# TOKEN WOMEN IN WORK GROUPS: GREAT EXPECTATIONS?

by

MARGARET SUSAN STOCKDALE

B. S., Frostburg State College, 1983

---

A MASTER'S THESIS

Submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Psychology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1986

Approved by:

Major Professor

## Acknowledgments

I would like to acknowledge the contributions made to this project by my major professor, Dr. Frank E. Saal, and my advisory committee, Drs. Patrick Knight and Jerome Frieman. Their insights and careful examination of the report were greatly appreciated. In addition, I would like to thank Dr. Ronald G. Downey for his assistance with data analyses.

The pursuit of a graduate degree is not a solo effort. Therefore, I would like to acknowledge the support graciously received from colleagues Laura King, Laura Milner, Lawrence Schoen and Catherine Johnson.

Finally, I would like to dedicate this work to my parents, Thomas V. and Patricia A. Stockdale, and to my loving husband, Michael P. Heck.

TABLE OF CONTENTS

APPENDICES

TABLES AND FIGURES

# Token Women in Work Groups: Great Expectations?

Margaret Stockdale

In her recent review of research on gender, Deaux (1984) noted that within the past decade such research has accelerated; the development of new journals dedicated to issues related to gender and increased listings in Psychological Abstracts regarding sex and gender topics attest to this trend. Although the study of gender has been prolific in social and personality psychology disciplines, it has not been limited to these fields. Since 1964 and the passage of Title VII of the Civil Rights Act, the growth of women in the work force has led industrial and organizational psychologists to investigate issues regarding women and work. These issues have ranged from discrimination and biases in selection and performance appraisal, to sexual harassment, to women in leadership.

Especially in regard to organizational concerns involving women, the social, personality and industrial/organizational research disciplines have been well integrated. The I/O psychologist knows that the workplace is a social setting, and that social psychological theories and constructs need to be taken into account. Likewise, any social psychological theory

or construct may be incomplete if it does not account for organizational behavior. Furthermore, since these constructs involve distinctively human qualities, the personality psychologist has offered valuable insights and research findings related to gender differences and similarities.

The purpose of this chapter is to discuss the social psychological research related to sex-role stereotyping and expectancy confirmation. This line of research demonstrates that the expectations others hold regarding the behavior of an individual subsequently affect the individual's behavior. The prevailing finding is that these "target" subjects come to behave in a manner similar to the "perceiver's" expectation, thus behaviorally confirming the expectancy. Other researchers have shown that under some circumstances, targets will behaviorally disconfirm the perceiver's expectation in order to enhance self-verification. Although the sex of perceiver has not been experimentally manipulated to examine gender differences in these studies, some researchers (c.f. Christensen & Rosenthal, 1982) have inferred that males are somewhat more responsive to expectancy manipulations than females; that is, men are more likely than women to resort to stereotypes in their evaluation of people. On the other

hand, women are more likely to behaviorally confirm sender's expectations than men. Therefore, if men have strong, possibly stereotypical expectations of the way women should act, then women should be likely to confirm these expectations.

The chapter further examines the effects of sex-role stereotypes on women in the work place. Women entering occupations dominated by men may be particularly vulnerable to their male coworkers transmitting traditional sex-role stereotypical expectations about their behavior. A particular problem women face in male-dominated jobs is tokenism. The focus of this chapter is to explore the solo woman's reactions to the stereotypical expectations of her male co-workers. Research is presented that suggests several qualitatively different responses to tokenism.

## The Expectancy Confirmation Process

Deaux's (1984) summary of the past decade's research on gender stated that, indeed, very few "real" differences exist between males and females, and that these observed differences resulted from sex-role stereotyping. Gender as a social class means that people regard males and females as being different by virtue of

their sex. That is, males are expected to be strong, masculine, aggressive and leadership-oriented; females are expected to be meek, passive, and easily influenced. Deaux called upon researchers to examine processes involved in these expectations and how these expectations affect behavior.

Expectancy confirmation has its origins in Merton's (1948) essay "The Self-Fulfilling Prophecy." He quotes W. I. Thomas' theorem, "If men [sic] define situations as real, they are real in their consequences" (p. 193). This theorem received attention by psychologists when Rosenthal and Jacobson (1968) demonstrated that teachers' expectations affected student performance. More recently, Darley and Fazio (1980) have reviewed the psychological attention to the self-fulfilling prophecy and have delineated a sequence of social interaction arising from the expectancy confirmation process. This sequence can be described as follows: A set of expectancies about the target is generated by the perceiver, and the perceiver behaves toward the target according to those expectancies. The target interprets and responds to the expectancies, which in turn allows the perceiver to interpret the target's behavior as confirming the original expectations. Furthermore, the target interprets his or her own behavior. One

interpretation would be that the behavior was caused by the perceiver's expectations. Another response would be that the target learns new insights into his or her own behavior, and thus internalizes the behavioral confirmation of the perceiver's expectations as part of their own self-concept (Darley & Fazio, 1980).

Fazio, Effrein and Falender (1981) have shown that targets not only behaviorally confirm the expectations of senders, but also internalize the expectancies as part of their self concept. Subjects were primed with pre-interaction questions that biased them to behave either in an introverted or extroverted manner. Judges, blind to the manipulation, perceived that subjects in the introverted condition did in fact behave in a more introverted way than subjects in the extroverted condition when they interacted with the experimenter. Furthermore, when the experimenter left the scene and the subject interacted with a confederate posing as another subject, the subject still behaved in accord with the prior expectation. The authors concluded that the subject internalized the biased expectancies and came to believe they were introverted or extroverted. Fazio et al. (1981) suggested that the expectancy cues about introversion or extroversion made salient to the subject instances in which they had behaved in such a manner.

The increased saliency then allowed subjects to perceive themselves as being introverted or extroverted. The authors did not report the gender of their subjects, so it was not possible to determine if male or female targets differentially confirmed or disconfirmed expectancies, nor to what extent males or females internalized the expectancies.

## The Formation of Expectancies

How do perceivers build expectations about others' behavior? In the Fazio et al. study (1981), the expectations were part of the experimental manipulation, but that did not address how expectancies can arise naturally. Darley and Fazio (1980) suggested three possibilities. First, the perceiver simply observes a sample of behavior and infers a general personality from that behavior. Since that sample of behavior is unlikely to be fully representative of the target's true personality, the subsequent expectancies may be biased. One type of bias likely to occur is halo, where the subjective evaluation of an individual's behavior in one domain permeates throughout the evaluation of the individual's entire personality. A second source of the

perceiver's expectancies come from attributional errors (e.g. fundamental attribution error). Jones and Nisbett (1971) have shown that even when the perceiver knows of the limitations imposed upon the actor or target's behavior, the perceiver overestimates dispositional causes of the behavior. Therefore the target is perceived as behaving in a certain manner because "that's the way they are," and this attribution is likely to overgeneralize to future expectations of the target's behavior. Implicit personality theorists (c.f. Schneider, 1973) offer an explanation of a related process that may create similar expectations. Based on limited information the perceiver gains from the target, the naive personality theorist (i.e., the perceiver) infers dispositional traits about the target which form the basis for further expectations.

Darley and Fazio (1980) also indicated that prior experience with the target is not necessary to form expectations. "A perceiver's knowledge that a target individual belongs to some racial, ethnic, or gender category may trigger inferences about what actions he or she ought to display" (p. 870). The degree to which the perceiver holds stereotypical views, then, will have a strong impact on the expectations generated in regard to the target's behavior.

The third source of behavioral expectations, according to Darley and Fazio (1980), is derived from others' interactions with the target such that the target's reputation precedes any interaction the perceiver may have with the target. This is a common phenomenon in school, where teachers discuss students' performance before classes begin, and good and poor students have already been labeled (Rosenthal & Jacobson, 1968).

## Sex Role Stereotypes and Working Women

In regard to women in the workplace, sex-role stereotyping as it affects behavioral expectancies is important. It has been recognized that one of the barriers that impede women from moving into higher management levels or areas of greater responsibility is the stereotypical perception that women do not have the skills and dispositions necessary for being a good manager. Schein (1973, 1975) showed that the requisite characteristics for management are perceived by men and women to be leadership ability, competitiveness, self-confidence, objectivity, aggressiveness, forcefulness and ambitiousness, and that these characteristics are deemed descriptive of men but not

women. Furthermore, Massengill and DiMarco (1979) replicated Schein's studies to determine if these attitudes were consistent four to six years later. They found that males rated characteristics of men to be highly similar to characteristics of managers. Females indicated the strongest degree of relationship between men and managers, but also indicated moderate relationships between women and managers, and women and men. Although womens' attitudes appear to be changing, the overriding perception is that being a manager means being a male or, at least, behaving in a male-like way. The converse of the relationship, that the characteristics of a poor manager are feminine, has not been supported (Powell & Butterfield, 1984). Therefore, being a female simply means not being perceived as a manager, good nor bad.

Sex role stereotypes that form the basis of an individual's expectations are pervasive in their effects upon women in the workplace. Cohen and Bunker (1975) found that there was little evidence to conclude that women were discriminated against strictly on the basis of their sex, but that sex-role stereotypes operated to influence recruiting decisions. Job recruiters were more likely to recommend a woman for the job of editorial assistant, a job which connotes a feminine stature due to

its journalistic and literary orientations, while men were more likely to be recommended for the position of personnel technician.

Ruble, Cohen and Ruble (1984) noted that occupational sex typing may be somewhat veridical. That is, our expectation of what roles or jobs men and women should attain reflects the probability of that job being held by a man or a women. These judgments also tend to be associated with sex stereotypes relative to the personal attributes thought to be necessary for the job. "Thus occupational sex typing and sex stereotypes operate in concert to serve as barriers for women aspiring to positions with high pay and prestige" (Ruble et al, 1984, p.342).

Sex role stereotypes have been shown to greatly affect women's access to work through occupational aspirations (Archer, 1984; Terborg, 1977), occupational entry (Cohen & Bunker, 1975) and movement throughout the organization via performance appraisal (e.g., Rosen and Jerdee, 1973). In terms of performance appraisal, though, particularly interesting findings have emerged. Deaux and Taynor (1973) found that college students rating stimulus persons (supposedly job applicants) gave higher evaluations in terms of competence and intelligence to highly competent men than to highly

competent women. Furthermore, barely competent men were rated lower than barely competent women.

Bigoness (1976) found results contradictory to those of Deaux and Taynor (1973). Highly competent women were rated more favorably than highly competent men, and there was no difference in evaluation between barely competent men and women. The task on which men and women were rated was stocking groceries. The unexpected good performance of a woman may have led raters to overestimate her performance. A study by Brief and Wallace (1976) found that the sex-type of the job, or task, explained much of the variance in the allocation of organizational rewards. That is, in a neutral sex-typed task, men and women were not rated differently by virtue of their sex, but by virtue of their performance. Therefore, Brief and Wallace concluded that sex role stereotypes may not operate against women across all jobs, but may cause problems when tasks become sex-typed. Thus a managerial job that, as indicated by Schein (1973, 1975), is regarded as masculine will be problematic in terms of sex stereotypes for women aspiring to such positions.

## The Effects of Sex Role Stereotypes on the Social Interaction Process: Behavioral Confirmation or Self Verification

Sex role stereotypes, as previously mentioned, can directly affect the movement of women into the workplace via recruitment, selection, performance appraisal, and even career aspirations (e.g. Archer, 1984). Although it is possible to monitor the obvious effects of sex role stereotyping through equal employment opportunity legislation and affirmative action policies, subtle effects may be more difficult to monitor. Sex role stereotypes that alter the social interaction process are likely to have elusive yet persevering effects.

Snyder, Tanke and Bersheid (1977) demonstrated that social stereotypes can, in fact, influence the behavioral confirmation of a target of stereotypical expectations. These researchers investigated the effects of males' experimentally manipulated expectation regarding physical attractiveness of a woman they were about to speak to over the telephone. Independent judges who were blind to the experimental manipulation rated the woman's behavior. Women who were talking with men who were told the woman was physically attractive came to behave in a manner that was friendly, likable and sociable. This was in

comparison to women who were communicating with men who believed they were physically unattractive. Snyder, et al (1977) explained their results in terms of the salience of social stereotypes. They stated:

> "Many social stereotypes concern highly visible and distinctive personal characteristics...These pieces of information are usually the first to be noticed in social interaction and can gain high priority for channeling subsequent information processing and even social interaction." (p.657).

Thus the male's perception that his partner was attractive led to the stereotyped attribution that she was friendly and likable. In return, the female target behaviorally confirmed his stereotyped expectations.

This type of investigation should be representative of the expectancy effects of sex-role stereotypes as well as social stereotypes, for each is similarly defined. Ashmore and DelBoca (1979) defined a generic stereotype in terms of implicit personality:

> "A stereotype is a structured set of inferential relations that link a social category with personal attributes. Sex stereotypes, in turn, are the structured sets of inferential relations that link personal attributes to the social categories female and male" (p. 225).

In a study similar to Snyder et al (1977), Zanna and Pack (1975) found that a male's stereotype of an ideal women affected the behavior of a female target when both engaged in a dyadic interaction. This effect, though, was moderated by the perceived desirability of the male by the female. A desirable male (physically attractive, single, wanting to date) who held a traditional stereotype of an ideal woman induced behavioral compliance by the female target evidenced by her traditional feminine manners. Likewise, a female who interacted with a male whose ideal woman stereotype was progressive and modern behaved in a manner congruent with this stereotype. An undesirable male (unattractive, currently dating and not interested in meeting females) did not produce behavioral compliance by the female target regardless of his ideal woman stereotype. It should be noted that the ideal woman stereotypes and the perceived desirability of the male were experimentally manipulated and not natural characteristics of the subjects involved.

The studies by Snyder et al. (1977) and Zanna and Pack (1975) support the hypothesis that targets will behaviorally confirm perceivers' expectations. There is a body of literature, however, that suggests that targets may behaviorally disconfirm a perceiver's expectations to

maintain their own self-concept. Swann and Ely (1984) sought to determine under what circumstances targets will behaviorally confirm perceivers' expectancies or cause the perceiver to change the expectancy to be more congruent with the target's self-perception. These researchers hypothesized that targets would be less likely to behaviorally confirm the expectations if they felt certain of their self-image. Targets were presumed to know more about themselves than perceivers so they would be more tenacious toward this self-concept. Swann and Ely found that when targets felt certain of their self-concept (being introverted or extroverted), they tended to behaviorally disconfirm the perceiver's opposite expectancies, regardless of how certain the perceiver felt about the expectations. Targets tended to behaviorally confirm the perceiver's expectations when they were uncertain about their own self-concept, and the perceiver was certain about their expectations. All subjects in this study were females, so it was impossible to ascertain whether sex of perceiver or sex of target moderated this relationship.

