

## **Sex-Gender Differences in Level of Androgyny**

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*Three studies are reported that concern the level of androgyny characterizing college males and females over a 20-year span (1958-1978) and whether such males and females differ in androgynous potential when compared directly. Inspection of androgyny scores over the two-decade period indicated that females achieved appreciably higher levels of androgyny in the 1960s, but showed a plateau in androgyny level in the 1970s. Males, in contrast, showed androgynous growth in the 1970s after a decline in the 1960s. Direct comparison between the sexes indicated that males are generally more androgynous than females. This result was obtained whether questionnaire self-descriptions were used as the source of data or whether observer ratings were used following laboratory interaction.*

Interest in androgyny, the potential for masculine and feminine behaviors in the same individual, has led to a substantial number of studies in the few years since Block (1973), C. Heilbrun (1973), and Constantinople (1973) independently proposed the usefulness of this construct. Much of this research has focused upon the behavioral correlates of androgynous status, proceeding on the tacit assumption that the implications of a dual sex-role development would be much the same for males and females. A similar assumption seems apparent in a social consciousness that urges people to remove the constraints imposed by stereotypic sex-role conformity; appeals have been made to both females and males to liberate themselves by expanding their sex-role potential.

As noted in a prior article (A. B. Heilbrun & Pitman, 1979), the correlates of androgyny in the two sexes have displayed considerable disparity. This is evident within studies of the adaptive value of androgyny, for example. Spence,

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Helmreich, and Stapp (1975) found androgynous subjects of both sexes to have the highest self-esteem; Bem (1977) was able to replicate this effect for females, but not for males. A. B. Heilbrun (1976) and Deutsch and Gilbert (1976) also reported different relations between androgyny and adjustment for males and females. The common thread throughout these studies is the greater adaptive value of androgyny for the female relative to the male. A second type of study bearing upon the antecedents of androgyny has also suggested different origins of androgyny for the male and female (Block, 1973; A. B. Heilbrun, 1978; Kelley & Worrell, 1976; Wakefield, Sasek, Friedman, & Bowden, 1976).

It is possible that some of the disparity between these studies of sex-linked correlates of androgyny should be attributed to different definitions of the construct, as suggested by Kelley and Worrell (1977). This criticism does not seem as applicable to differences found between the sexes within a single study if androgyny is defined by the same operations for males and females. Whether the sex differences in the correlates of androgyny are to be understood primarily as having dynamic or methodological origins is not the central issue of the present study.

Since androgyny takes on a somewhat different set of behavioral correlates for males than it does for females, the question remains whether there are not even more basic behavioral differences in androgyny between the sexes that have not been examined. The studies described in this article bear upon such a basic difference: Do males and females generally differ in level of androgyny? Included within the scope of these studies will be whether males and females have shown differing patterns of change in androgyny over the past two decades.

The belief that men in general or women in general maintain a higher potential for androgyny probably will be predicated upon what one assumes regarding the social constraints upon sex-role behaviors. Should it be assumed that masculine behaviors in males are any more or any less selectively reinforced than feminine behaviors in females? Predictions as to which sex will be more androgynous (i.e., show the potential for both cross-sex and stereotyped sex-role behavior) are clouded in that arguments can be made both ways. For example, it has been proposed that the boy goes through successive identifications with his mother and then his father, while the girl tends to maintain a singular identification with her mother (Lynn, 1969; Sears, 1957). This would lead us to expect a more extended sex-role potential for the male. Similarly, Block (1973) suggests that the socialization process has a feminizing effect upon the boy which complements his masculine sex-role development, but socializing influences simply reinforce the feminine development of the girl.

Arguments the other way seem equally cogent. It has been contended (Brown, 1958) that the female child is given greater leeway in crossing over the stereotyped role boundaries in her behavior and grooming (e.g., the "tomboy") than is true for the male child (e.g., the "sissy"). This differential reinforcement

might be expected to leave an eventual masculine residual in females that would not be matched by femininity in males. Sex-role preference studies have shown that the male role is traditionally accorded a higher value in most cultures, including our own (Williamson, 1976). It would follow from this that the motivation to adopt aspects of the male role should be greater in the female than the motivation to adopt female role behaviors in the male. Finally, it has been observed that deviation from prescribed sex-object choice (homosexuality) arouses less concern in the case of the female than such deviation in the male (Thompson & McCandless, 1976). This suggests more powerful constraints upon the male's adherence to his assigned role.

