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AN INVESTIGATION OF PSYCHOLOGICAL ANDROGYNY:
ACHIEVEMENT, MOTIVATION, AND VOCATIONAL INTERESTS IN
COLLEGE WOMEN

The University of Nebraska - Lincoln

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PREVIEW

AN INVESTIGATION OF PSYCHOLOGICAL
ANDROGYNY: ACHIEVEMENT, MOTIVATION, AND
VOCATIONAL INTERESTS IN COLLEGE WOMEN

by

Jay Steinbrunn

A DISSERTATION

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Major: Educational Psychology and Measurements

Under the Supervision of Professor Vernon G. Williams

Lincoln, Nebraska

May, 1980

TITLE

An Investigation of Androgyny: Achievement, Motivation, and Vocational Interests in College Women

BY

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PREVIEW

Is there really only . . .

Sugar and spice, and everything nice
and

Snakes and snails, and puppydog tails?

Chapter 1 - Introduction and Literature Review

The dichotomy of sex is probably about the most fascinating concept that humans learn and yet continue to puzzle about. Interest in sexual differentiation comes early both in the development of individuals and in the evolution of cultures. There is some evidence that very young children (30 months) first make the size-age social differentiation, then proceed to the distinction of gender (Kohlberg, 1966, p. 111). In Western culture the issue of this dichotomy was first manifested in the Genesis story and Plato's Symposium. In both of these literary accounts of the bifurcation of the sexes, there was a single humankind that the god(s) then separated into contrasting opposites (model #1 of Appendix A). Characteristically, in the Eastern culture, the principle of the two sexes may be symbolized by the yin-yang sign, wherein the two together make up a whole and each has within itself some aspects of the other. This Eastern conception is thus more akin to the latest psychological understanding of the sexes than is the Western notion of diametric opposites.

The notion of opposites has held sway both in the popular and scientific cultures of the West, and about the only refinement of the twentieth century was to conceive of the two sexes as being on the polar ends of a continuum, where

homosexuals occupied the center of the continuum, and less rigidly sex-typed individuals were scattered somewhere in between (model #3 of Appendix A). In the late 1960's the concept of the androgynous individual was added to the middle set of classifications. The androgynous person was neither rigidly male nor female (model #4 of Appendix A) but one who could manifest behavioral characteristics of either sex, depending upon the demands or expectations of the situation, rather than upon a fixed internalized sex-role stereotype. Until the 1970's all the major personality inventories and measuring scales utilized the masculinity-femininity (M-F) bipolar unidimensional concept with this psychological variable represented by a single scale score.

The Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway & McKinley, 1943) is presently the major clinical instrument for measuring personality variables (albeit, of a psychopathological nature) and the MMPI's unidimensional M-F scale must be regarded as epitomizing the inherent problems of the bipolar M-F construct, as well as showing the misuse and distortion to which it is heir. The MMPI's M-F scale follows the model #3 shown in Appendix A, which is that if one is not a virile man, one's (homo-) sexuality is suspect. Actually this M-F scale was constructed with just this specific intent of being able to differentiate homo- from heterosexual males. This scale's simplistic

conception of masculinity and femininity is also manifested in the scoring procedure for females, whereby the female score is reported on a scale numbered in a reverse direction from that of males. Now it seems ironically just that this scale has poor differentiation power, that clinically significant elevations ($T > 60$) usually are a product of education and culture in males, rather than homosexuality, and that the scale has little to no significant diagnostic power for females (Graham, Schroeder, & Lilly, 1971). Some of these considerations have apparently contributed to the recommendation of Wright and L'Abate (1970) that this scale be revised. Further irony derives from the fact that despite this scale's explicit design of masculinity-femininity as being a reversible bipolar unidimensional construct, a factor-analytic study by Graham et al. (1971) found seven factors for this M-F scale. The masculine and feminine interest factors were not found to be opposite ends of a single bipolar continuum, but were separate categories or factors. Since a major point of the theory of psychological androgyny is that masculinity and femininity are independent orthogonal constructs, this factor analytic study provides some substantial support for the development of the theory.

David Bakan (1966) made a signal contribution to the literature of sex roles in several respects, and the debt has been acknowledged through many bibliographic citations since then. He made the point that we must ". . . distin-

guish between an abstract set of male and female 'principles' and the assignment of individuals to the male or female category" (Bakan, 1966, p. 108). This was a rather important concept to introduce, for most of the scales that had been constructed up until that time had used as the criterion for item selection the ability of an item to differentiate gender identity, rather than masculine or feminine traits as such. This is a crucial distinction that paved the way for Sandra Bem later to construct her scale by selecting items ". . . on the basis of judges' ratings of the culturally defined desirability of various attributes for each of the two sexes" (Bem, 1979, p. 3). Bakan's second major contribution was to formulate the conceptions of "agency" and "communion" and use these constructs to describe aspects of the traditional sex roles, thereby avoiding some of the bias inherent in the use of the terms "masculine" and "feminine." "Agency" is approximately the masculine principle and is an instrumental orientation that is concerned primarily with accomplishing a task, being productive in completing goals, and generally working with things rather than people. Bakan terms the female principle as "communion" and defines this as an orientation towards people, emotional expression, and empathic concern and involvement in the welfare of others. Bakan also used the term "androgynicity" and wrote of his concern that "agency" be

mitigated with "communion," but it remained for Sandra Bem to define "androgyny" in the manner in which it is currently being used.