Consistent with the assumption that the workplace is a type or subset of the greater construct known as social setting, similar behavioral confirmation should be found in organizations. That is, persons who are the targets

of stereotypical perceptions should, under some circumstances, come to behave in a manner that confirms the stereotypical expectations of those behaviors. An important consideration for the present research is to determine those circumstances that impede, permit or modify such behavioral confirmation, and to determine circumstances in which behavioral disconfirmation will occur.

Gender Differences in Behavioral Confirmation

As previously mentioned, past research has not addressed the issue of whether men and women vary in their degree of behavioral confirmation or disconfirmation. Research on social influence has claimed that women are generally more easily influenced than men (c.f. Whittaker, 1965). Moreover, Eagly (1978) pointed out that many important sources (e.g., textbooks, reviews) have regarded this sex difference as "large, strong, clear, and well established and claim that it is both general and consistent" (p. 87). Eagly (1978; Eagly & Wood, 1982) contended and demonstrated, however, that the hypothesis that women are more easily influenced than men cannot be accepted in cases of persuasion and conformity research. Furthermore, there is only limited evidence to indicate that women are more easily

influenced than men in the context of a group conformity paradigm.

Eagly (1978) further stated that women are more easily influenced in situations traditionally perceived as masculine. Likewise, men are more easily influenced when the context is one in which men are perceived to be inexpert. In those cases in which women are generally more easily influenced, the context of the influence may be misunderstood. Eagly claimed that since women are more responsive to interpersonal aspects of group functioning and maintaining group harmony, this gender difference may be misinterpreted as women being easily influenced.

Christensen and Rosenthal (1982) provided evidence that interpersonal expectancy and behavioral confirmation varied as a function of sex. In particular, male perceivers were more influenced by pre-interaction expectations of their target and female targets behaviorally confirmed these expectations more so than men. Neither male nor female targets were especially responsive to a female perceiver's expectations. Therefore, as Eagly (1978; Eagly, et al., 1982) suggested, women may not be more easily influenced than men when the expectations of the sender are held constant, but women may be more responsive to varying

expectations of men.

In summary, the literature appears to show that women may be more easily influenced than men in group conformity situations, but this may be because women are more responsive to interpersonal demands than to direct influence attempts. Further, men may be more influenced by expectancy manipulations in terms of acting out these expectancies, while women are more likely to behaviorally confirm a male's expectations. It is suggested, then, that a woman's behavioral confirmation is a response to salient interpersonal demands.

## The self-fulfilling prophecy in the workplace: The problem of tokenism

In terms of sex-role stereotyping and the workplace, the effects of expectancies on behavioral confirmation can have important implications. Schein (1978) outlined several consequences of sex-role stereotyping in the workplace. These consequences included biases in placement, supervision, power and political behaviors. Also included was the suggestion that tokenism could be a result, as well as a cause, of sex-role stereotyping. Moreover, other researchers (c.f. Crocker & McGraw, 1984; Kanter, 1977 a & b) have hypothesized, and empirically

demonstrated, that tokenism is a major barrier impeding women's equality in the work force.

The construct of tokenism has received some thoughtful attention during the past decade. The focus of this attention has been somewhat theoretical and perhaps more anecdotal than experimental or empirical. Authors have generated two different definitions of tokenism; this has led to divergent paths of research in terms of subject matter, predictions and hypotheses. Most researchers (c.f. Kanter, 1977a, 1977b; Laws, 1975; Young, MacKenzie & Sherif, 1980) agree that a token is a single member of a social category defined by a master, social status such as sex or race, in a group of individuals who all belong to another, higher status, group also defined by master status. The latter group is typically referred to as the "dominants." Thus, in an all white fraternity, a black pledge may be considered a "token black." The only woman executive would be a token among all the other male executives in a business setting. A male nurse may be a token male among an all female nursing staff.

## Tokenism as a Configuration of Attitudes and Motivations

Laws' (1975) analysis of tokenism defined the

construct in terms of motivational properties. That is, a token was not determined just by examining numerical proportions, but by inferring the purpose for which the token was a member of the dominant group. Token status implied that only one member of the inferior class was allowed to gain entrance into the dominant group, and that this entrance was feasible only through the help of a sponsor from the dominant group. The token, then, was a symbol of the inferior group to all members of the dominant group. Laws stated that for a member of an inferior group to become a token meant that she/he exhibited characteristics superior to those of the rest of the inferior group such that she/he was more like the dominant group. Although the dominant group still perceived the token as a mere symbol, the token aspired to the motives and values of the dominants. Moreover, the token would be motivated to minimize the accomplishments of other members of the inferior class, and degrade the characteristics that defined that class so as to ensure his/her token status among the elite dominants.

Young, MacKenzie and Sherif (1980) sought to provide support for Laws' (1975) definition of tokenism. In accordance with Laws' analysis, Young et al. developed criteria that would discriminate between token women and

non-token women in academia. A token woman would be more likely to view the institution as a meritocracy than would non-token women; token women would perceive less discrimination within the university and would be less likely to belong to a feminist organization than would non-token women. Therefore, a token woman was identified as one who assimilated the values and ideals of the dominant university group (i.e., male academicians), while the non-token fought against this system.

Young et al. identified three clusters of women faculty at an eastern university based on the above criteria. The clusters were tokens, non-tokens and undefined women who had qualities of both token and non-token groups. However, Constantinople (1982) questioned the adequacy of the operational measures used to define tokenism. For instance, Laws (1975) implied that a token would only gain entrance into the dominant group if she/he had a close relationship with a sponsor from the dominant group. Young et al., however, examined the occurrence of sponsorship as a dependent variable rather than including sponsorship as part of the definitional criteria of tokenism. Constantinople also complained that the method of choosing token women, by examining departments that had at least two-thirds male faculty, would naturally lead to tokenism. That is, by

examining only those departments in which women were token in terms of numerical proportion, it would be unlikely to find women who did not exhibit token attitudes.

This raises two important issues. First, do women in token positions have different attitudes, perceptions and behaviors than non-token women when tokenism is defined by numerical proportions? Second, when numerical proportions are held constant, what variations in attitudes, perceptions and behaviors exist among different types of tokens, and what factors will predict these differences among tokens? The definition of tokenism may influence the different answers to these questions.

## Tokenism as Numerical Proportions

In Kanter's (1977a & 1977b) encounter with the pseudonymous Industrial Supply Corporation, she eloquently documented the problems and peculiarities of women in token positions. Her definition of a token was based on numerical considerations and thus documented the effects of mere group composition on the attitudes and behaviors of both male dominants and female tokens.

Using her terminology, group composition was divided into four categories. The Uniform group had only one

kind of member, all of whom were considered homogeneous with respect to master status. Skewed groups were characterized by a preponderance of one type over the other such that the majority group controlled the culture in many ways and were considered dominants. The numerically few were labeled tokens. A Tilted group had a less extreme distribution such that the dominants were considered the majority and the tokens a minority. Having minority status allowed this group to form allies and coalitions that could affect the group. A Balanced group had equal representation from the various subgroups and the culture and interaction of the group reflected this balance (Kanter, 1977a).

Having token status meant that the woman was immediately more visible than any single member of the dominant group. To the dominants, the token became a symbol of all women. Her individuality was not as valued as much as her representativeness. The dominants subsequently created a set of expectations that the token would assume all feminine roles. She was called upon to offer the woman's point of view or to add the woman's touch to the office. Consequently, the performance pressures resulted in two different types of responses. The first was overachievement. Women in this category let their accomplishments be known by promoting their

efforts around others. Threats of retaliation were evoked with the prediction that the token would be "put in her place" soon. The second response was to minimize visibility and to try to blend into the dominants' culture. Conflict, risks and controversial situations were avoided. Achievements and accomplishments were down-played.

Not only was visibility heightened in token status, but so was the degree of sex-role stereotyping by the male dominants. Tokens were perceived as "mothers," "seductresses" or "cheerleaders," and were expected to fulfill at least one of these roles. Women who refused to be cast into stereotypical roles were labeled "women's libbers," and thus stereotyped as "iron maidens." A woman token could not be viewed as an individual.

Kanter's (1976a) encounter with token women at the Industrial Supply Corporation is descriptive of other accounts of skewed sex ratios. Wolman and Frank (1975) described the reactions and behavioral consequences of solo women who belonged to one of six interpersonal sensitivity or task-oriented groups in a psychotherapy setting. In five of the six groups, the solo women

became deviants or isolates. Four of these women who tried to escape this role became anxious and depressed, and their efforts to cope with the anxiety heightened the perceptions of the solo's femininity, and thus made differences between the solo and the group more succinct. The other two women who accepted their role achieved, at best, low-status regular membership in the group.

Tokenism as a Consequence of Affirmative Action

The concept of tokenism has also been examined in regard to affirmative action policies. A common perception is that affirmative action policies promote tokenism because protected class individuals are hired or promoted because of their status characteristic (e.g. sex or race) and not because of their ability. Regardless of the company's policy, what are the reactions of women who are placed according to affirmative action policy? Chacko (1982) explored this question by asking 70 female managers who attended a management development seminar about the factors that were important in their being hired. Among these factors were ability, experience, education and gender. The women were also given questionnaires measuring organizational commitment, role conflict and ambiguity, and job satisfaction. Women who identified themselves as tokens in terms of numerical

proportion viewed their sex as a more important determinant of their hiring than non-tokens. Moreover, perceptions of sex as the important selection determinant were related to less organizational commitment and satisfaction and greater role stress.

Heilman and Herlihy (1984) examined male and female high school students' perceptions of a sales manager job in which the proportions of women holding that job were varied in an experimental setting (8 versus 28 percent of the labor market for that job). The students were also told that the "increase" in women holding that position was due to either womens' ability (merit) or preferential treatment due to affirmative action policies. The results indicated that female subjects were more interested in the job when they believed there was greater proportional representation of women in the job, but this perception only held when they believed this was due to womens' merit and not preferential treatment. Similarly, male subjects were less interested in the job if they believed that women gained access through preferential treatment. This study highlighted the important consequences of potential jobholders' perceptions of affirmative action policies. If women are seen as gaining access to a job only because they are women, both men and women will find the job less

desirable.

Crocker and McGraw (1984) manipulated tokenism in an experimental setting in which three levels of group composition were studied. The groups were organized as having either one female and five males (female token), three females and three males (balanced), or one male and five females (male token). The task for each of the groups was to rank-order a list of activities in terms of perceived importance for getting into graduate school. Measures of individual functioning were assessed by asking each member of the group to rate two other members. The token and one other member were rated in the two token conditions, and a male and female were rated in the balanced condition. Tokens rated themselves and another member. The subjects rated each target in terms of how important they felt the target's sex was in determining task and group performance. Subjects were also asked to indicate who they thought was the group leader, and whether they would prefer a different sex composition for the group.

Results showed that female tokens never identified themselves as leaders, while thirty percent of the male tokens identified themselves as leaders. Members of token groups preferred a different sex composition than members of the balanced group, and this desire was

greater for members of the female token condition than male token condition. Members of token groups preferred to belong to groups that were balanced in regard to sex composition. Gender was mentioned as part of the group members' impressions only in the token condition, and again, this was greater for female tokens than for male tokens. Finally, although target females attributed their behavior to their sex less than did other group members, across all sex composition conditions, solo females and group members thought the female token's behavior was more related to her gender than anything else. This study highlighted the importance of mere numerical proportion on members' perceptions of others, and attributions of one's own and other's behavior.

Summarizing the literature on tokenism, several themes are illustrated. Whether tokenism is defined in terms of numerical proportions (Kanter, 1977a, 1977b) or in terms of motivational properties (Laws, 1975), it remains that tokenism is a phenomenon whereby one person of one master status belongs to a group where everyone else holds another master status. The difference between the token and the dominants creates greater visibility for the token. This visibility is said to induce stereotypical attributions for the token's performance and stereotypical assignment of roles to the token. Two

general behavioral consequences are hypothesized to follow from a token situation (Crocker, et al., 1984; Kanter, 1977a). Tokens may try to overachieve to defy the stereoped perceptions, that is, to behaviorally disconfirm the expectation, or tokens may try to avoid visibility by performing below their ability level and behaviorally confirming the dominants' expectations. The empirical evidence (Chacko, 1982; Crocker, et al., 1984) shows that the general response for tokens is to be less satisfied with their job and to be under greater stress than non-tokens. Furthermore, tokens and dominants are more likely to attribute a female token's behavior to her sex rather than her ability or individuality; this was not found for the male token condition.

Several questions remain. Do all token situations result in poor performance by the token? If tokenism evokes stereotypical expectations by the dominants toward the token, then to the extent that these expectations demand poor performance, the token's behavioral confirmation should follow. Poor performance could also result from a role overload perpetrated by the dominants on the token. Since the token is a symbol of all woman, the dominants may expect her to be wife, playmate and secretary, as well as coworker. The token's attempts to behaviorally confirm all these expected roles may inhibit

her work performance. Although the empirical evidence has not consistently found overachieving tokens, are they non-existent? Kanter's (1977b) anecdotal evidence, as well as Wolman and Frank's (1975) observation of professional groups, suggest not. Both Kanter and Wolman and Frank implied that overachievement was a response to the token situation, but usually was not a successful tactic in allowing the token to become an integrated member of the group. A third behavioral tendency in response to tokenism would be to assimilate the values, behaviors and ideals of the dominant group. As Laws suggested, such a response would be predicted if the token believed she was admitted into the group because of special qualities she possessed which made her more like the dominant group.

Through a review of the past research on tokenism and related processes, the following pattern has emerged. Tokenism creates a situation in which the token is highly visible to all other dominants. Her visibility assigns her the role of being a symbol of all women. As a symbol, the token evokes expectations by the dominants that she fulfill their stereotypical image of a women. In terms of tokens in management, the stereotypical attribution according to Schein (1973, 1975) is that being a woman implies not being a manager. Thus if the

token behaviorally confirms the dominants' expectations, she will not succeed in management.

