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ABSTRACT: Studies using unipolar models of sex role identity in conjunction with an attributional approach to female achievement prediction have found that androgynous women tend to consider ability to be a more feasible explanation for success than do either feminine or undifferentiated women. Androgynous, masculine, feminine and undifferentiated males and females (N=73) attributed reasons for female success to three types of cues: male-dominated, female-dominated, and exclusively female achievement areas. For external attributions, there were no differences among males, but feminine females were more likely than androgynous or masculine females to externally attribute female success. For internal attributions, feminine females were less likely than feminine males to use internal attributions across cues, while undifferentiated females were more likely than undifferentiated males to internally attribute across cues. Androgynous and masculine men and women reacted exactly opposite to each success activity. Results suggest that sex, sex role identity and situational variations occur in the prediction of female achievement behaviors. (Author/NR5)
Androgynous and Undifferentiated Differences in Attributions of Female Success

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In previous fear of success related research by the present authors it was argued that a situation by person perspective was preferred in predicting female achievement behaviors (Gackenbach, Heretick, & Alexander, 1979). Although situational variables have repeatedly been demonstrated to predict differences in female achievement behavior (Depner & O'Leary, 1976; O'Leary & Hammack, 1975) attempts at identifying appropriate internal dispositions have been either unsuccessful (Jacobsen, 1979) or confusing (Alper, 1974). In their search for internal dispositions in understanding of the female achievement motive, especially fear of success, researchers are beginning to turn to recently developed unipolar models of sex role identity (Bem, 1974; Spence, Helmreich & Stapp, 1975). For instance, Major (1979) found that androgynous women evidenced less fear of success than masculine or feminine women with the sex reversed women exhibiting the highest fear of success. However, Olds (1979) found that masculinity correlated negatively with fear of success while feminine and undifferentiated subjects associated feelings of self doubt and insecurity with achievement. Stevens-Long, Cobb and Tate (1979) positively related need for achievement to both androgyny and masculinity.

Brewer and Blum (1979) have used these recently developed unipolar models of sex role identity in conjunction with an attributional approach to female achievement prediction. They found that androgynous women have rejected the traditional stereotype of female failure in nontraditional occupations and therefore avoid failure oriented self perceptions. The present authors have also combined androgyny and causal attribution in an effort to understand achievement behavior in women. They found that only with regards to the internal attribution of ability
was there a sex role identity difference. That is, similar to Brewer and Blum, androgynous women tended to consider ability to be a more feasible explanation for success than did either feminine or undifferentiated women.

The present study fills in some of the gaps of Brewer and Blum's and Gackenbach et al.'s work by replicating and extending the latter study. The reasons for this are as follows, Brewer and Blum failed to take into consideration the undifferentiated sex role identity group (i.e., low in both masculinity and femininity) postulated by Spence, Helmreich and Stapp (1975) as theoretically important in any unipolar model of sex-role identity. This distinction between androgynous and undifferentiated individuals is the most often used model in the androgyny literature (Lenney, 1979; Spence & Helmreich, 1979). Although Gackenbach, Heretick, and Alexander (1979) did include the undifferentiated sex role identity group they omitted the equally theoretically important masculine women group due to the difficulty in filling this cell (i.e., 10% incidence in the population). Consequently, in the present study males and females of all four sex role identities (i.e., androgynous, masculine, feminine, and undifferentiated) were asked to write stories about three types of female success and to attribute the reasons for these women's success.

Several hundred men and women were pretested in a mass testing on the Bem Sex Role Inventory (BSRI; Bem, 1974), which presents a list of 60 positively valued personality characteristics; 20 are traditionally masculine, 20 are traditionally feminine, and 20 are neutral. A 7-point Likert-type scale (1=never or almost never true to 7 = always or almost always true) is provided for rating the degree to which each item is characteristic of the respondent. Spence, Helmreich, and Stapp's (1975) absolute method of classifying subjects was utilized here. Participants in the second phase of the study included six androgynous males and 15 androgynous females, six masculine males and 10 similarly defined females, six feminine males and 11 feminine females and five undifferentiated males and 14
similarly defined females.

A booklet was compiled which was similar to that of the one used by Gackenbach, Heretick and Alexander (1979) and contained three verbal cues similar to those used by Horner (1972). The cues selected for the present study were identical, except that the name of the character and the context of success were varied:

Anne/Mary/Betty, a young married woman, has just found herself at the top of her medical school/teachers college/cooking class.

The three settings (medical, education, and domestic) were selected for manipulation of the sex role appropriateness of the situation, a male-dominated achievement situation, a female-dominated achievement situation, and an exclusively female achievement situation were represented. Feather and Simon (1975) have used the first two cues in earlier research and Gackenbach et al. used all three types of cues, however, their domestic cue was a knitting class rather than a cooking class. The knitting class cue was changed because it was felt that cooking lessons would be taken more seriously by the subjects than knitting lessons had been. The description of each character as married was included to increase the saliency of sex role demands of each cue. Success in a medical school class, teachers college, and cooking class, in that order, are increasingly more compatible with stereotypes of married women as being domestic, nurturant, and dependent on others (Spence, 1974).