Three different questions regarding androgyny level in males and females will be answered empirically by the three studies to be described within this article.

1. Have the androgyny levels of college males and females shown differing patterns of change over the past 20 years (Study I)?
2. Is there a difference in level of androgyny when samples of male and female college students are directly compared (Study II)?
3. If a sex difference in level of androgyny is demonstrable in Study II, can it be replicated in a college sample using a divergent methodology (Study III)?

## STUDY I

Interest in the levels of androgyny characterizing male and female college students over the last 20 years (1958-1978) stems naturally from the fact that two major social phenomena within this time span could be expected to have had an impact upon the sex-role behaviors of either sex. The social-political protests of the Vietnam war years of the 1960s, in which the American college student played such a central role, could potentially have provided the impetus for growth in androgynous potential for either sex. Opportunities and peer reinforcements for masculine instrumental (goal-oriented) and feminine expressive (relationship-oriented) behaviors were available to male and female alike. To the extent that movement outside the constraints of stereotyped sex roles was condoned, androgyny might be expected to increase.

Consciousness regarding women's rights and liberation from conventional sex-role conformity of the 1970s might also lead us to expect accompanying changes in androgyny level. Add to this the fact that the 1970s included the initial proposal of androgyny as a construct and its popularization as a desirable state of affairs, and there is even more reason to expect the college student to show incremental change during this more recent era.

### *Method*

*Subjects.* A total of 1,128 college undergraduates (450 males and 678 females) was included in Study I. Test records were drawn from the senior investigator's files for most of these subjects, although the final (1978) sample of 105 females and 69 males was collected especially for this series of studies. Prior samples were collected for a variety of studies dating back to 1958 on three campuses — the University of Iowa (1958); University of California, Berkeley (1964); and Emory University (1966-1976). Sample sizes by sex varied from a low of 32 to a high of 131.

*Measure.* The Masculinity and Femininity scales scored from the Adjective Check List (ACL; Gough & Heilbrun, 1965) were used as sex-role measures in this study. These are currently scored as independent scales which include 28 masculine and 25 feminine items (A. B. Heilbrun, 1976). However, initial usage involved their combined scoring on the assumption of a single bipolar dimension of masculinity-femininity (Cosentino & Heilbrun, 1964).

The original Masculinity-Femininity scale was found to be predictive of aggression anxiety differences in males and females (Consentino & Heilbrun, 1964), to distinguish between levels of instrumental behavior in females (A. B. Heilbrun, 1968), and to differentiate between homosexuals and heterosexuals of both sexes (Evans, 1971; Thompson, Schwartz, McCandless, & Edwards, 1973). The items on the scales, along with the remaining behavioral adjectives on the ACL, were scored for sex-role stereotype value based upon ratings of college students by Williams and Best (1977). The items contained within the two ACL sex-role scales were totally consistent with their masculine and feminine stereotype values. It is also noteworthy that the average rated favorability of masculine and feminine items, also reported by Williams and Best, was almost identical.

Kelley, Furman, and Young (1978) have reported the relations between the ACL sex-role scales and three other widely used research instruments that allow for independent scoring of masculinity and femininity — the Personal Attributes Questionnaire (PAQ; Spence et al., 1975), Bem Sex Role Inventory (BSRI; Bem, 1974), and PRF ANDRO (Berzins, Welling, & Wetter, 1978). While the results of this study emphasize the limitations in agreement among the various sex-role instruments, the ACL scales accounted for about the same common variance among them as any of the others.

### *Procedure*

The ACL self-descriptions that served as the basis for sex-role scores in this study were collected within a large number of investigations over the span of 20 years. Despite the differences in procedures among these studies, two procedural constants can be identified. Performance on the ACL always followed the same

set of standard instructions, and these self-reports were obtained prior to the time the subject was exposed to any other task or condition that might temporarily influence self-description.

### *Results and Discussion*

*Scoring.* ACL sex-role scores are based upon the number of masculine and feminine behavioral adjectives that the individual endorses as self-characteristic. These raw scores are entered into college norm tables that have been established separately for masculinity and femininity, as well as by sex of subject. These tables allow raw scores to be converted to T scores with a mean of 50 and a standard deviation of 10. Higher scores indicate stronger masculine or feminine dispositions relative to college peers of the same sex.

