regard to sex-typing itself, Wakefield et al. (1976) and later Kelly & Worell (1977) offer supportive resluts for Bem's research, finding a near zero loading of the androgyny measure on the Masculinity-Femininity factor for both sexes. Their results indicate that the construct of androgyny is virtually independent of masculinity-femininity on personality inventories. In addition, the results of Gaudreau's (1977) factor analysis support the assumption that masculinity and femininity are to be considered as independent, uncorrelated traits rather than as one bipolar dimension. Gaudreau identifies the first factor as masculine, which includes 17 of the 20 masculine items on the BSRI. The second factor is identified as feminine, including 13 of 20 feminine adjectives. A third factor is defined by gender of the respondent and the adjectives "feminine," "masculine," and "atheletic." Gaudreau's fourth factor is termed a maturity factor which is independent of sex. This principal factor study producing 4 factors — suggests a multidimensional approach to sex-typing.

A principal component analysis of the BSRI items and gender by Berzins et al. (1978) found 8 factors which accounted for 56 percent of the total variance. Exclusively masculine adjectives defined 4 factors, which were refered to as Social Ascendancy, Autonomy, Intellectual Ascendancy, and Physical Boldness. Three factors were defined by feminine adjectives -- Nurturant Affiliation, Self-subordination, and Introversion. Similar to Gaudreau's third factor, the eighth

source of variation was defined by gender and the items "feminine" and "masculine." The analysis by Berzins et al. (1978) lends additional support to a multidimensional approach to sex-typing. The increased power in this analysis over that of Gaudreau (1977) suggests that the 8 components of sex-typing deserve further attention in future research (Walker & Preston, 1979).

To provide additional information on the dimensions of the BSRI, Walker & Preston (1979) performed principal component analyses on the scale for two populations, totaling to 947 individuals. The results yielded 8 components which accounted for 52 percent and 57 percent of the total variance respectively. The first factor is Sensitivity, or Nurturance, which includes 8 items from the femininity subscale (affectionate, sensitive to the needs of others, understanding, compassionate, eager to soothe hurt feelings, warm, tender, gentle), the femininity subscale itself, and the originally neutral item "sincere." The second component termed Social Ascendancy is composed of 7 masculine items (strong personality, forceful, has leadership abilities, dominant, willing to take a stand, aggressive, acts as a leader) and the masculinity subscale. A third component, Autonomy, includes 4 masculine items (self-reliant, independent, self-sufficient, individualistic) and the masculinity subscale. The factor termed Pleasantness is composed primarily of neutral items in the original scoring procedure (moody - negative loading, happy, likeable, friendly) and two originally feminine

adjectives (cheerful, warm). Four items on the original feminine scale (shy, feminine, sensitive to the needs of others, softspoken), the neutral item "solemn," and the femininity subscale all load on what represents a Women's Social Role. A sixth component loaded by 3 feminine adjectives (flatterable, gullible, childlike), by 1 originally masculine adjective (ambitious) and by 3 neutral items (jealous, conceited, inefficient) is termed Problems in Interpersonal Relations. The seventh of 8 factors is Strength of Character, loaded by 3 originally masculine items (defends own beliefs, assertive, willing to take a stand). The eighth component, or Gender factor, is loaded by biological sex and the items "athletic," "masculine," and "feminine."

The present study employs the first 7 components of the analysis conducted by Walker & Preston (1979), with biological sex being included in the canonical correlation as part of the set of behavioral variables. The multiple dimension scoring system which is used appears to measure 2 feminine characteristics (Nurturance, Women's Social Role), 3 masculine characteristics (Social Ascendancy, Autonomy, Strength of Character), and 2 neutral characteristics (Pleasantness, Problems in Interpersonal Relations). Each of these dimensions is anchored by feminine/non-feminine or masculine/non-masculine characteristics rather than being a bipolar masculine-feminine continuum (Walker & Preston, 1979).

From the bipolar scale of agency and communion introduced

by Bakan (1966), research on sex-typing has progressed to the identification of 8 dimensions along which both males and females may vary. Bem advanced the line of research with extensive study using a two-dimensional scoring procedure of sex-type. Walker & Preston (1979) state that although the original scoring method using both a masculine and a feminine dimension has proven successful in defining some relationships between subject behavior and personality variables, it leaves a large amount of variance unexplained. The present study was aimed toward examining the relationship between the sex-typing of college students and their behaviors in the presence of preschool children, using the new multidimensional scoring procedure for the BSRI as proposed by Walker & Preston (1979).