In conclusion, tokenism in the workplace is a prevalent problem in contemporary organizations, given the emphasis of affirmative action policies to move women into higher levels of management. For an affirmative action program to be successful and for an organization to make the most out of its human resources, tokenism is a problem that needs to be better understood.

## The need for further research

Research regarding tokenism should be directed at settling the definitional problem of tokenism. A token who is defined by Laws' analysis should have a stronger self-concept and a greater feeling of being part of the team than would a token defined in a nominal sense. The first type of token is more likely to be motivated to emulate the group's ideals, whereas the nominal token is probably more likely to resent her token status. Swann and Ely (1984) provided evidence that targets who have a strong self-concept will be more likely to behaviorally disconfirm perceivers' expectations. In the context of tokenism, the token/target having a concept of herself as deserving group membership should strive to maintain this

image in the face of the dominants'/perceivers' stereotypical expectancies. On the other hand, a token who is unsure of her self-concept in regard to group membership will be more likely to behaviorally confirm the dominants' expectations, especially if the expectancies are strong and consistently stereotypical. Therefore, nominal tokens, those who are tokens merely by numerical proportions, should be more likely to confirm the perceivers' expectations and be less successful as a group member.

A second aim of research on tokenism should be to ascertain the role of stereotypes on perceivers' expectations and tokens' success in the group. Laws (1975) claimed that even a highly motivated token, sure of her self-concept, could meet with failure if the dominant members stereotypically expected her not to fit in with the group but to fulfill "the woman's" role. Hence, to the degree that dominants hold stereotypical views of women in management, the behavior of the token should follow. The more stereotypical these views, the more likely the token will fail; the less stereotypical these views, the more likely the token will succeed.

A third purpose for continuing research on tokenism should be to verify that problems with tokens are not only based on the ratio of dominant members to minority

members, but that the situation involving female tokens and male dominants is unique. In the context of a managerial setting, women are more likely to be tokens than are men. Since management is deemed to be a male task, male tokens in this situation should not face the same problems as females. The reasons for this assertion are two-fold. First, there is not a stereotype that males are not good managers. Furthermore, female dominants do not hold a greater status in society than males. Therefore, the expectations of female dominants should not have any unified stereotypical support. Second, past research (Crocker & McGraw, 1984) has shown that male tokens did not receive as many negative evaluations as female tokens. Perhaps male tokens would experience similar, negative evaluations in a job setting in which females are proportionately dominant. This question, though, is beyond the scope of the present study.

Purpose of present study

The purpose of this study is to address the concerns mentioned above. The research on tokenism to date has not attended to the possible ramifications of tokens' performance in regard to how the token is defined. It

seems plausible that a token defined in Laws (1975) analysis, as being motivated to assimilate the goals and values of the group, would be more likely to behaviorally disconfirm discrepant expectations. Using Kanter's terminology, a token is defined merely by her singularity. It is also plausible that such a token may not have the same motivational characteristics as Laws' token, and will therefore be more likely to behaviorally confirm the dominants' expectations.

When discussing behavioral confirmation, an implicit assumption is that the perceivers have such expectations. In the present context of tokenism, the dominants are assumed to deliver sex-role stereotypical expectations to the token. This assumption, however, has not been tested. Dominants who do not hold sex-role stereotypes should not send stereotypical expectancies, and therefore tokens should not act in a traditional feminine way in regard to the expectations (although they may behave "traditionally" for other reasons).

The present study aimed to resolve these omissions in past research. Furthermore, the Crocker and McGraw (1984) study was replicated with important methodological changes. First, Crocker and McGraw did not use a managerial-type task; they had subjects list criteria for getting into graduate school. The present study used a

managerial-like task so that inferences could be made about this population, where the problem of tokenism is quite pervasive. Second, Crocker and McGraw had all subjects except tokens give peer evaluations of group members' performance. Tokens rated themselves and another group member. The present study had all subjects rate themselves and two other group members. Therefore, meaningful comparisons could be made between tokens and non-tokens on both peer and self evaluations. Third, Crocker and McGraw did not vary the knowledge the subjects had of why the token belonged in the group. In the present study, members of some of the teams in which a token is present were told the token was a member of the group because he/she deserved group membership, thus creating a motivational token condition in Laws' terminology. A variation on this selection model is a token who is qualified for group membership but chosen because a male or female is needed to fulfill an Affirmative Action Quota. Therefore some team members were told the token was qualified but selected because a male/female was needed. Finally the last group of team members were told the token was only adequate for the job and selected on the basis of their gender, thus creating a nominal token condition in Kanter's terminology, or a "preferential treatment" token in Heilman and Herlihy's

(1984) taxonomy. Subjects received information about non-tokens' selection as being highly deserving of group membership.

Review of hypotheses

1) "Qualified" tokens will experience more success in the group task than will "nominal" or adequate tokens. No specific hypothesis was made about tokens who were qualified but chosen because of their gender. Success is operationally defined as being more satisfied with the task and with their coworkers, receiving higher peer and self evaluations of their performance, and experiencing less role ambiguity and conflict during the group task. These criteria closely parallel the organizational criteria used in the Chacko (1982) study.

2) There will be a relationship between group members' attitude toward women as managers and tokens' success; the more stereotypical these attitudes the less will be the tokens' success in the group.

3) Hypotheses #2 will hold only for the condition in which female tokens exist. In the balanced condition (equal numbers of males and females) no token exists who can stand out as a symbol and evoke stereotypical

attributions. In the male token condition, the stereotype of "manager" is congruent with the stereotype of "male," and this will not impede the male tokens' success. This hypothesis is also made with the findings of Crocker and McGraw (1984) in mind; they found female tokens to be less successful than members of balanced groups or male tokens.

4) Comparing the success of tokens to nontokens, nontokens will generally be more successful than tokens. The relationship of token status to success, however, will be moderated by the sex of the subject, such that male dominants (males in the female token condition) will not differ from male tokens.

5) Males, whether tokens or dominants, will not generally be affected by skewed numerical proportions. Female tokens are hypothesized to have the poorest success, whereas female dominants are expected to not differ from male tokens or dominants. Members of balanced groups, whether male or female, will experience greater success than token or dominant members of token groups. This hypothesis is based on the experimental findings of Crocker and McGraw (1984), and the field study findings

of Kanter (1977b).

## Method

### Subjects

Subject recruited for this study were 118 were males and 117 females. Subjects were undergraduates from Kansas State University and received experimental credit for their participation. Subjects read the following message when they signed up for this study:

> "This is a study about managerial teamwork. The researcher is interested in determining if individual creativity and intelligence are related to team performance. You will be asked to complete some measures of creativity and intelligence and will then be assigned to a team based on your performance. The team will work on a problem solving task, and then will be asked to rate each other's performance. You will receive 2 hours of experimental credit for your participation."

Subjects were tested in groups of twelve. Each group of twelve subjects was randomly assigned to one of three teams having the following composition: one female and three males (female token), two females and two males (balanced), and three females and one male (male token).

Although more than 12 subjects were recruited for each testing period, only 12 were used as actual subjects. Any extra participants were tested and used as observers for the experimental task. These "observers" were chosen randomly from the available subject pool. This tactic was used to help insure that at least 12 subjects were available for the experiment (the 235 subjects does not include these "observers", and data were not collected on them).

Measures and Materials

All available students enrolled in General Psychology at Kansas State University in the fall of 1985 were asked to complete the Women As Managers Scale (WAMS; Peters, Terborg & Taynor, 1974), and the Crowne-Marlowe Social Desirability Scale (Crowne & Marlowe, 1960).

The WAMS is designed to measure stereotypic attitudes toward women as managers. Terborg, Peters, Ilgen & Smith (1977) reported validity and reliability information. The split-half reliability coefficient was .92 (corrected by the Spearman-Brown formula) for the overall scale of 21 items. Factor analysis did not yield any more information than the overall composite, so this scale appears to measure a single general dimension of attitudes toward women managers. Although Crino, White and DeSanctis (1981) tried to refute the assumption that

WAMS is unidimensional, Ilgen and Moore (1983) claimed that Crino et al's. logic and analyses were incorrect. Hypotheses concerning the sex of subject, and respondent's attitude toward the feminist movement were generally supported. Women had a more positive attitude as measured by the WAMS than did men, and respondents with stronger feminist attitudes were also more favorable toward women as managers. A regression analysis revealed that sex and education accounted for 22.2 percent of the variance, with highly educated females having the most positive attitude.

In terms of organizational predictors, the analysis on WAMS was divided between males and females. For females, a multiple regression analysis produced an overall R of .32, accounting for 10.2 percent of the variance. Pay classification (salary versus hourly) accounted for 8.8 percent of the variance, indicating that females who are classified as "salaried" as opposed to "hourly" had the most favorable attitudes toward women. Cross-validation of the multiple regression equation, however, produced substantial shrinkage (the cross-validated R equaled 18) that minimized these inferences. Similarly for males, the multiple R between WAMS and organizational predictors was .34, with pay classification and the number of months since the

last promotion accounted for 10.2 percent of the variance. This relationship, too, did not hold up under cross-validation ($\underline{R}$ = .05).

Overall, the WAMS appeared to be an adequate measure for the purpose of this study. Although the validity study did not support organizational factors as predictors, it did show that women have less stereotypical attitudes than men, and that persons with more positive attitudes toward the feminist movement have more positive attitudes on the WAMS. A more stable estimate of internal consistency was not reported (i.e., Cronbach's coefficient alpha), yet the split-half reliability suggested that the scale was consistent. Terborg et al. (1977) also reported that WAMS was not related to scores on the Crowne-Marlowe Social-Desirability Scale. As a measure of stereotypical attitudes in the context of this study, the WAMS should be sufficient.

A recent study (Granier & Benson, 1985) demonstrated that the WAMS had sufficient test-retest reliability over a six week period ($\underline{r}$ = .86, n=277). This finding is important for the present study, since the WAMS was used as a pretest measure for a study to be conducted later in the semester. Granier and Benson also noted that WAMS was more positively correlated with the Crowne-Marlowe

Social Desirability Scale ($r$ = .33, $p<.005$) than it was in 1977 (Terborg, et al., 1977). Granier and Benson suggested that increased awareness of the Womens' Movement may explain this higher social desirability response, but there is still a sizable minority who feel that women managers should be rated negatively. The present study used the scores on the Crowne-Marlow scale to partial out any variance in the WAMS due to social desirability, and this residual variance of the WAMS was used in a regression analysis.

Phase One

In the first phase of the study, subjects completed two tests that they believed were creativity and intelligence exams. In fact, these measures were fake measures and were disguised as a selection device for group placement. One of these measures was the "creative uses" test that asks subjects to think of as many uses for an item as they can; the items were a hanger and a doorknob. The second measure was an anagram test in which subjects were given twenty anagrams of varying length (between four and seven letters) to solve. Subjects were allowed ten minutes to complete each "test."

Phase Two

During the second phase of the study, subjects were

divided into groups of four. The task that each group took part in was entitled "Towers" (Pfeiffer & Jones, 1974), and was designed as an exercise in group competition and communication. Practitioners have adapted its use to teach managerial functions and skills such as leadership, planning, goal setting, controlling, problem solving and delegating, as well as learning about group processes. Past use of this exercise in management training seminars has given credence to these stated assumptions. The specific managerial dimensions which this task is designed to assess become salient to participants as they witness in an accelerated fashion the implicatons of teamwork, communication, leadership and competition. This task was chosen over other managerial-simulation exercises because it had been shown that participants became highly involved in the experience. In addition, since the processes the task was designed to teach were those associated with management, the task could be considered masculine sex-typed in accord with Schein's (1973, 1975) finding that management is a masculine sex-typed task.

Towers is essentially an exercise in which participants are divided into small groups, and each group is given, scissors, string, and paper clips, and a stack of newspaper. The task is to build a tower in 45

minutes using only these materials. Subjects were told that each tower was to be judged on its height, aesthetic appeal and sturdiness, and the team with the best tower would win a prize. The towers were not actually judged, but these instructions were intended to create intergroup competition. Although this task did not appear on the surface to be typical of regular managerial-type tasks, the processes that emerged (e.g. leadership, planning, delegating) were those generally deemed important for management.

Upon completion of this group task, peer and self-ratings of each other's performance were collected. It was decided to use peer and self-ratings for several reasons: 1) to eliminate the need to have judges rate performance; 2), to be consistent with the study by Crocker and McGraw (1984), in which tokens rated themselves and two other members of the group, and other subjects rated the token plus one other member of the group. 3), to have peers rate each other, because it is the evaluation of the dominant group members that should have the greatest effect on tokens' performance, as opposed to some type of "objective" rating of performance. Furthermore, self ratings were gathered to learn more about how the tokens viewed themselves in comparison to others' self ratings. A copy of the rating

scales is provided in Appendix A.

To assess subjects' satisfaction with the task, two subscales of the Job Descriptive Index (JDI; Smith Kendall & Hulin, 1969) were used. The subscales were satisfaction with work (18 items) and satisfaction with co-workers (18 items). It was decided not to use the other three scales of the JDI (supervision, pay and promotions) since they were not appropriate for the present context (see appendix B).

To measure tokens' role stress in relation to the role stress of other group members, a special measure was designed for the present study. A review of the existing measures of role strain (e.g. Rizzo, House & Lirtzman, 1970) revealed no satisfactory scale that would measure stress related to specific tasks (as opposed to scales that measure role strain in a broad organizational context). The scale used for this study was developed in regard to the specific task on which subjects were working. Specifically, items were selected to measure perceived role ambiguity and role conflict, since these dimensions were hypothesized to be related to tokens' performance. Items for the scale were adapted from an instrument created by House, Schuler and Levanoni (1983) which was an extension of the role strain measure developed by Rizzo, House and Lirtzman (1970). House et

al. claimed that their scale was relatively free from wording artifacts that may have confounded the original (Rizzo, et al., 1970) scale (see appendix C).