Since the interest in this and the remaining two studies to be reported was exclusively directed toward androgyny rather than toward all possible sex-role outcomes, a generalized formula for scoring androgyny as a continuous variable was employed (A. B. Heilbrun & Pitman, 1979). Among other things, this procedure allows us to escape the potentially serious classification errors that accompany the typical practice of assigning subjects to one of four sex-role outcomes made possible by measuring masculinity and femininity as independent dimensions and defining class membership by high-low median split procedures. Assignments to such widely variant sex-role types as androgyny (high-high) and undifferentiation (low-low) may be based upon totally unreliable differences in score patterns, such as scores of 51 and 51 on the ACL scales compared to scores of 50 and 50.

The generalized androgyny score takes into consideration both the magnitude of the two sex-role scores and their balance, the two equally important assumptions of androgyny. The formula is given by

$$(M + F) - |M - F|$$

where M = Masculinity scale score, F = Femininity scale score, the first term gives the combined magnitude to the two scores, and the absolute difference in the second term represents score balance. Higher formula scores indicate greater androgynous potential.

### *Androgyny Profiles for College Males and Females, 1958-1978*

Figure 1 data points represent the mean androgyny scores achieved by males and females on several college campuses between 1958 and 1978. The early data points involve a confounding of time and geographic differences, although the points from 1966 forward are based upon only Emory samples. Thus, it is

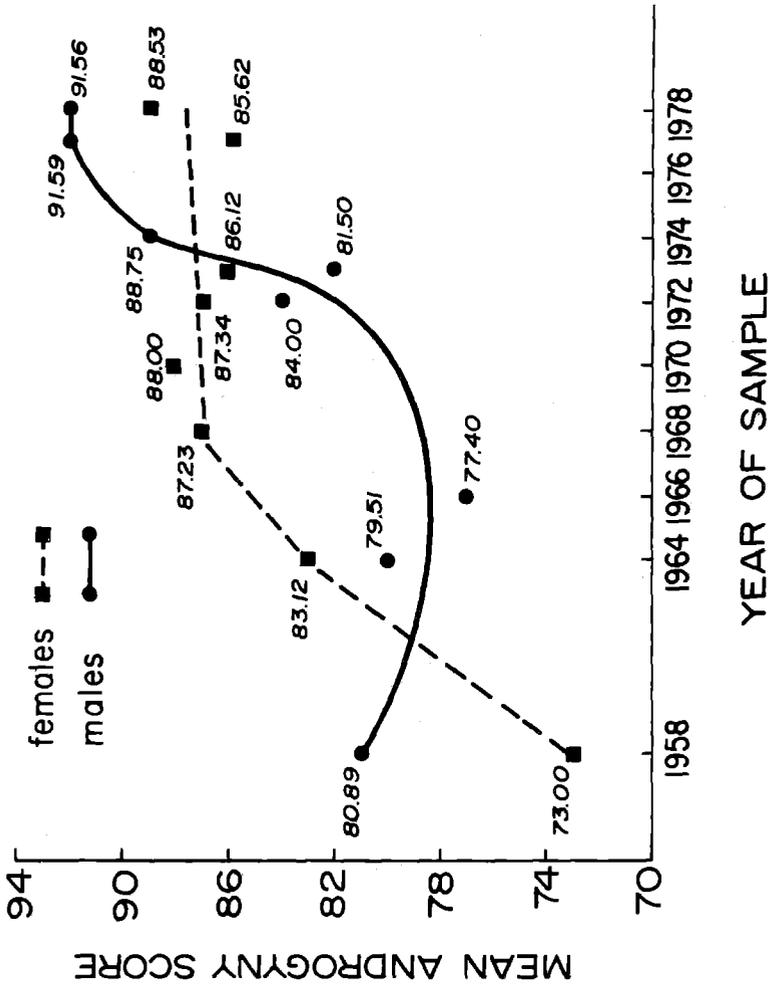


Fig. 1. Mean androgyny scores for male and female college students between 1958 and 1978.

uncertain whether the androgyny points generated by students on state university campuses in 1958 (Iowa) and 1964 (California) are more influenced by the times or by regional differences in sex-role behavior. For what it is worth, we attribute greater significance to the temporal factor.