METHOD

Subjects.

Students enrolled in Introductory Psychology classes were asked to take a sex-role inventory. From the students who consented to fill out the inventory, 71 males and females were contacted by telephone and reported to the Child Development Lab to interact with preschool children. These students indicated having no contact with 2- to 4-year-olds within the past 2 years. A pilot group consisted of 11 subjects randomly selected from the students taking the BSRI, and the experimental group consisted of 60 students. When the subjects reported for the experiment they were informed that the purpose of the study was to examine the interaction between preschool children and adults who are unfamiliar to them. Following the 20 minutes in the Lab, the students were debriefed and were asked not to give other students any indication of what to expect when they report for the experiment.

Materials and Procedure.

The Bem Sex-Role Inventory (Bem, 1974), which appears in Appendix I, provided the measure of sex-type. The scoring system used to obtain the 7 factors is found in Walker & Preston (1979), with the eighth factor being biological sex of the respondent.

The BSRI was administered to students in the Introductory Psychology classes by an experimenter not affiliated with the

present study. Two groups of 4 students and 1 group of 3 students participated, spending 20 minutes in the Lab interacting with preschool children. It was determined upon contacting the students by phone that they, just as the experimental subjects, had not experienced interacting with 2- to 4-year-olds in the past two years. All subjects were asked to wear blue jeans and a t-shirt so that the observers would not be unconsciously biased by their own hypotheses in the rating of behaviors. The results of the pilot study were utilized to determine that there was variability in behavior among the individuals in the Lab situation.

From the classes taking the BSRI, 60 students were randomly selected to participate in the study, were contacted by telephone, and reported to the Child Development Lab in random groups of 3 or 4 students. After informing the subjects that the purpose of the experiment was to observe how preschool children interact with unfamiliar adults, the experimenter brought them into the Lab where between 4 and 6 children were playing and left them in the room.

The Child Development Lab had a variety of toys available, such as a xylophone, crayons and coloring books, balls, a miniature basketball hoop, small tables and chairs, a rifle, a jack-in-the-box, a scooter, a wooden hammer and pegs, a play telephone, etc.

Two experimenters recorded the students' behavior from behind large 1-way mirrors in the observation room. They were

provided with observational category sheets on which to record individual behaviors. Felt tip pens in 4 colors were used to distinguish whether a behavior was male child-oriented, female child-oriented, peer-oriented, or toy-oriented. An audio-sound system enabled rating of vocal behavior. Fifteen-second observation intervals were announced to the raters by a tape recorder in the observation room. According to a randomly predetermined schedule of observation, each rater observed a single subject for 5 minutes, then focused on another subject for the next 5 minutes. For 28 of the 60 subjects the observers recorded behaviors of the same subject simultaneously to enable evaluation of inter-rater reliability. Data was taken utilizing a modified categorical observation system described by Gottfried & Seay (1973), where specified symbols for behavior were recorded as these actions occured within each 15-second time interval. The occurance of a behavior was recorded only once during a single interval. The score for a behavior was the number of 15-second intervals in which the behavior occurred over the 5-minute observation period, 20 being the maximum score for any subject. Each behavior had an observational definition, and both observers had been trained to use the behavioral symbols.

The 4 subjects remained in the Child Development Lab until the experimenter asked the students to step outside of the Lab where they were debriefed.

RESULTS

Descriptive statistics used to interpret the pilot data indicated that there is variability in the behavior of college students placed in the Child Development Lab with preschoolers.

A canonical correlation procedure was used with the scores on the 7 factors of the BSRI and the frequency of behaviors of the subjects in the Lab. The data was analyzed using a program for Canonical Correlation Analysis: Subprogram CANCORR from the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner & Bent, 1970). The 2 sets of variables, the BSRI factors and the observed behaviors, are presented in Table 1 with their means and standard deviations. It is evident that there is variance between individuals on these variables. The summary table of the canonical correlation analysis appears in Table 2. In the first column, 7 canonical variates are listed, which are essentially equivalent to principal components found in a principal-component analysis. The second column presents the eigenvalues, indicating the amount of variance in one canonical variate that is accounted for by the other canonical variate. The canonical correlations in column 3 indicate the relationship between the pair of canonical variates.