Procedure

Subjects were tested in groups of twelve. During Phase 1, subjects were asked to complete the two measures of creativity and intelligence, and were told that these measures would be used to assign people to problem solving groups. They were reminded that the purpose of the study was to examine individual creativity and managerial group problem solving, and that they should try their best on the following tests. Subjects were administered these tests in a counter-balanced order, and were given 10 minutes to complete each. At the end of the twenty-minute testing session, the experimenter collected the tests and handed them to another experimenter who pretended to score them in another room. In fact, this experimenter used a randomizing procedure to determine group placement.

During phase 2, the first experimenter returned to the testing room and led subjects individually to one of three other testing sites where they were placed in teams of four. This experimenter told each subject that the

other participants had been placed in one of the groups according to how they scored on the initial tests. Furthermore, subjects were handed envelopes that described their performance on the pretest, as well as the performance of their teammates.

This procedure allowed for two manipulations. First, subjects were randomly assigned by gender to one of three group composition conditions: female token (one woman and three men), male token (one man and three women) and balanced (two men and two women). Second, the feedback that the dominant team members received about the tokens' pretest performance varied in three ways. The dominant members of token groups were told: 1) that the token performed very well on the pretests and was selected for the group because of his/her ability; 2) that the token performed very well on the pretests, but was selected for the team because a male/female was needed to complete the group; or 3) that the token performed adequately on the pretests and was selected because a male/female was needed to complete the group. All subjects, including tokens, were told that all non-token teammates performed very well on the pretests and were selected because of their ability. Furthermore, all subjects were told they performed very well and were selected because of their ability. The decision about

which feedback condition the token and group members received was random, with one third of each of the token conditions being in each feedback condition. These manipulations were not pilot tested because of the complexity of the design (additional subjects would be needed to fill every cell in all three designs, therefore completely duplicating the study as a whole. In effect, the present study served as a pilot test for future laboratory replications of research on tokenism. Careful attention, however, was given to the choice of these manipulations such that the selection conditions represented actual employment circumstances.

After subjects were placed in the appropriate testing site and had read their feedback, they were given basic instructions about the group task. They were told that both team and individual performance would be measured, and that they should try to solve the problem in the time allotted. No leader was designated. Each group was allowed 45 minutes to work on the task.

Upon completion of the task, subjects were asked to answer questions about the experience. Among these questions were manipulation checks. First, subjects were asked to estimate their performance on the creativity and intelligence tests on a 100-point scale. It was hypothesized that nominal tokens would rate their

performance lower than other group members. In addition, subjects rated two of their teammates pretest performance on a 100-point scale. Subjects were also asked why they thought they were in their particular group. It was hypothesized that nominal tokens would attribute their placement in the group to their sex more than to their ability.

The second set of measures the subjects completed was an evaluation of their performance, as well as that of two other group members. In the token conditions, nontoken subjects rated themselves, the token and one other group member. The tokens rated themselves and two teammembers. In the balanced condition, subjects rated themselves, a subject of the opposite sex and a subject of the same sex. This evaluation format differed somewhat from Crocker and McGraw's (1984) in order to obtain self-evaluations from tokens and non-tokens that could be meaningfully compared.

The third set of measures the subjects completed were the two scales of the JDI and the role strain measure. Finally, subjects were debriefed concerning the true nature of the study. Reactions and opinions about the study were solicited from the subjects, and questions were answered. All participants were given candy as a prize for building the best tower.

Analyses

The analyses were divided into three major sections in order to make meaningful comparisons between male and female tokens, and then to compare tokens to nontokens. Most of the dependent measures used in this study were developed specifically for these purposes. Therefore, preliminary psychometric information needed to be obtained in order to assess the reliability of the scales, and to determine whether there was an underlying factor structure among the rating scales. Without this preliminary psychometric information, use of the rating scales as adequate criteria would be questionable. The peer and self-performance appraisal forms and the role conflict/role ambiguity scale were subjected to factor and item analyses. Any reliable and meaningful dimensions derived from these analyses were used as criterion variables.

Depending on the number of subscales derived from the above analyses, a series of MANOVAs or ANOVAs were calculated to test several hypotheses. Three separate designs were needed to test the hypotheses, since the full design was not a complete factorial. Each design overlapped to some degree, but only nonredundant findings are discussed.

The first design was a 2 (sex of subject) by 3 (group composition: male token, female token, or balanced group) factorial that tested whether members of balanced groups were more successful than members of male token or female token groups. The second design was a 2 (sex of subject) by 3 (token selection condition) factorial, and was applied only to token subjects in the analysis. This design tested whether tokens selected because of their ability performed better than tokens selected because of their gender, and whether these differences extended to male as well as female tokens. The third design was a 2 (sex of subject) by 2 (type of subject: token or dominant) by 3 (token selection condition) factorial. This design tested whether tokens differed from dominant members among the types of selection conditions. This design did not include members of balanced groups.

Finally, a series of analyses tested the hypothesis that male dominant members' attitude toward women as managers moderated the effects of selection condition on tokens' success. Hierarchical multiple regression was used to predict peer and self-performance appraisals as well as role conflict and role ambiguity. Token selection condition was dummy coded and entered first into the equation, followed by the Crowne-Marlow Social Desirability composite score, then the WAMS composite

score. Finally the selection condition by WAMS score, an interaction term, was entered as a moderator variable. If the moderator variable added any significant variance to the prediction of the criteria, this would show that dominants' attitude affected tokens' success in the group. Examination of the beta weights would show whether traditional attitudes toward women managers cancels any positive effect of token selection. Composite scores on the Crowne-Marlow and WAMS were created by averaging these scores across the dominant team members for each female token. The composite scores were used in all analyses involving the WAMS and Crowne-Marlowe variables. This composite represented a group attitude.

Although it would have been desirable to use individual scores in separate analyses to determine whether a particular individual could make a difference for token success, problems with data collection precluded the possibility for conducting these analyses. The data on WAMS were collected at the beginning of the academic semester. The researcher asked that all students of General Psychology complete the WAMS and Crowne-Marlowe scales. Not all subjects attended class on the day of this data collection, and some were unable to complete the scales in the allotted time. Therefore,

not all subjects had usable data for these measures.

## Results

### Manipulation checks

Three types of checks were used to determine if subjects perceived the manipulations and believed the experiment's stated purpose.

The first check asked subjects to describe what they thought the experiment was about. This question was asked after subjects completed the Towers task. Responses indicating that subjects felt the study was about managerial teamwork, how creativity and intelligence affect team tasks, or any related response were coded as "okay." Responses indicating that the subject thought the study was about how males and females work together were coded as "questionable." If subjects felt the study was about how they reacted toward their teammates given the feedback about pretest results, their responses were coded as "not okay." Ninety-three percent of the responses were coded as "okay," indicating that subjects believed the stated purpose of the experiment. The fifteen subjects whose responses were "questionable" or "not okay" were removed from further analyses. These subjects perceived the true intent of the study and, therefore, may have provided biased ratings.

The second manipulation check was designed to

determine whether subjects believed the feedback given to them about their pretest performance. Subjects indicated on a scale of 1 to 100 how well they thought they performed on the Anagram and Creativity tasks. Analysis of variance indicated that males did not differ in their self-estimates from females on the anagram or creativity pretests, nor were any differences found between tokens, dominants or balanced members on either test. On the Anagram pretest, tokens who were selected for the group because of their gender, and who were described as less qualified than other team members, rated their pretest score as lower than did tokens in the other selection conditions, $F$ (2,43) = 3.29, $p$ = .047. This finding did not extend to self-ratings on the creativity pretest. Therefore, tokens described to their teammates as less qualified, viewed their anagram skills as being poor, but they did not give low estimates of their creativity skills. Table 1 presents means and standard deviations for these manipulation checks.

The third manipulation check assessed the degree to which subjects believed the feedback given to them about their teammates' pretest performance. Subjects were asked to rate on a scale of 1 to 100 how well their teammates performed on the pretests. Subjects rated two teammates' performance, the same two for whom they also

provided performance ratings. Each subject's score on this manipulation check was the average rating given to them by their peers. Analysis of variance on these ratings indicated that ratings did not differ among tokens, dominants or balanced group members. Overall, males' pretest ratings did not differ from females'. For tokens only, a two-way interaction emerged between sex of subject and token selection condition, $F$ (2,43) = 3.12, $p < .05$. As seen in Table 1, there was no appreciable difference between male and female tokens in the Qualified Normal (Qn) condition. Females in the Qualified Affirmative Action (Qaa) received the highest ratings. Males in the Qaa condition received ratings similar to those in the Qn condition. Males in the Less Qualified Affirmative Action (LQaa) condition received high ratings, but females in this condition received very low ratings (See Table 1). This interaction was complex and partially supported the expectation that both male and female subjects in the Qn and Qaa would receive high ratings, whereas female subjects in the LQaa condition would receive low ratings. That female tokens in the Qaa condition received the highest ratings was unexpected. However, no specific hypotheses were made concerning the ratings of tokens in this condition. Although the manipulation check did not indicate that subjects

perceived or believed the feedback given to them concerning their token teammate's pretest performance and reason for being in the group, the analysis continued. Subjects may have based their ratings on their teammates' actual team performance instead of the feedback given to them before the task began.

Factor Analyses

As a preliminary step to data analysis, the rating scales were factor analyzed in order to determine if meaningful subscales existed, and to reduce the data set to a smaller subset that accounted for sufficient variance in the total scales. Subscale scores on these dimensions were used as dependent measures.

Peer Performance-Rating Factor Analyses

For the performance appraisal form, twenty-one items designed to measure several aspects of the team members' performance were completed by each subject. Tokens were rated by all three team members, dominants were rated by one to two team members, and balanced subjects were rated by two team members. Therefore all subjects were rated at least once. Principal axes factor analysis (PAF) with Varimax rotation was used to factor analyze the first set of ratings completed for each subject. As a crude generalization check, PAF was used to factor analyze the

second set of ratings completed for each subject, if provided. It should be noted that for those subjects who had more than one rating, the assignment of first, second or third rating was random. There were not enough subjects with three ratings to warrant factor analysis of the third rating. It was assumed that if the factor structure of the first two scales were highly similar, then generalizations could reasonably be made to the third rating.

For both the first and second peer ratings, PAF yielded four-factor solutions[1]. The percentage of variance explained by the four factors was 45.7 for the first set of rating scales and 46.8 for the second. After Varimax rotation, it was determined that in both analyses, the fourth factor was a one-item scale that accounted for less than 3 percent of the total scale variance. The factor matrices for the first and second peer-ratings are given in Table 3.

The PAF was rerun specifying a three-factor solution. The percentage of variance in the first set of ratings accounted for by the three factors was 43.1 percent. Similarly, the percentage of variance index for the second set of rating scales was 46.7 percent. The factor loading matrices of both scales are given in Table 4.

Item Analyses of Peer-rating Scales

Item analyses were conducted to determine if the three subscales had sufficient reliability to warrant treating them as dimensions of the dependent variable. Subscales were created by combining items that loaded high (.40 or higher) on a factor in the analyses of the first and second peer-ratings. Subscale 1 was composed of items 4, 6, 8, 10, 13, 15, 16, 17, and 21. Subscale 2 was composed of items 1, 3, 5, 7, 9, 11, 12, 14, and 18. Subscale 3 was composed of items 2, 19, and 20. In all cases, the subscales were created by giving unit weights to the variables. This method of creating subscales is the most conceptually simple (Rummel, 1970). The results of the item analysis showed that coefficient alpha, an index of internal consistency, for the entire first set of peer-rating scales was equal to .87[2]. The alphas for the three subscales were as follows: Subscale 1, alpha = .86; subscale 2, alpha = .86. The bivariate correlation between items 2 and 20 is -.56; between items 2 and 19 is .006; and between items 19 and 20 is .11. These three items, 2, 19 and 20, comprised the third subscale. In regard to the second peer-rating, coefficient alpha for the total scale was .89. The alphas for the three subscales were as follows: subscale 1, alpha = .87; subscale 2, alpha = .87; and again, the bivariate

correlation between items 2 and 20, which composed the third subscale was equal to -.58.

The results of the item analyses showed that each of the subscales had sufficient internal reliability to warrant use as dependent measures. The item analyses also showed that for both sets of ratings, the removal of items 19 and 21 would improve the reliability of the scales. Examination of the interitem correlation matrix indicated that these items, for the most part, were not highly related to other items, nor were they related to each other (see Tables 5 and 6). It was decided to drop these items from further analyses.

Self-rating Factor Analyses

PAF and follow-up item analyses were performed on the self-ratings. The PAF yielded a six-factor solution as determined by a scree test. These six factors accounted for 46.8 percent of the total scale variance. The scree test indicated that the first three factors accounted for the most variance, 38 percent. After varimax rotation, substantial crossloading of variables on the factors still existed, and the six dimensions were still difficult to interpret; therefore, a second analysis was conducted with only three factors specified. The three-factor solution is presented in Table 7. Examination of factor loadings indicated that three items

(14, 15 and 16) crossloaded substantially (greater than .40) on two factors. Furthermore, interpretation of the factors was difficult, and did not closely correspond to the factor structure of the peer-ratings.

Self-rating Item Analyses

The item analyses of the self-ratings yielded an internal consistency estimate for the total scale of .82. Coefficient alpha estimates were .81 for the first subscale, .63 for the second scale, and .59 for the third, three-item scale. The item-total correlations indicated that item 21 did not correlate highly with the first subscale, and the alpha estimate would be improved by its removal. Furthermore, items 2 and 20 did not correlate highly with the second subscale, and alpha would improve with their removal. Finally, item 19 did not correlate highly with the third subscale, and its alpha estimate would be improved if this item were removed. Items 2 and 20 were retained because they composed a unique, reliable scale in the peer ratings. Items 19 and 21 were deleted from further analyses. Table 8 presents the interitem correlations for the entire scale.

Factor Analyses of the Role Stress Measures

The role conflict/role ambiguity scale used in this

study was a modification of the House, Schuler and Levanoni (1983) scale. A decision was made to factor analyze the scale to determine if the same factor structure was consistent with the original House et al. scale. A principle axes factor analysis with multiple regression estimates of communality was conducted (see Table 2). The scree test indicated a 5-factor solution that accounted for 56.1 percent of the total scale variance. The varimax rotation produced crossloadings on three variables, and the factors were difficult to interpret (see Table 9). Because the scale was originally found to have only 2 factors when House et al. conducted their factor analyses, a second analysis was conducted with only 2 factors specified. The two factors accounted for 31.2 percent of the total scale variance. Varimax rotation produced simple structure, except for item 9 which crossloaded on both factors. The pattern of factor loadings did not show complete correspondence with the original factor structure. In fact, Table 10 shows that several items did not load highly on either factor.