The "best-fit" line drawn to accommodate the data points for the two sexes suggests two conclusions. First, both sexes have demonstrated a substantial increase in androgyny over the two decades. Second, the patterns of increase are quite distinct for the two sexes. The ogival "curve" for males reflects a decrease in androgyny during the 1960s, followed by a marked increase during the 1970s. In contrast, females demonstrate gains in androgyny during the 1960s, but a plateau within the 1970s.

Psychological interpretation of these empirical findings are speculative and will be kept to a minimum. As noted earlier, the social ferment of the Vietnam war years in the 1960s offered opportunities for both sexes to extend themselves beyond the confinements of masculine instrumental and feminine expressive orientations. It would appear that college females during this period did experience a broadening toward more balanced and extensive sex-role repertoires, but males did not. Another curious feature of these patterns is the fact that females achieved their higher level of androgyny prior to the 1970s, when women's rights became a focal issue and androgyny first achieved prominence as a scientific and social construct. More extended female androgyny preceded the events that one might have predicted would have fostered its development. Just as strangely, male androgyny has demonstrated remarkable increases during the 1970s. While "male liberation" as a social movement might be held responsible, it is difficult to credit it with that much influence. Perhaps the omnipresence of women's role concerns have had an unexpected effect upon the male's adherence to his own role.

## STUDY II

Direct examination of sex differences in androgyny level requires an approach to scoring the Masculinity and Femininity scales distinct from the standard procedures described in Study I. Androgyny scores by that standard procedure are based upon independent norm tables for males and females that compensate for raw score differences in item endorsement between the sexes in the transformation to T scores. For examples, a T score of 50 on the Masculinity scale requires a more extensive endorsement of masculine behaviors for males than it does for females. The opposite is true for feminine behavior endorsement; females must achieve higher Femininity scale raw scores than males to obtain scores of 50. While this standard scoring procedure is satisfactory for most purposes — especially for within-sex comparisons such as reflected by each growth

profile in Figure 1 – it lacks precision for between-sex analysis. The solution for purposes of Study II was to use raw scores on the ACL sex-role scales (i.e., actual number of masculine and feminine behaviors identified as self-characteristic) as the basis for inferring level of androgyny.

### *Method*

*Subjects.* Five samples containing both undergraduate males and females reported in Study I and spread as evenly as possible over the 20-year span were used in Study II. These included the following: (1) University of Iowa, 1958, 44 males and 56 females; (2) University of California, 1964, 94 males and 57 females; (3) Emory University, 1972-1973, 34 males and 79 females; (4) Emory University, 1977, 93 males and 93 females; (5) Emory University, 1978, 69 males and 105 females.

*Measure.* The ACL Masculinity and Femininity scales were used as the basis for inferring androgyny level. Raw scores, rather than converted standard scores, were considered.

*Procedure.* The procedural comments for Study I also apply to Study II.

### *Results and Discussion*

The generalized androgyny formula was applied to the raw ACL sex-role scores for each subject. This application of the formula met the two obvious requirements for its use, as did its application in Study I: (1) The masculinity and femininity scales must offer approximately the same range of scores; (2) the units of each scale must assume the same meaning (e.g., one behavioral item defined as sex-typed).

Table I presents the means and standard deviations for the five samples as well as the results of comparison by *t* tests. The between-sex comparisons suggest unequivocally that college males are more androgynous than their female peers and that this has been the case for at least the last 20 years.

Since the androgyny formula capitalized upon both magnitude and balance of scores for the two sex-role scales, the question remains whether the greater androgyny of males depends more upon one or the other. Table II provides a breakdown of the Masculinity and Femininity scale scores for the five samples; and the means suggest quite clearly that balance is the more important basis for higher male androgyny. If you consider the average combined totals of masculine and feminine behaviors (i.e., sum of the grand means), males endorsed about 21 sex-role attributes and females nearly 20 attributes. Thus, the summative term of the androgyny index could not have made a substantial contribution to the male-female differences.