In deriving a linear combination of each of the sets, with the objective of maximizing the correlation between the two linear combination, no significant correlations were produced.

TABLE 1. VARIABLE MEANS AND STANDARD DEVIATIONS

VARIABLE	MEAN	STANDARD DEV	CASES
Sex	1.5500	.5017	60
Nurturance	5.4440	.7127	60
Social Ascendancy	4.6663	.9202	60
Autonomy	5.4917	.7335	60
Pleasantness	5.3227	.6110	60
Women's Social Role	4.0767	.6557	60
Interpersonal Rel.	3.9118	.5920	60
Strength of Character	5.1935	.9591	60
Manipulate Toy	6.5833	4.6186	60
Visual Orient - Toy	3.1500	3.4239	60
Solitary Play	4.3500	5.7278	60
Stand	2.6667	3.9645	60
Sit	14.8167	6.7911	60
Proximity - Peer	3.5500	5.2187	60
Visual Orient - Peer	3.4667	2.5276	60
Word - to Female Child	5.4167	4.8127	60
Contact - Female Child	2.6333	3.6867	60
Proximity - " "	8.1167	6.2058	60
Visual Orient - " "	12.4333	5.1794	60
Coop. Play - " "	3.3333	3.9603	60
Word - to Male Child	3.6167	4.3767	60
Contact - " "	3.0333	4.7549	60
Proximity - " "	6.6500	6.4251	60
Visual Orient - " "	8.7000	6.1183	60

TABLE 2. SUMMARY TABLE OF THE CANONICAL CORRELATION ANALYSIS

NUMBER	EIGENVALUE	CANONICAL CORRELATION	DF	SIGNIFICANCE
1	.65175	.80731	119	.055
2	.51778	.71957	96	.519
3	.40285	.63471	75	.885
4	.28875	.53736	56	.981
5	.17484	.41814	39	.994
6	.12629	.35537	24	.987
7	.09967	.31570	11	.934

The subprogram's function to manipulate intercorrelations among variables indicated that there was no particular type of patterning present. Table 3 lists the canonical correlation coefficients for the behavioral variables. Table 4 lists the coefficients for the 7 factors of the BSRI. The magnitude of the coefficient is indicative of the relative contribution of the original variable toward the canonical variate. A patterning fails to become evident as many of the variables contribute only somewhat to all of the canonical variates.

The observational technique permitted recording of as many as 76 behaviors, of which only 16 were used in the canonical correlation analysis. Behaviors such as embrace a male child or a female child and parallel play with a male child, female child or peer were excluded due to a low frequency of occurance (less than 80 total for 60 subjects). The inter-rater reliability was computed for each behavior which occurred often enough for a meaningful estimate, the results of which appear in Table 5. The criterion for a behavior to be included in the analysis was a reliability of .70 or above. Four behaviors -- manipulate self, word spoken to a peer, smile directed toward a male child and smile directed toward a female child -- were eliminated due to unsatisfactory reliability.

TABLE 3. CANONICAL CORRELATION COEFFICIENTS -- BEHAVIORAL VARIABLES

	CANVAR 1	CANVAR 2	CANVAR 3	CANVAR 4	CANVAR 5	CANVAR 6	CANVAR 7
Sex	-.60807	.28990	-.65062	.27344	-.13990	-.28260	-.03985
M Toy	.27218	.15746	.05818	-.42703	-.20249	.20710	-.60106
R Vo	.24358	-.10515	.24367	-.24310	-.39941	-.50091	-.28183
Sp	-.22938	-.20806	.35566	.72166	-.68405	-.01084	-1.05919
St	-.49640	.64508	.39098	-.38307	.02808	.14800	-.01660
Sit	.09730	.53117	-.10466	-.46408	.35836	.42402	-.03004
G Prox	-.46269	-.21360	.13132	.21846	-.74347	-.25982	-.27526
G Vo	.16478	-.24169	-.59238	-.32334	.08854	.48485	.14655
Bk W	.25747	1.00269	-.13608	-.06751	-.17724	-.51588	-.36055
Bk Con	.31545	.20047	-.12326	-.46574	-.23449	.40422	.06261
Bk Prox	-.33224	-.51771	.06845	.95171	.42710	.00244	-.54828
Bk Vo	-.16250	-.77167	.01736	.04046	-.10746	-.12156	-.46425
Bk C	-.04009	-.42857	-.13540	.36654	.06759	-.54363	.68038
B W	-.51587	-1.22324	.25649	-.74616	.71162	-.49299	-.61432
B Con	.30242	.22849	.03409	-.17915	.81635	.08942	.04124
B Prox	.25484	.47007	-.60751	.88728	-1.69223	.52773	-.51620
B Vo	.17061	-.33971	.03041	-.07649	.27572	-.92936	.25188