Item Analyses of the Role Stress Scales

The internal consistency estimate for the total role conflict/role ambiguity scale was alpha = .85; the alpha estimate of the first subscale was also .85. This

estimate for the second subscale was .70. The pattern of interitem correlations and item-total correlations for both scales showed that no items tended to correlate poorly with the rest of the scale (see Table 11 for interitem correlations). All items were retained for future analyses.

Multivariate Analyses of Variance

Although the subscales derived from PAF were sufficiently reliable, the internal consistencies of the total scales were better than any of the respective subscales. Furthermore, the pattern of loadings for sets of subscales indicated a substantial level of crossloading, especially for the peer and self-ratings, using a criterion of $r = .40$ as a loading cutoff. Therefore, it was decided to use the total scales as dependent variables in a multivariate analysis of variance that protected the experimentwise error rate.

In the first design, sex of subject was crossed with group composition (female token, male token or balanced group). The dependent measures were the average of the peer-ratings (obtained by averaging across the three sets of ratings, then averaging across the nineteen items), the average of the self-ratings (over 19 items), the JDI work index, the JDI coworker index, and the average of

the total role conflict/role ambiguity measure (over 21 items). The 2 X 3 MANOVA yielded a marginal main effect for sex as indicated by the Wilks Lambda criterion (lambda = .95), $F(5,198) = 2.19$ $p < .057$. Follow up univariate ANOVAs showed that males and females differed on peer ratings only, such that males were rated more positively than females ($M$ males = 4.95, $M$ females = 4.66), $p = .03$. The MANOVA produced no main effect for group composition, nor a significant interaction of sex by group composition.

The second design analyzed differences between male and female tokens on the basis of selection condition (i.e. if they were qualified and selected for the group because of their ability [Qualified Normal- Qn], qualified, but selected because of their gender [Qualified Affirmative Action- Qaa] or less qualified, but chosen on the basis of their gender [Less Qualified Affirmative Action, LQaa]). This 2 (sex of subject) X 3 (selection condition) MANOVA yielded no main effect for sex or type of token and no interaction.

The third design explored possible differences between males and females, tokens and dominants, and token selection condition (Qn, Qaa, LQaa). This 2 X 2 X 3 MANOVA yielded no significant three- or two-way interactions, no main effect for subject type, token or

dominant, and no main effect for sex. It, however, revealed a main effect for type of token. The Wilk's lambda criterion was .86, $F(10,322) = 2.43$, $p < .008$. Examination of univariate $F$-tests on the dependent measures yielded significant differences between token types on the JDI coworker scale, $F\ (2,165) = 8.14$, $p < .0001$, $\hat{\omega}^2 = .08$. The means indicated that persons in groups in which the token was Qn ($M = 47.18$) were more satisfied with their coworkers than were members of groups in which the token was chosen for his or her gender (Qaa $M = 44.88$; LQaa, $M = 44.86$).

Marginally significant differences were found between token types on the JDI Work index $F(2,165) = 2.95$, $p < .055$, $\hat{\omega}^2 = .001$. Comparison of the means revealed that subjects in the Qn condition were more satisfied with their work ($M = 36.60$) than were subjects in the LQaa condition ($M = 35.11$), who were more satisfied than subjects in the Qaa condition ($M = 34.78$). This comparison was done by inspecting the means. A more formal post hoc analysis was not conducted because in this and subsequent analyses, no consistent pattern of means emerged on factors with three levels. Therefore mean differences are described, but no weight is given to them in the discussion of the results.

Back to the Drawing Board: Oblique Rotations

Due to the generally non-significant findings in these MANOVAs, factor analyis of the peer and self-ratings using an oblique rotation solution was undertaken. An oblique solution was used in order to obtain better simple structure than was found in the orthogonal solution. A moderate degree of intercorrelation between the factors was acceptable because there was no theoretical or conceptual reason to believe that the factors should be uncorrelated.

The delta value used in the analysis determined the degree to which the factors become intercorrelated. This value was set at zero in the SPSSX program, which allowed for moderate intercorrelation. A three-factor solution was found in all three analyses (first and second peer ratings and self-rating). The factor intercorrelations are found in Table 12. In the first set of peer-rating scales, the three-factor solution accounted for 46.9 percent of the total scale variance. Loadings on the factor pattern matrix were used to interpret the factors. Table 13 shows the pattern matrix for the first rating. The first factor was interpreted as interpersonal and teamwork orientation, and accounted for 39 percent of the common scale variance (but only 18 percent of the total variance). The second factor, which accounted for 16 percent of the common variance and 7 percent of the total

variance, was indicative of sex-appropriate behavior. The third factor was interpreted as task and leadership-oriented, and accounted for 36 percent of the common variance and 17 percent of the total variance. This same factor structure was found in the second peer-ratings as well as the self-ratings (see Table 13).

Since both sets of peer ratings had similar factor structures, a composite set of scale scores was created by averaging all three sets of peer ratings. The first scale was derived by averaging items loading high on the first factor with a correlation of .40 or greater. The items were given unit weights to create the scale. Unit or raw score weights, rather than factor scores were used because of the empirical nature of the research. Furthermore, this factor weighting scheme is listed as a common one by Rummel (1970). There was no theoretical or conceptual reason to use factor scores. Similarly, the second and third scales were created by averaging items loading high on the second and third factors, respectively. Scales on the self-ratings were obtained by combining items that loaded .40 or greater on a factor. Again, the items were given unit weights.

Internal consistency estimates were obtained for each of the subscales of the peer and self-ratings. The alpha coefficient for the first subscale of the peer

rating, averaged over all three ratings was .88. The third subscale was .89 (alpha was not estimated for the second subscale because it was a two-item scale; the bivariate correlation between item 2 and 20 was $\underline{r}$ = .62). The first subscale of the self-ratings had an alpha coefficient of .80, that for the third scale was estimated to be .82 (again alpha was not estimated for the second, two-item scale; the bivariate $\underline{r}$ = .60).

To reiterate, the factor analysis of the peer-ratings yielded three dimensions: Interpersonal/Team orientation, Gender Specificity and Task/Leadership Orientation. Factor analysis of the self-ratings also produced three similar dimensions. Table 14 summarizes the factors.

Although statistical orthogonality of the role conflict and role ambiguity scales has never been formerly or theoretically stated, an oblique factor solution was not attempted, since neither the Rizzo, House and Lirtzman (1971) scale nor the House, Schuler and Levanoni (1983) scale were factor analyzed in this way. This decision not to attempt an oblique rotation was also made to avoid interpretive complexities. The scale interpretations made by House and his colleagues were based on orthogonal factors; it was beyond the scope of this investigation to produce theoretical

justification for oblique factors. Instead two scales, role conflict and role ambiguity were created by combining items that were originally specified as belonging to the respective scales. The role ambiguity scale was created by averaging items 1 to 11, and the role conflict scale was created by averaging items 12 to 21. The alpha estimates of the two scales were .83 and .76 respectively (see Table 15 for a description of the scales).

Analysis of Variance

Using these scale scores now as dependent measures (including the JDI work and coworker scales), a MANOVA was not technically feasible due to the inadequate sample size qualification[3]. Given this restriction, separate univariate ANOVAs were performed on each dependent variable. A protected F with an alpha level of $p < .001$ was used to insure an experiment-wise alpha of .05.

The three designs described earlier were used to examine main effects and interactions for each of the dependent variables. The results of the ten Sex X Group Composition ANOVAs are presented in Table 16. Because the different treatment cells were unbalanced with respect to sample size, a regression approach was used to partition sums of squares. This resulted in a

nonorthogonal analysis of variance. This approach assessed the main effect or interaction terms of interest while partialing out or controlling for every other term in the model, producing a conservative test of significant (SPSS, 1983). Due to the lengthy set of analyses, only significant findings are reported in the text.

For the interpersonal/teamwork dimension of the peer rating, no main effects of sex or group composition were found, nor was there any interaction. The Gender dimension of the peer-ratings yielded a main effect for sex, $F(1,202) = 283.97$, $p < .0001$ $\hat{\omega}^2 = .58$. Examination of the means (Table 17) indicated that males were rated as behaving in a more masculine way than women, and women were rated as behaving in a more feminine way. In other words, men and women were perceived as acting in gender congruent ways. There was no main effect for group composition, or interaction of sex and group composition.

For the task/leadership dimension, a marginal effect for sex was found, $F(1,202) = 10.04$, $p < .002$, $\hat{\omega}^2 = .04$. Examination of the means indicated that males were rated higher on this dimension than females (see Table 17). No significant main effects or interaction were found on the interpersonal/teamwork dimension of the

self-ratings. A main effect for sex was found on the Gender self-rating scale. Subjects viewed themselves as behaving in gender congruent ways. For the task/leadership dimension of the self-rating, no main effects or interactions were found. Furthermore, no main effects or interactions were found on the JDI work or JDI coworker scales. No main effects or interactions were found on the role ambiguity scale; a marginally significant effect was found for sex on the role conflict scale, $F(1,224) = 5.86$, $p < .02$, $\hat{\omega}^2 = .02$. Examination of the means (Table 17) showed that females experienced less role conflict than males.

The sex by token type design examined differences between male and female tokens, and differences in the selection method used to choose each token. Table 18 provides the ANOVA results for all dependent measures. The interpersonal/teamwork dimension of the peer-ratings produced a marginal main effect for sex, $F(1,39) = .70$ $p < .036$. Examination of the means (Table 19) indicated that while both sexes were rated high on this dimension, males were rated higher. This effect, though, is redundant with the sex effect found in the larger, sex by group composition design. Males and females used in this analysis represent a subset of that design. Not

surprisingly, male and female tokens were rated as acting more masculine and feminine respectively on the Gender dimension, $F(1,39) = 120.19$, $p < .0001$, $\hat{\omega}^2 = .73$. Therefore, this difference between males and females in general was also found with male and female tokens. Similarly, a marginal main effect for sex was found on the task/leadership dimension, $F(1,39) = 7.26$, $p < .01$, $\hat{\omega}^2 = .12$, that also shows that male tokens were rated higher on this dimension than females, as was found for the total sample (see Table 19).

The results of the three scales of the self-ratings reflected the findings of the first design. No significant main effects or interaction were found on the interpersonal/teamwork dimension. Male and female tokens rated themselves as acting in gender congruent terms as indicated by the main effect for sex on the gender dimension, $F(1,39) = 69.12$, $p < .0001$, $\hat{\omega}^2 = .50$. No main effects or interaction were found on the task/leadership dimension. Furthermore, no significant effects were found on the JDI work and coworker scales, or on the role conflict and role ambiguity scales.

The third and final design examined differences on the dependent measures on the basis of sex, token or dominant status and the type of selection condition the token experienced (see Table 20 a and b for a summary of

the analyses of variance). Although this analysis represents a subset of the first sex by group composition design, it allows for specific interactions between type of subject (token or dominant), sex, and selection condition to be examined. Main effects of sex and selection condition, as well as the sex X token type interaction are redundant with the previous sex X token type design. Table 21 a and b presents the means and standard deviations of this analysis.

The interpersonal/teamwork dimension of the peer-ratings yielded no main effects or interaction. The redundant sex main effect for the Gender dimension is evident. A marginal effect for sex was found on the task/leadership dimension. As with previous designs, the means indicated that both token and dominant males were rated higher on this dimension than token or dominant females, $\underline{F}(1,165) = 5.42$, $\underline{p} < .021$, $\hat{\omega}^2 = .02$. Results of the three scales of the self-ratings reflected the findings shown in the previous designs. Main effects for sex were found on the gender dimension, and no other main effects or interactions were found, with one exception. A marginal effect for subject type (token or dominant) was found on the task/leadership dimension, $\underline{F}(1,165) = 8.34$, $\underline{p} < .004$, $\hat{\omega}^2 = .04$. Examination of the means indicated that male and female dominants

were rated higher on this dimension than were male and female tokens.

No significant main effects or interactions were found on the interpersonal/teamwork dimension of the self-ratings. The gender scale of the self-ratings indicated, as expected, that male tokens and dominants perceived themselves as behaving in a more masculine way, $F(1,165) = 187.95$, $p < .0001$, $\hat{\omega}^2 = .51$. A marginal effect for type of subject was found on the task/leadership dimension of the self-rating, $F(1,165) = 8.34$, $p < .004$, $\hat{\omega}^2 = .04$. Examination of the means indicated that dominants perceived themselves as being more task-leadership-oriented than tokens.

No significant main effects or interactions were found on the JDI Work index. Two marginal effects were found on the JDI Coworker index. A main effect for sex was found, $F(1,165) = 4.23$, $p < .041$, $\hat{\omega}^2 = .02$, such that females were more satisfied with their teammates than were males. Furthermore, a marginal token type by subject type interaction was found, $F(2,165) = 4.05$, $p < .019$, $\hat{\omega}^2 = .02$. The pattern of means indicated that for dominants, those who were in groups where the the token was selected under the Qualified Normal condition were very satisfied with their

teammates, those selected under the Qualified Affirmative Action condition were the least satisfied, and those selected under the Less Qualified condition were moderately satisfied. Conversely, for tokens, those selected under the Qn and LQaa conditions were moderately satisfied with their teammates, while those selected under the Qaa condition were most satisfied (see Figure 1 for a graphic depiction).

A marginal effect for sex was found on the Role Conflict scale, $\underline{F}(1,83) = 4.13$, $\underline{p} < .04$, $\hat{\omega}^2 = .02$. This effect reflects the same effect shown in the Sex by Group composition design. Females experienced less role conflict than males. No main effects of subject type or token selection were found, nor were any interactions significant. No main effects were found on the Role Ambiguity scale. Table 20b shows that a marginally significant Sex X Subject type interaction was found, $\underline{F}(1,183) = 7.02$, $\underline{p} < .009$. Figure 2 shows that for males, type of subject, token or dominant, did not significantly change mean scores on the role ambiguity scale. Females, on the other hand, experienced high role ambiguity when they were tokens and low levels when they were dominants. No other significant interactions were found.