Table I. Sex Differences in Androgyny Among College Subjects Based upon ACL Sex-Role Scale Raw Scores<sup>a</sup>

Sample	Male subjects		Female subjects		<i>t</i> <sup>b</sup>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
1958	15.27	9.14	8.11	6.22	4.42	< .0001
1964	14.26	8.90	10.46	8.95	2.53	< .05
1972-1973	15.18	9.09	11.34	8.98	2.08	< .05
1977	16.67	9.84	13.29	8.21	2.52	< .05
1978	18.55	7.57	12.11	11.32	4.26	< .0001

<sup>a</sup>The ACL Masculinity scale contains 28 items and the Femininity scale includes 25.

<sup>b</sup>Degrees of freedom for *t* values range between 98 and 184.

On the other hand, the far more even balance of masculine and feminine behaviors for males can be inferred from Table II means. Each sample offers a male ratio approximating 1:1 for mean number of masculine behaviors to mean number of feminine behaviors, while this ratio varies from 1:2 to 1:3 for females. It is true that averages can be deceiving; subject A with a ratio of 10 masculine to 2 feminine behaviors and subject B with the opposite ratio of 2 to 10 present a ratio average of 1:1, suggesting a balance that does not exist. However, the fact that the balance component of the androgyny index was the primary basis for the male superiority in index scores indicates that the balanced averages of masculine and feminine behaviors on each sample are representative of the individuals comprising the samples.

### STUDY III

Despite the near universality of the self-report approach to measuring sex-role behaviors in adolescent and adult subjects, there remains an undercurrent of skepticism regarding questionnaire measures within the scientific community. This is most likely to be voiced by concerns about dissembling or more subtle response sets that are motivated by the wish to avoid being described in unfavorable terms. Whether these concerns are justified is open to debate, but they merit consideration before we accept the conclusion of Study II that males are more androgynous than females. Otherwise, the alternative conclusion that differences in self-report styles between the sexes account for the androgyny findings cannot be discounted. For example, college males might find it more socially desirable to endorse feminine items reflecting an expressive orientation toward personal relationships than college females find it desirable to endorse masculine instrumental items reflecting purposiveness in getting the job done and attaining goals.

Table II. Number of Masculine and Feminine Behaviors Endorsed as Self-Characteristic by College Subjects

Sample	Male subjects						Female subjects					
	Masculine			Feminine			Masculine			Feminine		
	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>
1958	1-22	9.73	5.62	1-22	10.82	5.25	0-13	4.27	3.40	2-23	12.70	5.48
1964	0-24	8.87	5.62	0-22	10.40	5.23	0-24	5.77	5.26	2-24	13.61	4.39
1972-1973	0-23	9.74	5.36	1-22	11.34	4.86	0-20	5.74	4.85	3-24	13.98	4.82
1977	0-24	9.97	5.77	0-20	11.95	4.63	0-22	5.71	5.88	5-24	14.58	4.93
1978	0-21	10.41	4.44	4-24	12.20	4.31	0-23	7.19	4.87	3-23	15.04	4.46
Grand <i>M</i>		9.69			11.36			5.92			13.97	

The study sought to compare the androgyny level of the two sexes using a different approach to measurement. Rather than self-reports of sex-role behavior, observer ratings obtained from interacting laboratory partners were used as the basis for inferring androgyny.

### *Method*

*Subjects.* Nineteen male and 31 female volunteers were obtained from the undergraduate subject pool at Emory University over a 9-month period during 1978-1979.

*Measure.* Two 6-point rating scales representing degrees of instrumental and expressive behaviors were employed as measures of masculinity and femininity. Instrumental and expressive orientations, proposed by Parsons and Bales (1955) as central to the masculine and feminine sex roles, served as the basis for test construction of both the popular BSRI (Bem, 1974) and PAQ (Spence et al., 1975) measures of sex-role behavior. Analysis of items on the ACL Masculinity and Femininity scales also portrayed the centrality of instrumental qualities among masculine items and expressive qualities among feminine items (A. B. Heilbrun, 1973).

The 6-point rating scales ranged from a low of 1 (quite uncharacteristic) to a high of 6 (quite characteristic), and definitions of instrumental and expressive orientations were presented in combination with the two scales. Instrumentalness of the partner was defined for the subject as a concern with achieving goals rather than with the personal quality of our relationship, and inattentiveness to any emotions that might be directed his or her way, and especially a tolerance for hostility. Expressiveness, in turn, was defined as a concern with the relationship between us and the attitudes and feelings that we express toward each other, a tendency to cautiously avoid unpleasantness in our relationship and – by being likable and understanding – to seek positive responses from you.