Each cue in the booklet was followed by a series of questionnaire items. Spence (1974) has demonstrated that objective measures can be as successful as projective methods in eliciting the same kinds of information from respondents when the projective technique is used prior to the objective technique. Consequently, subjects in the present study were asked to write a story about each cue before answering the questionnaire about the story they had written. However, unlike in Gackenbach et al.'s previous study only questions regarding the causes of success were used in the present study.
The questionnaire presented six possible causes for the success described in the cue: ability, hard work, luck, ease of the course, cheating, and examiner's error. An 8-step scale with polar labels of "not important as a cause" and "very important as a cause" was provided for response to each of these six items.

The causes of success were clustered into two groups; internal (ability, hard work, and not cheating) and external (luck, ease of the course and examiner's error). Separate 2(sex of subject) X 4(sex role identity) X 3 (sex role appropriateness of cue activity) analyses of variance were calculated for internal and external causes of success. Two main effects (sex role appropriateness of cue and sex role identity) and two two-way interactions (sex X sex role identity and sex role identity X sex role appropriateness of cue) reached significance for the ANOVA on external attributions of success. Only those findings which directly deal with sex role identity will be presented here. Regarding the sex role identity main effect, feminine individuals were more likely to externally attribute female success than individuals of the other sex role identities (F(3,576) = 16.56, p < .01). This finding seems to be primarily accounted for by females as can be seen in the sex X sex role identity interaction (F(3,576) = 12.13, p < .01). Males of all four sex role identities evidenced no difference in the extent to which they externally attributed the causes for female success while feminine females were significantly more likely to externally attribute female success than either androgynous (q = 5.36, p < .01) or masculine (q = 6.51, p < .01) women.

Sex role identity was also found to significantly interact with the role appropriateness of the cues activity (F(6,1152) = 17.66, p < .01). Although feminine individuals were the most likely to externally attribute female success there was no difference across cues. The strongest difference was evidenced by individuals whose sex role identities were high in masculinity (androgynous and masculine). They were both more likely to externally attribute success to the cues engaged in sex role
appropriate activities (teachers college and cooking class) than to the cue engaged in nontraditional activity with no difference between the former two. A different pattern emerged for the undifferentiated individuals. Although they were less likely than feminine subjects to externally attribute female success in the medical and teachers college settings there was no difference between them and feminine individuals in the cooking class setting. Sex role identity seems then to be an important variable in accounting for external (i.e., luck, ease of course and examiners error) attributions of female success. Consistent with Brewer and Blum's (1979) findings, this seems to be a response style for feminine individuals.

Everything but the main effect for sex of subject was significant for the 2 X 4 X 3 ANOVA on internal attributions of female success. Again, only those results which include sex role identity will be included here. Undifferentiated individuals and feminine individuals were less likely overall to attribute female success to internal causes than androgynous and masculine individuals ($F(3,576) = 16.47, p \leq .01$). The reason for this main effect can also be seen in the sex X sex role identity interaction ($F(3,576) = 32.56, p \leq .01$). Females accounted for the feminine individuals low internal attributions while males accounted for the undifferentiated subjects low internal attributions.

Sex role identity significantly interacted with the sex role appropriateness of the cue figures activity ($F(6,1152) = 18.65, p \leq .01$). Undifferentiated individuals responded in a different manner than feminine, masculine and androgynous people who responded basically the same with the latter being more likely, as noted earlier, to attribute all types of females success to internal reasons. Whereas the three groups just noted were more likely to attribute internal reasons for success to the medical school student than to the teachers college student, undifferentiated people did just the opposite. That is, they attributed internal reasons for success more so to the teachers college student than to the medical school student. When comparing the teacher's college student to the cooking class student a slightly different
pattern emerged. Undifferentiated people again did the opposite of masculine, androgynous and feminine individuals but masculine and androgynous subjects showed no difference in their internal attributions to the teachers college and cooking class students. Consistent with their self perception feminine subjects internally attributed success more so to the cooking student while undifferentiated individuals were more likely to attribute internal causes for success to the teachers college student than to the cooking class student.

Finally, the three-way interaction (sex of subject X sex role identity X sex role appropriateness of cues activity) was also significant \( (F(6,1152) = 30.96, p < .01) \). As can be seen in Figure 1 feminine and undifferentiated individuals behaved relatively consistently across success activity while masculine and androgynous individuals did not. That is, feminine females were less likely to use internal attributions across cues than feminine males while undifferentiated females were more likely to internally attribute across cues than undifferentiated males. The picture is more complex for those individuals who are high in masculinity. Masculine and androgynous men and women did the exact opposite for each success activity. Regarding the cooking student, androgynous men were more likely to attribute her success to internal causes than androgynous women whereas the opposite was the case for masculine individuals. Masculine women internally attributed success more so than masculine women. There was no difference in the internal attribution of success among androgynous subjects for the teachers college student whereas masculine men were more likely to internally attribute her success than masculine women. Again a flip flop occurred between these two sex role identity groups regarding the reasons for the success of the medical school student. That is, androgynous females were more likely to internally attribute success to this cue than androgynous males whereas there was no sex difference among masculine individuals in such
Figure 1: Internal attribution scores as a function of sex of subject, sex role identity, and sex role appropriateness of cue's activity.
attributions.

As with the external attributions sex role identity appears to play a meaningful role in the prediction of the causes of female achievement and might profitably be used in further research on female achievement. Additionally, it is also apparent from this study that sex, sex role identity and situational variations occur in the prediction of female achievement behaviors.
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