Sex Role Stereotyping

Hypothesis 2 stated that the rated performance of female tokens would be affected by the degree of sex role stereotyping by her male coworkers. Tokens working in groups in which the males had stereotypical attitudes toward women as managers would receive lower performance ratings than females working with males with more contemporary attitudes. In terms of the analysis, WAMS scores were examined to determine whether they moderated the hypothesized relationship between token selection condition and work outcomes (performance appraisal). It was expected that if male coworkers had stereotypical attitudes toward women managers, then female tokens would receive low ratings despite the purpose of their selection. If males' had contemporary attitudes, then female tokens would receive performance ratings in accordance with their perceived selection.

Since social desirability has been shown to be positively correlated with scores on the WAMS, social desirability, as measured by the Crowne-Marlowe scale, was partialed out of the WAMS scores. A hierarchical multiple regression equation was used to predict performance ratings and self-ratings. Token selection condition (Qualified Normal, Qualified Affirmative Action, or Less Qualified Affirmative Action) was dummy

coded and entered on the first step, followed by the Crowne-Marlowe composite scores, and then WAMS composite scores. Composite scores on both the Crowne-Marlowe and WAMS were created by averaging the scores of the female tokens' teammates on these measures. Thus, for token subject "A," her composite WAMS score would be the average of her teammates' WAMS scores. Not all WAMS scores were available for every subject, so separate analyses could not be performed on each teammate's WAMS score. The composite score represented the average of one, two or three teammates. Finally, the interaction of the composite WAMS score and the token selection condition (a dummy variable) was entered as a possible moderator variable. The zero-order correlations between each of these variables and the criterion variables are presented in Table 22.

Interestingly, it was found in the present sample that WAMS and Crowne-Marlowe scores were negatively related, indicating that subjects with more positive attitudes toward female managers were less subject to social desirability. This negative correlation, however, was not statistically significant. A follow-up analysis was conducted to determine if this negative correlation held only for the composite scores computed for female tokens. WAMS and Crowne-Marlowe scores were calculated

for all tokens and dominants, and these scores were correlated. A scatterplot of the data showed that the bivariate distribution was homoscedastic, and without severe outliers. The Pearson product-moment correlation was computed to be $r = -.25$, $p < .001$, $df = 141$. Therefore, the negative correlation found in the composite scores was not an artifact of the averaging technique, and generalized to a larger sample.

The results of the hierarchical regression analyses are presented in Tables 23 and 24. The results showed that neither token selection condition, Crowne-Marlowe, nor WAMS reliably predicted peer or self-ratings. Moreover, the interaction of WAMS and selection condition did not predict peer or self-ratings.

Follow-Up Analyses

Since the hypothesis that token selection would affect the dependent measures was not supported, a follow-up analysis was conducted to explore possible reasons for these findings. A possible explanation is that subjects may have differed in their attitudes toward female managers in such a way that more contemporary attitudes could have offset any effect due to token selection. Random assignment of subjects to conditions should have rendered the distribution of attitudes equal

across groups. Nonetheless, since the data were available, ANOVAs on the Sex X Selection Condition and Sex X Selection Condition X Subject Type designs were conducted to determine group differences in WAMS scores. Again, a nonorthogonal analysis of variance was used, since cell sizes were unequal.

As expected, males differed reliably from female tokens in their attitudes as determined by the Sex by Token Type design, $F(1,137) = 41.05$, $p < .0001$, $\hat{\omega}^2 = .21$. This sex effect was not replicated in the Sex X Selection Condition design for tokens only (see Table 25 for means). Neither analysis lent support to the suggested hypothesis that subjects differed in their attitudes as a function of token selection condition. Therefore, uneven distribution of WAMS scores could not account for the lack of findings in this study.

Another possible reason for the nonsignificant findings in the WAMS analysis is a function of low statistical power. Since only female tokens were used in the analysis, the sample size was very small (n=25). A low subject-to-predictor ratio tends to overestimate effect sizes ($R^2$), but the shrinkage formula to correct for sample size reduced these effects to near zero. Furthermore, using a dummy coding scheme to enter token selection condition into the regression equation caused a

severe problem when the dummy coded variables were also used to create a moderator variable. When the dummy variable (coded -1, 0, 1, cf. Overall and Klett, 1983) was multiplied by the continuous variable (composite WAMS score), the resulting correlation between the moderator variable and the dummy variable was artificially very high (e.g. $\underline{r}$ = .99). When the dummy variable was entered first into the hierarchical regression equation, there was no unique variance left in the moderator variable to enter, so this variable never passed the tolerance level to enter into the equation. Changing the dummy coding scheme to just 0 and 1 decreased the correlation between the dummy variable and the multiplicative variable such that the latter had enough unique variance to enter, but the bivariate r between the two was still extremely high (e.g. $\underline{r}$ = .97), leaving only a small amount of unique variance in the multiplicative variable. Due to the combination of these problems with the hierarchical analysis, a simple Treatment by Blocks design was used in an analysis of variance. The composite WAMS score was divided into three approximately equal groups representing low, medium and high composite WAMS scores, where a high score referred to contemporary attitude toward women managers. The design was a 3 (trichotomized composite WAMS) by 3

(Token Selection Condition) Analysis of Variance for the dependent variable of peer rating. The dependent variable was altered somewhat in an attempt to create a variable with greater variance. Since the Interpersonal/Teamwork dimension and the Task/Leadership dimension were highly correlated ($r$ = .88), these two dimension were combined to create a unitary dimension.

The analysis of variance yielded a main effect for WAMS, $F(2,16) = 3.86$, $p < .04$, $\hat{\omega}^2 = .02$. Inspection of the means indicated that a female token in a group in which males had moderate attitudes toward women managers received the highest performance ratings ($M$ = 5.10), followed by tokens in teams in which the males had conservative attitudes ($M$ = 4.76), which was followed by tokens in groups in which the males had contemporary attitudes ($M$ = 4.47). There was no main effect for type of selection condition, nor was any interaction found between selection condition and the trichotomized WAMS score. The unexpected pattern of means in the WAMS trichotomy was not found in any further analyses using self-ratings or role conflict/role ambiguity as dependent measures. This suggested that this main effect may have been an alpha error.

## Discussion

To summarize the findings of this study, the hypotheses were generally not supported. Looking at the general pattern of results, not only did the selection condition of tokens not affect token performance and other criteria, but tokens did not differ from non-tokens. Furthermore, the sex role attitude of male dominants did not appear to affect the female tokens' performance. Although apparently spurious main effects and interactions were found, no consistency in these findings emerged; nor was any meaningful interpretation forthcoming. In all, two general, consistent effects were found that merit discussion.

As evidenced by the Gender Specificity scales of both the peer and self-rating forms, subjects clearly perceived their own and their teammates' performance to be gender congruent. That is, males were perceived to be acting in a masculine manner, females in a feminine manner. Second, males were rated higher on the task/leadership scale of both rating scales, which indicated that males assumed a more leadership-oriented role in the group. Because the Gender Specificity and Task/Leadership dimensions on both rating forms were correlated (see Table 26 for intercorrelations among

dependent variables), it was not surprising that perceptions of masculine behavior were related to perceptions of leadership. Schein's (1973, 1975) evidence that managerial behavior is perceived as masculine behavior helps to explain why males were rated higher on this aspect of team performance. The Interpersonal/Teamwork dimension of performance was not highly related to perceptions of femininity/masculinity, which suggested the masculine-managerial relationship held only for the task-oriented/leadership aspect of team management.

Another possible explanation for the sex difference in the Task/Leadership dimension comes from a model of gender bias in performance ratings (Lahey, Stockdale, Downey & Astley, 1986). This model (depicted in Figure 3) suggests that the amount of information a rater has about an individual will affect performance ratings only when the information differs among ratees. That is, if a rater has little information about multiple ratees, he/she will base the ratings on preconceived notions or stereotypes about the ratees. Women are rated lower than men on masculine (managerial) tasks because of the stereotype that men make better managers. If the rater has a great deal of information about the ratees, but there is no qualitative difference in this information,

raters may still rely on stereotypes to make personnel decisions about ratees. Only when the information about ratees differs in some job relevant way will raters make veridical judgments. A review of recent literature generally supported this model (Lahey et al.) Furthermore, other researchers (c.f., Heilman, 1984; Tosi & Einbender, 1986) have also suggested, and shown support for, the notion that job relevant information provided to raters ameliorates possible biases.

In regard to the present study, there are several indications that the model, if it can be assumed to be plausible, may help to explain this sex difference. In order for the proposed model to fit, evidence must exist that either little information was available to raters, or that the information that was available did not differentiate among ratees. It did not seem plausible that raters had little information about ratees, because subjects worked together throughout the entire task. Therefore, the information about ratees must have been about the same, given the design of the study. There was no way to directly tell whether everyone performed at the same level, but indirect measures suggested a general high performance in all teams. Examination of the means of peer and self-performance ratings, the JDI subscales, and the role conflict/role ambiguity scales suggested

that, on the whole, subjects performed well, were satisfied with the task, and did not experience much role conflict or role ambiguity. In fact, it appeared as if subjects perceived the task as more of a game than a managerial work sample. When team members were rating their own and others' performance, they did not have much information to differentiate among teammates. Therefore, they may have resorted to stereotypes and preconceived notions. Hence, males were rated as more masculine and task/leadership-oriented than were females.

Given the overall findings of this study, serious questions can be raised about the efficacy of the performance appraisal in measuring the actual performance of team members. Perhaps tokens did assume an inferior status in the group, or the selection condition did affect token performance, but the measures were too insensitive to detect these performance differences. More objective measures of performance such as ratings by judges may have picked up these effects.. Such objectivitiy in measurement was not only impossible to obtain[4], but was undesirable for the study's purposes. As stated in the Methods chapter, the important criterion for tokenism was the subjective evaluation of the token's teammates. In many organizations, important personnel decisions are based on subjective evaluations,

regardless of their veridicality. Therefore, a poor evaluation of the token by his or her peers, may have important organizational consequences.

That the performance appraisal detected sex-of-subject differences on two out of the three subscales gives some credence to the suggestion that the performance appraisal was validly measuring people's perception of group performance. The Towers task was described to the subjects as a managerial team task. The higher evaluations given to men, whether or not they reflected an actual performance difference, suggest that team members' stereotypes were operating under the assumption of a management exercise. That is, males were perceived, in accord with the stereotypical norm, to be better "managers."

It was originally suggested that such sex role stereotyping would be more salient for female tokens, and would result in lower expectations and appraisals of their performance. Why did this study not confirm this hypothesis? To answer this question, problems with the study need to be addressed.

Manipulation checks indicated that, although most subjects believed in the presumed purpose of the study, they did not attend to the feedback given to them about their own and teammates' pretest performance. It was

hypothesized that information suggesting that a teammate had performed only adequately on the pretest, but selected because of their gender, would result in lower estimates of that teammate's pretest performance. This difference in pretest estimates among teammates did not occur. Subjects either did not believe the feedback given to them, or they paid no attention to it, and based their judgments on the actual team performance. It is also possible that subjects could have discussed their feedback with their team members while they were confined and unobserved in the experimental setting. This may have eliminated any effect of the feedback on their expectations for team performance. This possibility is merely speculation, however, since subjects, anxious to leave the experimental setting, were generally unwilling to talk abut the study after the debriefing period.

The Towers task was chosen because it had been shown to be an appropriate exercise in which to demonstrate managerial functions. However, past use of the task in management seminars had been with experienced managers. Therefore, the issues raised in the exercise were highly salient to the participants. The current sample consisted primarily of undergraduate freshman, most of whom had not had much experience in management. Hence the participants may not have paid attention to the

managerial processes, but focused on the game-like features of the task. Ratings of task performance and satisfaction were high, while those of role conflict/role ambiguity were low. If subjects perceived the task to be a game, they may not have felt the consequences were very serious. Therefore, they may not have cared much how their teammates were performing, Or, they were having such a good time that problems with tokens did not seem to matter.

This conceptualization leads to a new hypothesis about tokenism that can be tested with further research. The present study sought to determine if team members' perceptions in regard to token selection would affect tokens' subsequent performance. This new conceptualization suggests that performance of the group in the beginning of a job affects later attributions of tokenism. For example, if team performance is high, team members have no reason to worry about the performance of the token. She is not bringing the team down. On the other hand, if team performance is low, then team members may try to attribute the low performance to an external source, the token. Past research on attribution processes (e.g. Deaux, 1976; Feather & Simon, 1973) suggested that males have higher expectations for success than females. If they fail at a task, they make an

external attribution for the failure. Females, however, hold low expectations for success. If they fail, it is consistent with their expectations, and they make an internal attribution for their failure. Future research should address, as depicted in Figure 4, whether male dominants will make an external attribution to the token if the team should fail, and if female dominants will make an internal attribution-- it was their own fault-- if the team should fail.

Statistical problems also plagued this study's findings. Problems with obtaining the correct number of males and females for each data collection session, having subjects complete the forms correctly, and getting all WAMS and Crowne-Marlowe scale information for subjects resulted in unequal sample sizes in some analyses. The uneven distribution of cell sizes resulted in non-orthogonal variables. The necessary non-orthogonal statistical analyses (e.g. regression approach) were less powerful than conventional analyses, due to the fewer degrees of freedom in the residual term of these analyses. Examination of mean differences on many of the measures, however, indicated that not even the direction of the means was consistent with the hypotheses. Hence, given adequate sample size to account for the conservative analyses, it appears that the

hypothesized findings would still not have been realized.

That tokens did not show any difference in their group success from dominants or balanced members is an important finding if the effect is not a Type II error. Past theories of tokenism (cf., Kanter, 1977; Laws, 1975) have heavily stressed the disadvantages that tokens (especially female tokens) must overcome in order to succeed in the workplace. The empirical evidence to support these theories, however, has been scant and not particulary rigorous. Case studies (e.g. Wolman & Frank, 1975) have provided superficial support for these theories, but many factors that may affect token performance have often gone unchecked. For example, case and field studies have not controlled for initial ability differences between tokens and dominants, nor have social status differences between males and females been held constant.