*Procedure.* Following administration of the ACL in small groups, subjects were brought to the laboratory in pairs (13 female-female, 7 male-male, 5 male-female) within a period of 1-2 weeks. At that time they were informed of their involvement in a contest. Each pair in the contest would be asked to discuss three current social issues among themselves, and for each issue to reach agreement on the most effective resolution. Five minutes were allowed for discussion and agreement on each issue. These issues included whether there should be (1) distinct sex roles for males and females, (2) decriminalization of marihuana, and (3) moral acceptance of premarital intercourse between consenting adults. When the time for mutual decision had been reached in each case, the experimenter reentered the room and asked the subjects to place a check on a scale offering a range of alternatives. They were informed that the pair whose decisions most closely approximated a panel of psychologists would receive a prize of \$25.00.

The current issues discussion and decision making represented a diverting task. The real intent of the laboratory procedure was to offer subjects the opportunity for interaction with one another so that each could observe the behavior and experience the impact of the other. The diverting task was intended to encourage both instrumental qualities (i.e., getting the decisions made so that the contest could most likely be won) and expressive qualities (i.e., considering the feelings and opinions of the other person within the cooperative relationship). It might be argued that the instructions, which focus upon competition with other students, would facilitate instrumental behaviors and that expressive behaviors would appear only as a by product. The average ratings for the 50 subjects do not support this possibility. The mean instrumental level (3.86) was actually less than the mean level of expressiveness (4.86). Most subjects did demonstrate expressive concern for their partners or, at least, were viewed as doing so. When the 15-minute contest period was over, each subject was given written instructions regarding the instrumental and expressive ratings on the partner and allowed to complete the ratings in private. No explanation was given for this phase of the study so as not to divulge the actual intent of the laboratory conditions.

### *Results and Discussion*

Androgyny scores based upon the observer ratings of instrumental and expressive behaviors were assigned to each subject using the generalized formula. Mean androgyny scores for males and females (see Table III) were compared by *t* test with the same results as in Study II. Males behaved in a significantly more androgynous fashion than females ( $t(48) = 2.94, p < .01$ ) as judged by peers with whom they interacted in a laboratory task.

The limited number of male-female pairs in this study ( $n = 5$ ) discouraged formal analysis of the same sex/opposite sex of the partner as a contributor to androgynous behavior. Inspection of the mean androgyny scores of females rated by females (5.54,  $n = 26$ ) and by males (8.40,  $n = 5$ ) along with the means of males rated by males (8.14,  $n = 14$ ) and by females (9.60,  $n = 5$ ) does suggest that the sex difference is maintained whether the interacting persons are of the

**Table III.** Sex Difference in Androgyny Among College Subjects Based upon Observer Ratings Following 15-Minute Laboratory Interaction

Sex	<i>N</i>	<i>M</i>	<i>SD</i>
Male subjects	19	8.53	2.73
Female	31	6.00	3.01

same or opposite sex. Whether the higher androgyny scores for both males and females in cross-sex pairs is reliable deserves further investigation.

## CONCLUSIONS

The cumulative findings of the three studies reported provide an empirical context for interpreting past research and planning further research into androgyny that to our knowledge was previously missing in the literature. It seems important, for example, that researchers and the consumers of research be aware of evidence regarding temporal changes and sex differences in androgynous potential among young adults so that the adaptive value of androgyny can be more fully understood. One of the more consistent findings reported thus far is that androgyny in females is associated with more favorable adjustment (Bem, 1977; Deutsch & Gilbert, 1976; A. B. Heilbrun, 1976; Spence et al., 1975). Yet all these studies, except for Spence et al., have failed to replicate this finding for males; typically, a masculine sex-role outcome in males is associated with more effective functioning, with androgyny having secondary value. Given that males are generally the more androgynous sex, this could be interpreted in two ways. First, males defined as masculine in these studies were more androgynous than their classification would lead one to expect. This would imply that the male findings in adjustment and self-esteem studies are more similar to the female findings than it appears; the most favorable group could be described as androgynous for both sexes. Second, many males identified as androgynous in these adjustment studies may include too great a feminine component in their sex-role repertory because of the generally more androgynous nature of males. This interpretation would suggest that androgyny could have detrimental adaptive consequences for some men because of the excessive femininity implied.

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