TABLE 4. CANONICAL CORRELATION COEFFICIENTS -- 7 FACTORS OF THE BSRI

	CANVAR 1	CANVAR 2	CANVAR 3	CANVAR 4	CANVAR 5	CANVAR 6	CANVAR 7
Nurt	-.16726	-.46897	.59575	.01378	.33289	-.68599	.72954
SA	.50910	.05846	-.12177	-.06996	-.52779	-.92655	-1.50557
Auto	.07879	-.44162	-.07734	.93891	.32253	.22829	-.17149
Pleas	.27532	.99052	-.07290	.10277	.59726	.25636	-.08773
Women	.82536	.04442	.22051	.17107	-.99916	.05066	-.52969
Inter	-.36611	.16428	.68448	-.08692	.43147	.62070	-.28887
Char	-.72987	.44175	-.00335	.13386	-.77360	.35757	1.00570

TABLE 5. INTER-RATER RELIABILITIES FOR BEHAVIOR CATEGORIES

CATAGORY	DEFINITION	r
Red	manipulate a toy	.877
Red	manipulate self	.588
Red Vo	visual orient toward a toy	.737
Red Sp	solitary play	.778
	stand	.953
	sit or squat	.842
Green W	word spoken to a peer	.617
Green P	proximity to a peer	.905
Green Vo	visual orient toward a peer	.740
Black W	word spoken to a female child	.929
Black ne	physical contact, touch girl child	.932
Black U	smile or laugh at female child	.591
Black P	proximity to a female child	.946
Black Vo	visual orient toward a female child	.840
Black C	cooperative play with a girl child	.941
Blue W	word spoken to a male child	.872
Blue ne	physical contact, touch male child	.972
Blue U	smile or laugh at a male child	.593
Blue P	proximity to a male child	.951
Blue Vo	visual orient toward a male child	.836
Blue C	cooperative play with a male child	.653

DISCUSSION

From the results of the cannonical correlation, an attempt to maximize the correlation between college students' scores on 7 factors of the BSRI and their observed behaviors in the Lab indicates that there is no particular type of patterning. The fact that there is variance between individuals for the behaviors is evident in Table 1; however, this variance remains unexplained by the set of scores on 7 components of the BSRI. In the present study a canonical correlation analysis was unable to find a significant relationship between these two sets of variables, indicating that either there is no significant relationship or that the random variance must be reduced to increase the probability of detecting a meaningful relationship.

The possibility of no relationship between scores on the items of the BSRI and observed behavior is contrary to a vast amount of research. Using the original scoring method, Bem (1974, 1975, 1976) demonstrated in a series of studies that the adjectives on the BSRI have been successful in defining several relationships between subject responses and behavior in a variety of situations. A recent study by Babl (1979) supports the adequacy of the BSRI in its relationship to behavior. Seventy-two traditional and androgynous males were assigned to either a masculinity threat, masculinity validation or control treatment group. Results indicated that in response to sex-role threat, sex-typed males became anxious and exaggerated both their masculine self-presentations and their levels

of antisocial behavior. Masculine compensation was shown to vary as a function of sex-role, with androgynous males failing to exaggerate their masculinity and failing to increase their antisocial behavior in response to their anxiety regarding sex-role threat. Scores on the items of the BSRI were again demonstrated to relate to the respondent's choice of behaviors. The scoring system introduced by Walker & Preston (1979) is simply a regrouping of the original items on the Bem scale, and therefore should also be related to observable behavior.