Heilbrun's (1968) study of females was a harbinger of the sex-role studies of the 1970's. In this study he applied the instrumental-expressive dichotomy to different sex-role orientations of females and found that "masculine girls tended to be both goal-oriented (instrumental) and socially sensitive (expressive), whereas feminine girls tended to be socially sensitive but to lack a goal orientation" (Heilbrun, 1968). While he did not use the term "androgynous" in this article, he did make the distinctions of adjusted masculine females, disturbed masculine females, and feminine females, and the term "androgynous" could be applied to the first of these three categories.

The period circa 1968-1973 witnessed the emergence of the women's liberation movement accompanied by a voluminous lay-oriented literature that was descriptive, prescriptive, critical, and rhetorical, but not data-based in the vein of professional psychology. Apparently there was a slight cultural lag as scientific psychologists formulated their research hypotheses, implemented the research, and eventually published their results. This process was abetted by the 1973 literature review of Anne Constantinople who surveyed the major personality tests measuring masculinity-femininity

(M-F) and judged them to be largely inadequate because of their inherent but unproven assumptions. Constantinople particularly criticized the major personality tests for their assumption that the M-F construct is unidimensional, their assumption that M-F is a bipolar dimension rather than two orthogonal dimensions, and the use of gender differences in response to test items as the sole criterion of an M-F indicator. Essentially, Constantinople had propounded a reconceptualization of sex-roles in writing of masculinity and femininity as independent orthogonal dimensions, and this reconceptualization was sufficiently different to be equivalent to a paradigm shift in the sense of Kuhn's (1970) use of the term. The meaning of this paradigm shift is that while the basic raw data remain the same, the manner in which these data are reordered is so significantly different as to constitute a completely new way of viewing the data, and these new constructs in turn stimulate new research and additional data.

Constantinople's review prepared the way for Sandra L. Bem's (1974) research article on "The Measurement of Psychological Androgyny," which satisfied the three methodological objections of Constantinople to previous research in this area. In this article Bem presented her Bem Sex Role Inventory (BSRI) which was designed to measure components of both masculinity and femininity in an independent fashion,

and which then used the t-ratio between the masculine and feminine scores as an androgyny score. The BSRI consists of 60 items, 20 of which were selected for the masculine scale, 20 for the feminine scale, and 20 were (sex-role) neutral items for a social desirability scale. These items were selected from a larger item pool by 40 Stanford undergraduate judges who were instructed to rate each item on a 7-point Likert scale according to the partial statement, "In American society, how desirable is it for a man (woman) to be _____." A personality characteristic was then selected if it was judged by both males and females to be significantly ($p < .05$) more desirable for one sex than for the other. This procedure met the objection of Constantino (1973) to previous methods for item selection. The social desirability scale was utilized only in the early research efforts to establish that responding to the masculine and feminine scales was not a product of a social desirability response set. Bem (1974) reported nonsignificant correlations with the social desirability scale in her first major study, and then ignored this issue in her subsequent research.

The BSRI asked subjects to respond to each item on a Likert scale, ranging from 1 ("Never or almost never true"), to 7 ("Always or almost always true"). The average for the masculine items then became the masculinity score, as, too, the average for the feminine items became the femininity score,

and the androgyny score was defined as the student's t-ratio for the difference between the subjects' masculine and feminine scores. (Refer to model #5 in the Appendix.) This then allowed for classifying the subjects as feminine sex-typed, near-feminine, androgynous, near-masculine, and masculine sex-typed (Bem & Watson, 1976). One interesting problem with this t-ratio reporting scheme is that the androgyny (t-ratio) score becomes a bipolar continuum ranging from sex-typed masculine through androgyny to sex-typed feminine. Sines and Russell (1978) made the point that this was essentially a bipolar scale, although they utilized the dubious statistical procedure of scoring the 7-point Likert type masculine and feminine scales of the BSRI in a bipolar manner to support this. A bipolar conception of masculinity-femininity, of course, is exactly what Constantinople and Bem wanted to avoid.