A recent investigation (Alexander & Thoits, 1985) noted that many of these uncontrolled factors must be examined in order to better refine the theory of tokenism. (They were referring to Kanter's, 1977, theory.) These researchers examined GPA differences across several departments of a university that differed

in terms of proportional representation of men and women. They controlled for initial ability differences (operationalized as SAT scores) and departmental difficulty level (defined by average student GPA) by treating these factors as covariates in a multiple regression analysis. They found that female tokens tended to out-perform male dominants, and that male tokens out-performed female dominants. However, comparisons of female tokens to females in balanced departments (controlling for departmental difficulty) revealed that the tokens fared less well. Male tokens and dominants performed equally well.

The findings of Alexander and Thoits (1985) are interesting, and may help shed light on the findings of the present study. Both male and female tokens performed better than their opposite-sexed, dominant classmates. This finding contradicts Kanter's (1977a, b) theory. In the present study, no effect of proportional representation was found, which is also counterintuitive. Perhaps studies such as these, that afford tighter experimental control of the factors affecting token performance, are revealing that numerical proportions do not affect performance or general success.

In recent years, there appears to have been a trend in Industrial and Organizational Psychology for research

to be conducted in field and natural work settings instead of contrived laboratory settings. Berkowitz and Donnerstein (1982) noted that, especially in the fields of I/O and Social Psychology, studies conducted with "real" people in "real" settings were deemed as having greater ecological validity. Ecological validity, then, became equated with external validity, or generalizability. Berkowitz and Donnerstein, however, stated that the assumed congruence of ecological validity and external validity was an empirical matter that had often been ignored (cf. Dipboye & Flanagan, 1979). Furthermore, these researchers and others (cf. Mook, 1983) have argued that laboratory studies have an important and necessary place in all disciplines of psychology. In order to examine fundamental principles or mediational and causal processes, the control afforded by laboratory studies was not surpassed by the "realness" of field studies.

It was in this spirit that the present study was initiated. The ability to control the perceptions of team members, as well as the group composition, would have allowed for preliminary causal statements to be made. Future research in naturalistic settings could have followed in order to determine whether these principles also operate in field settings, but the

fundamentals were to be set in the laboratory. To generalize the results, no single study, laboratory or field, would suffice. Berkowitz and Donnerstein (1982) claimed (as did Mook, 1983) that generalizability was a function of how subjects reacted to the demands of the situation. That is:

> The meaning the subjects assign to the situation they are in and the behavior they are carrying out plays a greater part in determining the generalizability of an experiment's outcome than does the sample's demographic representativeness or the setting's surface realism (Berkowitz & Donnerstein, 1982, p. 249).

What these authors suggest is that the merit of laboratory studies lay in their ability to closely examine psychological processes that are not environmentally context-dependent. The environment for tokenism, however, appears to include cognizance of quota systems and Affirmative Action, of reverse discrimination, and of being a token. These issues could not be easily brought out in the laboratory. Subjects needed to be aware of these processes, and perhaps should have had some experience in settings where these issues were important. It is quite possible that freshman students in general psychology did not have such

experience.

In regard to the experience of tokenism, it is quite possible that even if subjects had prior experience in token situations, the laboratory study did not adequately recreate this process. First, when subjects completed the pretests, the ratio of males to females was balanced. Therefore nobody initially perceived a numerically skewed group composition. Second, when tokens were assigned to teams, they were told that they performed very well on the pretests, and assigned to the team because of their ability. Tokens needed time to overcome this prior information and respond to possible opposing expectations by their teammates. The forty-five minute task experience did not appear to be of sufficient duration to allow these processes to emerge. Combined with the inexperience of the subjects and the time limitations of the study, the laboratoy did not appear to be adequate for studying the problem of tokenism.

The problem with the present study was not that it was a laboratory study per se; laboratory studies can be important in examining many psychological processes. However, because of the contrived nature of the task, subjects did not assign much meaning to the experience. This lack of importance seemed to be reflected in their behavior. Affirmative Action and tokenism are important

in the work place, but may not have been perceived to be important in a two-hour psychology experiment. Comments made by many participants near the end of the study suggested that they were anxious to leave, and tired of being held up for so long. Nobody expressed much interest in the problems of Affirmative Action and tokenism after the debriefing period. Perhaps greater stakes in the competition of Towers would have stimulated more interest in the study, but this is speculation. Nonetheless, field studies appear to be the most promising direction for future research on tokenism.

In conclusion, the present study suggests that neither token selection condition nor tokenism itself affect individual performance or work attitudes. Is this good news for Affirmative Action policies that rely on quotas and promote the perception that tokens are hired for a non-work-related attribute like gender? Before accepting this interpretation, future research needs to be conducted in the field, and should investigate the role of attribution processes.

## References

Alexander, V. D., & Thoits, P. A. (1985). Token achievement: An examination of proportional representation and performance outcomes. Social Forces, 64, 332-340.

Archer, C. J. (1984). Children's attitudes toward sex-role division in adult occupational roles. Sex Roles, 10, 1-10.

Ashmore, R. D., & Del Boca, E. K. (1979). Sex stereotypes and implicit personality theory: Toward a cognitive-social psychological conceptualization. Sex Roles, 5, 219-248.

Berkowitz, L., & Donnerstein, E. (1982). External validity is more than skin deep: Some answers to criticisms of laboratory experiments. American Psychologist, 34, 141-150.

Bigoness, W. J. (1976). Effect of applicant's sex, race, and performance on employers' performance ratings: Some additional findings. Journal of Applied Psychology, 61, 80-84.

Brief, A. P., & Wallace, M. J. (1976). The impact of employee sex and performance on the allocation of organizational rewards. The Journal of Psychology, 92, 25-34.

Chacko, T. I. (1982). Women and equal employment opportunity: Some unintended effects. Journal of Applied Psychology, 67, 119-123.

Christensen, D., & Rosenthal, R. (1982). Gender and nonverbal decoding skills as determinants of interpersonal expectancy effects. Journal of Personality and Social Psychology, 42, 75-87.

Crino, M. D., White, M. C., & DeSanctis, G. L. (1981). A comment on the dimensionality and reliability of the Women as Managers Scale (WAMS). Academy of Management Journal, 24, 866-876.

Cohen, S. L., & Bunker, K. A. (1975). Subtle effects of sex role stereotypes on recruiters' hiring decisions. Journal of Applied Psychology, 60, 566-572.

Constantinople, A. (1982). A critique of "In search of token women in academia." Psychology of Women Quarterly, 7, 163-165.

Crocker, J., & McGraw, K. M. (1984). What's good for the goose is not good for the gander: Solo status as an obstacle to occupational achievement for males and females. American Behavioral Scientist, 27, 357-369.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social

desirability independent of psychopathology. Journal of Consulting Psychology, 24, 349-354.

Darley, J. M. & Fazio, R. H. (1980). Expectancy confirmation processes arising in the social interaction sequence. American Psychologist, 35, 867-881.

Deaux, K. (1976). Sex: A perspective on the attribution process. In J. H. Harvey, W. J. Ickes, & R. F. Kidd (Eds.), New Directions in Attribution Research, Vol, 1 (pp.335-352). Hillsdale, N. J.: Erlbaum.

Deaux, K. (1984). From individual differences to social categories: Analysis of a decade's research on gender. American Psychologist, 39, 105-116.

Deaux, K., & Taynor, J. (1973). Evaluation of male and female ability: Bias works two ways. Psychological Reports, 32, 261-262.

Dipboye, R. L., & Flanagan, M. F. (1979). Research settings in industrial and organizational psychology: Are findings in the field more generalizable than in the laboratory? American Psychologist, 34, 141-150.

Eagly, A. H. (1978). Sex differences in influenceability. Psychological Bulletin, 85, 86-116.

Eagly, A. H. (1983). Gender and social influence; A social

psychological analysis. American Psychologist, 38, 971-981.

Eagly, A. H., & Wood, W. (1982). Inferred sex differences in status as a determinant of gender stereotypes about social influence. Journal of Personality and Social Psychology, 43, 915-928.

Fazio, R. H. Effrein, E. A., & Falender, V. J. (1984). Self perceptions following social interaction. Journal of Personality and Social Psychology, 41, 232-242.

Feather, N. J., & Simon, J. G. (1973). Fear of success and causal attributions for outcome. Journal of Personality, 41, 525-542.

Granier, J. M., & Benson, P. G. (1985, April). Test-retest reliability, social desirability, and dimensionality of the Woman as Managers Scale. Paper presented at the 6th Annual Industrial-Organizational/Organizational Behavior Graduate Student Conference. Akron, Ohio.

Heilman, M. E. (1984). Information as a deterrent against sex discrimination: The effects of applicant sex and information type on preliminary employment decisions. Organizational Behavior and Human Performance, 33, 174-186.

Heilman, M. E., & Herlihy, J. M. (1984). Affirmative action, negative reaction? Some moderating conditions.

Organizational Behavior and Human Performance, 33, 204-213.

House, R. J., Schuler, R. S., & Levanoni, E. (1983). Role conflict and ambiguity scales: Reality or artifacts. Journal of Applied Psychology, 68, 334-337.

Ilgen, D. R., & Moore, C. F. (1983). When reason fails: A comment on the reliability and dimensionality of the WAMS. Academy of Management Journal, 26, 535-540.

Jones, E. E., & Nisbett, R. E. (1971). The Actor and the Observer: Divergent Perceptions of the Causes of Behavior. New York: General Learning Press.

Kanter, R. M. (1977a). Some effects of proportions on group life: Skewed sex ratios and responses to token women. American Journal of Sociology, 82, 965-990.

Kanter, R. M. (1977b). Men and Women of the Corporation. New York: Basic Books.

Lahey, M. A., Stockdale, M. Downey, R. G., & Astley, S. (1986, August). A model for gender-related bias in personnel decisions. In R. G. Downey (Chair) Sex as a Social Category: Men and Women at Work. Symposium conducted at the

Paper 94th Annual Meeting of the American Psychological Association. Washington, D. C.

Laws, J. L. (1975). The psychology of tokenism: An analysis. Sex Roles, 1, 51-67.

Merton, R. K. (1948). The self-fulfilling prophecy. Antioch Review, 8, 193-210.

Massengill, D., & DiMarco, N. (1979). Sex-role stereotypes and requisite management characteristics: A current replication. Sex Roles, 5, 561-570.

Mook, D. G. (1983). In defense of external invalidity. American Psychologist, 38, 379-398.

Overall, J. E., & Klett, C. J. (1983). Applied Multivariate Analysis. Malibar, Fl.: Robert E. Krieger.

Peters, L. H., Terborg, J. R., & Taynor, J. (1974). Women as Managers Scale (WAMS): A measure of attitudes toward women in management positions. JSAS Catalog of Selected Documents in Psychology. (Ms. No. 585).

Pfeiffer, W. J., & Jones, J. E. (1974). A Handbook of Structured Experiences for Human Relations Training (Vol 3). LaJolla, Calf.: University Associates.

Powell, G. N., & Butterfield, D. A. (1984). If "Good managers" are masculine, what are "Bad managers"?

Sex Roles, 10, 477-484.

Rizzo, J. R., House R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. Administrative Science Quarterly, 15, 150-163.

Rosen, B., & Jerdee, T. H. (1973). The influence of sex-role stereotypes on evaluations of male and female supervisory behavior. Journal of Applied Psychology, 57, 44-48.

Rosenthal, R., & Jacobson, L. (1968). Pygmalion in the Classroom. New York: Holt, Rinehart and Winston.

Ruble, T. L., Cohen, R., & Ruble, D. N. (1984). Sex stereotypes, occupational barriers for women. American Behavioral Scientist, 27, 339-356.

Rummel, R. J. (1970). Applied Factor Analysis. Evanston: Northwestern University Press.

Schein, V. E. (1973). The relationship between sex role stereeotypes and requisite management characteristics. Journal of Applied Psychology, 57, 95-100.

Schein, V. E. (1975). Relationships between sex role stereotypes and requisite management characteristics among female managers. Journal of Applied

Psychology, 60, 340-344.

Schein, V. E. (1978). Sex role stereotyping, ability and performance: Prior research and new directions. Personnel Psychology, 31, 259-268.

Schneider, D. J. (1973). Implicit personality theory: A review. Psychological Bulletin, 79, 294-309.

Smith, P. C., Kendall, L. M., & Hulin, C. L. (1969). The Measurement of Satisfaction in Work and Retirement. Chicago: Rand McNally.

Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. Journal of Personality and Social Psychology, 35, 656-666.

SPSS, inc. (1983). SPSSX User's Guide. New York: McGraw-Hill.

Swann, W. B. Jr, & Ely, R. J. (1984). A battle of wills: Self-verification versus behavioral confirmation. Journal of Personality and Social Psychology, 46, 1287-1302.

Terborg, J. R. (1977). Women in management: A research review. Journal of Applied Psychology, 62, 647-664.

Terborg, J. R., Peters, L. H., Ilgen, D. R., & Smith, F. (1977). Organizational and personal correlates of

attitudes toward women as managers. Academy of Management Journal, 20, 89-100.

Tosi, H. L., & Einbender, S. W. (1985). The effects of the type and amount of information in sex discrimination research: A meta-analysis. Academy of Management Journal, 28, 712-722.

Whittaker, J. O. (1965). Sex differences and susceptibility to interpersonal persuasion. Journal of Social Psychology, 66, 91-94.

Wolman, C., & Frank, H. (1975). The solo woman in a professional peer group. American Journal of Orthopsychiatry, 45, 164-171.

Young, C. J., MacKenzie, D. L., & Sherif, C. W. (1980). In search of token women in academia. Psychology of Women Quarterly, 4, 508-525.

Zanna, M. P., & Pack, S. J. (1975). On the self-fulfilling nature of apparent sex differences in behavior. Journal of Experimental Social Psychology, 11, 583-591.

# APPENDIX A

## PERFORMANCE RATING FORM

Last 4 digits of SS# __ __ __ __

PERFORMANCE EVALUATION FORM

1. Using the following scale, please rate the performance of _____. First think about how he/she performed in the group, then respond to each statement by circling the number next to the response that best describes your reaction. Your responses will be used only for research purposes and will not be shared with the person you are evaluating. Read each statement carefully and answer each honestly and truthfully.