There appear to be several ways of reducing the unexplained variance and facilitating the detection of a relationship between scores on the BSRI and behavior in the presence of preschool children. One suggestion is the improvement of the behavioral measure. As Table 5 indicates, 5 behaviors were excluded due to a low inter-rater reliability. The accuracy of observation could be increased by reducing the number of behaviors which deserve attention. The present study demanded observation of and recording the occurance of as many as 76 behaviors in a 15 second time interval. By eliminating behaviors which are not directly related to the present line of research, such as those of activity level and interaction with toys, attention can be directed to more pertinent behaviors. Several behaviors of interest were excluded due to a low frequency of occurance; even these behaviors may become important when attention can be concentrated more directly on them. As shown in Table 5, 3 behaviors met the .70 reliability criterion to

be included, however were still below a reliability of .80. Haynes & Kerns (1979), in their comments on validating a behavior observation system, view .70 as a "rather lenient criterion" and mention that .80 is a "more commonly used criterion." Inter-observer agreement coefficients below .80 indicate that there is a substantial discrepancy between the ratings of the observers and suggest that some of the variance in derived data can be accounted for by observer error (Haynes & Kerns, 1979). Inter-observer reliabilities could perhaps be increased by concentrating on the occurance of fewer behaviors.

An addition to the reliability problem is the issue of observer drift (Haynes & Kerns, 1979). No retraining of the observers to criterion level occurred during the experimentation period, introducing the possibility that accuracy decreased over time. The loss of accuracy may or may not be related to a decrease in inter-rater reliability.

The question can be raised as to whether the free play situation is conducive to evoking behaviors primarily directed toward the 7 factors of sex-typing. Bem's (1976) study of college students' behavior when left alone with a baby was very structured, looking at the limited behavioral options of smiling at the baby, talking to the baby, kissing or nuzzling it, holding it, and stimulating the baby by touch or with a toy. Whereas Bem's study was perhaps overstructured in allowing the subject to become aware of the experimental manipulation, the present experiment was virtually unstructured. The subjects had a multitude of behavioral options available to them, a situation which

may have reduced the occurance of any few behaviors and therefore reduced the meaningfulness of the many behaviors. As a suggestion for future research, the alternatives for behavior should be reduced by adding some experimental control, and at the same time preserve as much of a natural situation as possible.

Although it was determined that there was ample variability between individuals in the occurance of behaviors within the Lab, the meaningfulness of the variance on the 7 factors has not been determined. It is suggested that only limited variability on the BSRI is found in a college population, although no research has been done to support this hypothesis. Gaudreau (1977), in her factor analysis of the BSRI, selected individuals to represent highly masculine males (police officers) and feminine females (non-working housewives). Selection of subjects from a variety of occupations, rather than employing the perhaps homogeneous sample of college students from a liberal arts college, may serve to increase the variability on the 7 factors of the BSRI.

More specific recommendations for the purposes of future research can be offered. A grid in the measurement of square feet should be placed on the floor of the Child Development Lab to facilitate the observers' judgment of distance between individuals in the Lab. Behaviors of proximity and parallel play are defined by the individual being within 1 foot of a child or peer. The grid would possibly reduce hesitancy in judgment, increase accuracy, and therefore improve interobserver agreement. A

second suggestion, mentioned above, is to reduce the number of behaviors being observed. If replication of the present study is to be done, the behaviors listed in Table 6 are recommended to receive attention in behavioral observation.

The objective of the present study was to examine the relationship between college students' scores on the 7 factors of the BSRI and their behaviors when given the opportunity to interact with preschoolers. Although a canonical correlation analysis did not indicate any type of meaningful patterning between the 2 sets of variables, several suggestions for future research of sex-typing have become evident. The unexplained variance may be masking the effect of a relationship, and recommendations for its reduction have therefore been the focal point of the discussion. In summary, the behavioral observation technique requires refinement, perhaps by excluding behaviors unrelated to the study and concentrating on fewer, more pertinent behaviors. The experimental situation deserves consideration, possibly adding structure to the free play experience and limiting the numerous options available to the subjects. The fact that the unexplained variance can be perhaps understood in terms of methodological inefficiencies emphasizes the need for further research in the area of sex-typing.

TABLE 6. BEHAVIORS TO RECEIVE ATTENTION IN FUTURE RESEARCH

SOCIAL		NON-SOCIAL
CHILD-ORIENTED	ADULT-ORIENTED	
W	W	Sp
ne	Vo	⋔
→	→	⊣
U	U	
P	P	
⊠	C	
E		
Vo		
C		

(E=embrace child)

(⋔ =parallel play - child
- adult)

(⊣ =withdraw from - child
adult)

REFERENCES

Babl, J. D. Compensatory masculine responding as a function of sex role. Journal of Consulting and Clinical Psychology, 1979, 47, 252-257.

Bakan, D. The duality of human existence. Chicago: Rand McNally, 1966.