Later Bem used this t-ratio classification scheme in a series of correlational and experimental studies to establish that

. . . androgynous subjects of both sexes display "masculine" independence when under pressure to conform and "feminine" playfulness when given the opportunity to interact with a tiny kitten. In contrast, all of the nonandrogynous subjects were found to display behavioral deficits of one sort or another, with the feminine females showing perhaps the greatest deficit of all (Bem, 1975, p. 634).

Bem established the behavioral flexibility of androgynous

subjects through an experiment requiring subjects to perform opposite sex-typed tasks. Androgynous subjects selected a wider repertoire of tasks and reported less psychological discomfort and negative feelings about themselves than sex-typed subjects when the subjects were asked to perform cross sex-typed tasks (Bem & Lenney, 1976). Another set of experiments replicated the findings of the low nurturance of the masculine male, and established that the previous finding of low nurturance of the feminine female when interacting with kittens does not extend to her interaction with human babies (Bem, Martyna, & Watson, 1976).

Significant conceptual progress had been made by Bem through the creation of a sex-role inventory that measured masculinity and femininity independent of one another and reported separate scores for each. However, the use of a t-ratio as a measure of androgyny was an unwitting regression back to the construct of masculinity and femininity as opposite ends of a bipolar continuum. For the androgyny scale is a continuum that simply runs from extreme masculinity through androgyny into sex-typed femininity.

This conceptual difficulty was encountered by Spence, Helmreich, and Stapp (1975) when they administered a battery of paper-and-pencil tests to a large number of college subjects. It was discovered that the use of a t-ratio as suggested by Bem obscured the findings. What became the basis for their analysis was to make a median split on both the

male-valued and female-valued scales within the total weighted subject population of males and females. This median split became the basis for creating four groups: Low masculine and low feminine subjects (LL); high masculine and low feminine subjects (HL); low masculine and high feminine subjects (LH); and subjects who were both high masculine and high feminine (HH) in their endorsement of the respective scales. This classification scheme was a considerable methodological improvement, for subjects who may have been defined as androgynous through use of a t-ratio could now be parceled into the separate categories of HH (androgynous) and LL (undifferentiated). When this was done, it was easy to demonstrate a highly significant difference ($p < .001$) in self-esteem ratings for each sex by HH vs. LL sex-role orientation. Spence et al. (1975) analyzed all their data on the basis of this four-fold classification scheme and continued to find significant differences between the HH and LL groups. The HH or androgynous subjects came to define an ideal or desirable state, while the LL or undifferentiated subjects came to assume an undesirable or problematic status.

An interesting study done by Kelly, Caudill, Hathorn, and O'Brien (1977) also used this four-way classification scheme, but investigated the endorsement of undesirable adjectives (the BSRI is composed of desirable and some neutral adjectives). These findings corroborated the Spence

et al. findings in that LL subjects endorsed the largest number of these undesirable characteristics, and this was interpreted as further evidence that LL subjects suffered from a major deficit in self-esteem, were possibly psychopathological, or at least had deficits in the range of behaviors available to them.

Bem (1977) responded to the foregoing research and criticism by reanalyzing her earlier data on the basis of a median split procedure and found significant differences in the independence of LL subjects and their responsiveness to kittens and human babies. Accordingly, she concurred with Spence et al. (1975) in recommending that the term "androgynous" be reserved for those subjects who were high in both masculinity and femininity, and that the LL subjects are a separate group for which "undifferentiated" would be a more appropriate label.

As mentioned, Graham et al. (1971) had performed a factor analysis on the MMPI, but apparently their publication (in the Journal of Clinical Psychology) was overlooked, for few later investigators cited this work. The significant and pertinent finding was that the MMPI's M-F scale was both multidimensional (seven factors) and that the masculine and feminine interests were "not opposite tendencies on a single (bipolar) continuum" (Graham et al., 1971, p. 368). Further evidence for the independence of the masculine and feminine scales of other tests was presented by Berzins, Welling, and

Wetter (1978), who established that the masculine and feminine subscales of the Personality Research Form are independent and substantially related to the M and F scales of the BSRI. Heilbrun (1976) reanalyzed his accumulated data for the Adjective Checklist (ACL) and found that the M and F dimensions were independent and that his HH subjects were better adjusted than their peers with other sex role identities. Baucom (1976) reworked the California Psychological Inventory (CPI) to yield separate scales providing independent assessments of masculinity and femininity.

All of the foregoing reports offer evidence for the independence of masculinity and femininity dimensions, and this new classification scheme may be represented by model #6 in the Appendix. This new topology affords the ability to make finer distinctions and more precise predictions than model #5. It now appears that the HH subjects (high masculine and high feminine) of either sex are androgynous in that they are more flexible in suiting their action to the situation, have a wider behavioral repertoire, and are better adjusted than sex-typed individuals. Similarly, the HL males and the LH females appear to be traditionally sex-typed individuals. Further, LL subjects are rather limited in available behaviors, low in self-esteem, more likely to describe themselves in unfavorable terms, and appropriately designated as the undifferentiated group. The LH males and HL females may be

referred to as cross sex-typed, but as yet their personological characteristics have not been extensively studied. There is some evidence that such cross sex-typing is associated with intellectual achievement in women (Maccoby, 1974).

The above classifications may now be given more depth through citing some additional sex-role correlates. Dorothy Nevill (1977) found a strong positive relationship between androgyny and psychological health. Harford, Willis, and Deabler (1967) did not have the classification model #6 of Appendix A available to them at the time of their study, but they were able to establish an association between masculinity in males and aloofness, unpretentiousness, and a tough poise, as well as guilt proneness, anxiety, and neurotic tendencies. Their results compare remarkably well with Mussen's (1962) finding that the personality of the masculine male appeared to facilitate social adjustment in adolescence, but was an impediment in later adulthood on the basis of the same dimensions cited by Harford et al. (1967).

Angrist, Mickelson, and Penna (1977) found that men who adhere to a traditional sex-typing are more sexist than either their peers or women; and Woudenburg (1977) found that males who were sexist were also likely to be racist and have a stereotypic attitude towards women (i.e., the good/bad dichotomy). While neither Angrist et al. (1977) nor Woudenburg (1977) explicitly used the categories of androgynous

or sex-typed, that their subjects were in fact the traditionally sex-typed individuals may be tentatively established through reference to similar studies. Spence et al. (1975) stated that those holding traditional sex-role stereotypes also held more traditional (read sexist) attitudes toward women as measured by the Attitudes Toward Women Scale. Zeldow (1976) found that androgynous and masculine men were somewhat more liberal than the other classes in his study, but it is not entirely clear from his one page report exactly what was occurring to produce his results.

More pertinent to this present study is the question of the relationships of sex roles to intellectual achievement and vocational interests. Bedeian and Hyder (1977) found that androgynous (HH) females appeared to have a different intellectual perspective from that of males or other females and that their need for achievement was greater. This finding has its contradiction in a report by Jacobson (1979) who found that "sex-role variables play a minor role in the expression of achievement motivation in women." While Jacobson was concerned with achievement motivation, there appear to be no reports linking sex-role variables and achievement behavior. Maccoby (1966), in an extensive review of the literature, found that the high I.Q. female was likely to be dominant and striving (an HH pattern) and that analytic thinking (such as may be required for math achievement), cre-

ativity, and high general intelligence are associated with cross sex-typing (i.e., LH males and HL females). But since Maccoby did this review in 1966 without the benefit of the four-fold model of sex-roles, her "cross sex-typing" probably actually included HH females, as well as perhaps HH males. This sets up an issue for this current investigation--to investigate a possible association between intellectual achievement as measured by ACT scores from the American College Testing Program, and sex-role orientation.

The relationship of sex roles and vocational interests has some precedent in the professional literature. Tangri (1972) investigated the determinants of occupational role innovation among college women and described a personality pattern closely resembling that of the androgynous female. She found that while innovators had a greater commitment to a career, this did not occur at the expense of their social interests. Yanico, Hardin, and McLaughlin (1978) made a distinction between traditional and non-traditional college majors and used the BSRI to investigate the association. They found that androgynous women were equally as likely to choose a traditional as a non-traditional field, while sex-typed women were more likely to restrict their major options to traditional fields, such as home economics. Puig-Casuarone (1976) used the BSRI and the Vocational Preference Inventory (VPI) to investigate the association between sex-role

and vocational interests, but apparently used Bem's (1974) androgyny t-ratio to classify her subjects. Her traditional subjects preferred social occupations, non-traditional subjects preferred conventional and enterprising areas, while the neutral subjects indicated interests in realistic and intellectual areas.

Holland (1966, 1973) has propounded a theory of vocational choice which basically states that both individuals and occupations may be classified into one of six categories, and that individuals will be most satisfied and productive when their occupational choice is congruent with their own personality type. A state of incongruence usually results in individuals' becoming less satisfied and leaving that occupation to gravitate toward another in which there will be greater congruence and satisfaction (Spokane, Malett, & Vance, 1978). While the Strong-Campbell Interest Inventory had been criticized by feminists as having a sexist bias and has been modified on that basis, it does not appear that Holland's Self-Directed Search (1970) has been similarly criticized. Both the Self-Directed Search and the Strong-Campbell Interest Inventory are popular vocational interest inventories that are comparable, utilize Holland's six-fold classification scheme, and have significant overlap in the classification of subjects using these inventories (Cappeto, 1978). Because of their comparability, the simplicity of the Self-Directed Search (SDS) suggested its use as the tool for this present investigation.