Bem, S. L. The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 1974, 42, 155-162.

Bem, S. L. Sex role adaptability : One consequence of psychological androgyny. Journal of Personality and Social Psychology, 1975, 31, 634-643.

Bem, S. L. On the utility of alternative procedures for assessing psychological androgyny. Journal of Consulting and Clinical Psychology, 1977, 45, 196-205.

Bem, S. L., & Lenney, E. Sex typing and the avoidance of cross-sex behavior. Journal of Personality and Social Psychology, 1976, 33, 48-54.

Bem, S. L., Martyna, W., & Watson, C. Sex typing and androgyny: Further explorations of the expressive domain. Journal of Personality and Social Psychology, 1976, 34, 1016-1023.

Berzins, J. I. Welling, M. A. & Wetter, R. E. A new measure of psychological androgyny based on the personality research form. Journal of Consulting and Clinical Psychology, 1978, 46, 120-138.

Brown, D., & Marks, P. A. Bakan's bi-polar constructs: Agency and communion. The Psychological Record, 1969, 19, 465-478.

Carlson, R. Sex differences in ego functioning: Exploratory studies of agency and communion. Journal of Consulting and Clinical Psychology, 1971, 37, 267-277.

Gaudreau, P. Factor analysis of the Bem Sex-Role Inventory. Journal of Consulting and Clinical Psychology, 1977, 45, 299-302.

Gottfried, N. W., & Seay, B. An observational technique for preschool children. Journal of Genetic Psychology, 1973, 122, 263-268.

Haynes, S. N., & Kerns, R. D. Comments: Validation of a behavioral observation system. Journal of Consulting and Clinical Psychology, 1979, 47, 397-400.

Heilbrun, A. B. Measurement of masculine and feminine sex role identities as independent dimensions. Journal of Consulting and Clinical Psychology, 1976, 44, 183-190.

Kelly, J. A., & Worell, J. New formultaions of sex roles and androgyny: A critical review. Journal of Consulting and Clinical Psychology, 1977, 45, 1101-1115.

Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., Bent, D. H. SPSS Statictical Package for the Social Sciences. Second Edition. New York: McGraw-Hill Book Company, 1970.

Spence, J. T., Helmreich, R., & Stapp, J. Ratings of self and peers on sex role attributes and their relation to self-esteem and conceptions of masculinity and femininity. Journal of Personality and Social Psychology, 1975, 32, 29-39.

Strahan, R. R. Remarks on Bem's measurement of psychological androgyny: Alternative methods and a supplimentary analysis. Journal of Consulting and Clinical Psychology, 1975, 43, 568-571.

Wakefield, J. A., Sasek, J., Friedman, A. F., & Bowden, J. D. Androgyny and other measures of masculinity-femininity. Journal of Consulting and Clinical Psychology, 1976, 44, 766-770.

Walker, W. E. & Preston, J. C. Sextyping of interpersonal behaviors: More than two dimensions in the profile? (Unpublished manuscript, 1979)

Walker, W. E. & Preston, J. C. The Bem Sex Role Inventory: A multidimensional scoring alternative. (Unpublished manuscript, 1979)

Wiggins, J. S. & Holzmuller, A. Psychological androgyny and interpersonal behavior. Journal of Consulting and Clinical Psychology, 1978, 46, 40-52.

VITA

Jan Jones is currently employed by Philip Morris, USA as an Associate Professional Psychologist in the Research and Development Division, designing and conducting behavior research. During the graduate program at University of Richmond, Jan worked with Dr. Robert Filer at Psychological Consultants, Inc., assisted in the Center for Psychological Services, and served as advisor for the undergraduate Study Abroad Program. She was graduate representative to the Psychology faculty, and benefited strongly from the opportunity to co-lead a peer group with Dr. Matthew Jaremko and to do research with Dr. Joanne Preston. In the spring of 1979 Jan received the award of Outstanding Graduate Student in the Psychology Department.

Originally from Dickerson, Maryland, Jan attended Wake Forest University in Winston-Salem, North Carolina. She graduated in 1978 with a B.A. in both English and French, and a strong supporting area in Psychology. As an undergraduate Jan served as a peer counselor, conducted self-concept research at an elementary school, and attended the University of Dijon in France for a semester.

Jan is planning to continue her education with the objective of obtaining a Doctorate of Philosophy Degree in General Experimental Psychology.