Refer to this scale:

1=Strongly Disagree 2=Disagree 3=Slightly Disagree
4=Neither Agree or Disagree
5=Slightly Agree 6=Agree 7=Strongly Agree

1. This person did not keep the morale of the group high.

2. This person acted in a masculine way.

3. This person is not someone I would want to work with in a real job.

4. This person did not make important decisions for accomplishing the goal.

5. This person was warm and supportive.

7. This person was not a good team member.

8. This person was not the hardest worker in the group.

9. This person placed the good of the group above the good of him/herself.

10. This person had the best ideas for accomplishing the goal.

11. This person did not maintain definite standards of performance.

12. This person did not put suggestions made by the group into operation.

13. This person was the best worker in the group.

14. This person helped the team stick together.

15. This person saw to it that the work of group members was coordinated.

16. This person was the leader of the group.

17. This person stressed getting the job done.

18. This person was not friendly and approachable.

19. This person acted in roles that were characteristic of his or her gender.

20. This person acted in a feminine way.

21. This person did not stress being ahead of the competing teams.

# APPENDIX B

## JDI WORK AND COWORKER SCALES

Last 4 digits of SS# __ __ __ __

ATTITUDES TOWARD GROUP TASK SURVEY

1. Think of the task you just completed. What was it like most of the time? In the blank beside each word given below, write:
__Y__ for "Yes" it if describes this task
__N__ for "No" if does NOT describe it
__?__ if you cannot decide

---

WORK ON PRESENT TASK

_____Fascinating

_____Routine

_____Satisfying

_____Boring

_____Good

_____Creative

_____Respectful

_____Hot

_____Pleasant

_____Useful

_____Tiresome

_____Healthful

_____Challenging

_____On your feet

_____Frustrating

_____Simple

_____Endless

_____Gives sense of accomplishment

2. Think of the people that you worked with on this task. How well does each of the following words describe these people? In the blank beside each work below, put:
__Y__ if it describes the people you work with
__N__ if it does NOT describe them
__?__ if you cannot decide

---

PEOPLE ON THIS TASK

_____Stimulating

_____Boring

_____Slow

_____Ambitious

_____Stupid

_____Responsible

_____Fast

_____Intelligent

_____Easy to make enemies

_____Talk too much

_____Smart

_____Lazy

_____Unpleasant

_____No privacy

_____Active

_____Narrow interests

_____Loyal

_____Hard to meet

# APPENDIX C

## ROLE CONFLICT/ROLE AMBIGUITY SCALE

Last 4 digits of SS# __ __ __ __

Instructions: Please read each statement below and think about the group task you just performed. Circle the number that best describes your reaction to each statement. The greater the number, the more you disagree with the statement; the lower the number, the more you agree with the statement.

Respond to each question using the following scale:

1=Strongly Agree 2=Agree 3=Slightly Agree
4=Neither Agree or Disagree
5=Slightly Disagree 6=Disagree 7=Strongly Disagree

1. My authority on this task matches the responsibilities assigned to me.

2. I did not know what was expected of me.

3. My responsibilities were clearly defined.

4. I felt certain about how much authority I had on this task.

5. I know what my responsibilities were.

6. I had clear planned goals and objectives for this task.

7. The planned goals and objectives were not clear.

8. I knew exactly what was expected of me.

9. I worked under unclear policies and guidelines.

10. Explanations were clear of what had to be done on this task.

11. I did not know how to improve my performance on this task.

12. There were unreasonable pressures for better performance.

13. I was often asked to do things which were against my better judgment.

14. I received assignments without adequate resources and

materials to execute it.

15. I received incompatible requests from two or more people.

16. I had to do things that should done differently under different conditions.

17. The resources and materials that I received were enough for my job.

18. My knowledge and skills were enough for doing the task.

19. I knew how to allocate my efforts to be more effective.

20. I was generally able to reconcile conflicting demands from different people.

21. I frequently did not know how to handle problems that occurred on this task.

## Footnotes

[1] Principle Axes Factor Analysis requires that estimates of the variance that each variable shares with the rest of the scale be placed in the diagonal of the correlation matrix used to derive the factors. Multiple regression was used to derive these estimates such that each element in the diagonal represents the multiple RSQ of the variable or item in question as the criterion, and all other items in the scale as predictors. Table 2 gives the multiple-regression-based communality estimates for each item for all four scales that were factor analyzed (first and second peer ratings, self ratings and the role conflict/ambiguity scale).

[2] According to Lahey, Downey and Saal (1983) the ratio of BMS/EMS (between targets mean square/error mean square) is the traditional F test used to test the significance of the main effect of the target (i.e., people or subjects). They contend that Cronbach's alpha cannot be meaningfully interpreted unless the target main effect is significant. To determine the significance of the target main effects, F tests were performed on all four scales and their respective subscales. In all cases, the between subjects/target effects were

significant.

3

In order for the test statistic to be properly distributed as Chi Square in a multivariate analysis of variance, the sample size should meet this specification: $n > 3(p^2 + k^2)$ where $\underline{p}$ is equal to the number of dependent measures and $\underline{k}$ is the number of factors or groups. In the present study, there were ten dependent measures and a maximum of 12 groups, making the necessary sample size 732.

4

Due to the physical limitations of the testing site, three teams could not be simultaneously observed. During a few testing times, the author was able to observe one of the teams. It appeared that these teams were behaving in the hypothesized manner, but these observations were most likely biased.

TABLE 1

MANIPULATION CHECKS
MEANS AND STANDARD DEVIATIONS

| | | | ANAGRAM M | ANAGRAM SD | CREATIVE M | CREATIVE SD | PEER PRETEST RATING M | PEER PRETEST RATING SD |
|---|---|---|---|---|---|---|---|---|
| Male | Token | Qn[1] | 56.11 | (25.2) | 69.4 | (21.3) | 69.2 | (9.3) |
| | | Qaa[2] | 57.5 | (21.4) | 71.5 | (13.6) | 67.4 | (9.9) |
| | | LQaa[3] | 31.5 | (24.2) | 51.0 | (25.2) | 74.2 | (9.6) |
| | Dominant | Qn | 48.6 | (29.8) | 63.3 | (24.4) | 69.5 | (16.4) |
| | | Qaa | 51.5 | (23.0) | 71.7 | (17.3) | 70.9 | (13.6) |
| | | LQaa | 53.0 | (24.7) | 60.3 | (18.5) | 75.2 | (12.9) |
| Female | Token | Qn | 66.4 | (22.7) | 61.1 | (27.6) | 67.4 | (8.2) |
| | | Qaa | 55.6 | (31.4) | 58.9 | (9.6) | 75.0 | (9.9) |
| | | LQaa | 49.3 | (26.4) | 72.1 | (12.5) | 63.9 | (11.7) |
| | Dominant | Qn | 52.2 | (22.3) | 62.3 | (18.8) | 71.2 | (15.2) |
| | | Qaa | 56.3 | (27.7) | 63.8 | (29.4) | 69.5 | (11.8) |
| | | LQaa | 61.9 | (24.9) | 73.8 | (17.5) | 70.9 | (23.0) |

1
Qn- Selection Condition- Qualified Normal
2
Qaa- Selection Condition- Qualified Affirmative Action
3
LQaa- Selection Condition- Less Qualified Affirmative Action

TABLE 2

MULTIPLE REGRESSION-BASED COMMUNALITY ESTIMATES*

| SCALE | ITEM 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1ST PEER RATING | 0.43 | 0.44 | 0.4 | 0.5 | 0.44 | 0.56 | 0.39 | 0.48 | 0.34 | 0.53 | 0.49 | 0.39 | 0.63 | 0.53 | 0.49 | 0.61 | 0.37 | 0.3 | 0.1 | 0.42 | 0.21 |
| 2ND PEER RATING | 0.58 | 0.47 | 0.41 | 0.51 | 0.48 | 0.57 | 0.51 | 0.57 | 0.42 | 0.54 | 0.47 | 0.45 | 0.64 | 0.57 | 0.51 | 0.64 | 0.39 | 0.48 | 0.23 | 0.46 | 0.13 |
| SELF RATING | 0.31 | 0.48 | 0.21 | 0.51 | 0.41 | 0.48 | 0.42 | 0.54 | 0.28 | 0.48 | 0.43 | 0.31 | 0.51 | 0.48 | 0.57 | 0.57 | 0.38 | 0.19 | 0.23 | 0.49 | 0.24 |
| ROLE CONFLICT/ ROLE AMBIGUITY | 0.23 | 0.54 | 0.41 | 0.61 | 0.67 | 0.43 | 0.44 | 0.48 | 0.4 | 0.3 | 0.26 | 0.31 | 0.36 | 0.48 | 0.43 | 0.46 | 0.37 | 0.43 | 0.54 | 0.26 | 0.19 |

*Each entry represents the multiple R using the item number as criterion and all other items in that scale as predictors.

TABLE 3 *
ROTATED FACTOR LOADINGS
FIRST AND SECOND PEER RATINGS

| | FACTOR 1 | | FACTOR 2 | | FACTOR 3 | | FACTOR 4 | |
|---|---|---|---|---|---|---|---|---|
| ITEM # | 1ST PEER RATING | 2ND PEER RATING | 1ST PEER RATING | 2ND PEER RATING | 1ST PEER RATING | 2ND PEER RATING | 1ST PEER RATING | 2ND PEER RATING |
| 1 | 0.24 | 0.30 | 0.60 | 0.37 | -0.01 | -0.07 | -0.20 | 0.08 |
| 2 | 0.14 | 0.13 | 0.01 | -0.12 | 0.92 | 0.68 | 0.18 | 0.28 |
| 3 | 0.31 | 0.08 | 0.52 | 0.62 | 0.03 | -0.02 | -0.24 | -0.06 |
| 4 | 0.55 | 0.56 | 0.40 | 0.43 | 0.17 | 0.16 | -0.11 | -0.06 |
| 5 | 0.20 | 0.23 | 0.63 | 0.59 | -0.05 | -0.10 | 0.08 | 0.05 |
| 6 | 0.61 | 0.59 | 0.40 | 0.40 | 0.06 | 0.03 | -0.21 | 0.14 |
| 7 | 0.19 | 0.21 | 0.56 | 0.71 | 0.07 | 0.01 | -0.18 | 0.15 |
| 8 | 0.64 | 0.62 | 0.13 | 0.22 | 0.03 | 0.09 | -0.22 | 0.22 |
| 9 | 0.28 | 0.35 | 0.47 | 0.41 | 0.09 | -0.01 | 0.06 | -0.07 |
| 10 | 0.65 | 0.67 | 0.26 | 0.18 | 0.17 | 0.12 | 0.02 | 0.05 |
| 11 | 0.48 | 0.41 | 0.51 | 0.53 | 0.06 | 0.02 | -0.01 | 0.04 |
| 12 | 0.20 | 0.15 | 0.56 | 0.66 | 0.04 | 0.02 | 0.01 | 0.02 |
| 13 | 0.80 | 0.70 | 0.15 | 0.29 | 0.15 | 0.05 | 0.04 | 0.23 |
| 14 | 0.35 | 0.46 | 0.66 | 0.54 | -0.01 | -0.09 | 0.31 | 0.07 |
| 15 | 0.45 | 0.55 | 0.48 | 0.43 | 0.07 | 0.16 | 0.29 | 0.05 |
| 16 | 0.79 | 0.80 | 0.13 | 0.23 | 0.09 | 0.05 | 0.02 | 0.10 |
| 17 | 0.48 | 0.55 | 0.29 | 0.19 | 0.08 | -0.02 | 0.12 | 0.15 |
| 18 | -0.01 | 0.14 | 0.54 | 0.68 | 0.12 | -0.07 | -0.07 | 0.00 |
| 19 | -0.01 | 0.15 | -0.03 | 0.03 | 0.00 | 0.01 | 0.23 | 0.59 |
| 20 | -0.22 | -0.03 | -0.10 | 0.04 | -0.59 | -0.91 | 0.15 | 0.19 |
| 21 | 0.31 | 0.28 | 0.20 | 0.01 | 0.13 | -0.05 | 0.06 | -0.14 |

*
Varimax Rotation

TABLE 4

*

ROTATED THREE FACTOR SOLUTION
FACTOR LOADINGS
PEER RATINGS

| | FACTOR 1 | | FACTOR 2 | | FACTOR 3 | |
|---|---|---|---|---|---|---|
| | a | b | | | | |
| ITEM | 1ST | 2ND | 1ST | 2ND | 1ST | 2ND |
| 1 | 0.24 | 0.29 | 0.60 | 0.68 | -0.07 | -0.07 |
| 2 | 0.18 | 0.19 | 0.05 | -0.13 | 0.97 | 0.59 |
| 3 | 0.32 | 0.04 | 0.51 | 0.63 | -0.04 | -0.03 |
| 4 | 0.56 | 0.50 | 0.42 | 0.46 | 0.10 | 0.18 |
| 5 | 0.18 | 0.22 | 0.64 | 0.60 | -0.07 | -0.10 |
| 6 | 0.61 | 0.60 | 0.41 | 0.41 | -0.02 | 0.04 |
| 7 | 0.19 | 0.23 | 0.56 | 0.69 | 0.01 | -0.01 |
| 8 | 0.63 | 0.65 | 0.14 | 0.23 | -0.04 | 0.11 |
| 9 | 0.28 | 0.30 | 0.46 | 0.44 | 0.07 | 0.01 |
| 10 | 0.65 | 0.64 | 0.28 | 0.22 | 0.12 | 0.15 |
| 11 | 0.48 | 0.39 | 0.52 | 0.54 | 0.01 | 0.03 |
| 12 | 0.19 | 0.13 | 0.56 | 0.66 | 0.01 | 0.02 |
| 13 | 0.80 | 0.74 | 0.17 | 0.31 | 0.11 | 0.07 |
| 14 | 0.32 | 0.45 | 0.64 | 0.56 | 0.00 | -0.08 |
| 15 | 0.42 | 0.52 | 0.48 | 0.46 | 0.07 | 0.18 |
| 16 | 0.79 | 0.79 | 0.15 | 0.27 | 0.04 | 0.09 |
| 17 | 0.47 | 0.56 | 0.30 | 0.21 | 0.07 | -0.01 |
| 18 | -0.01 | 0.11 | 0.54 | 0.69 | 0.09 | -0.07 |
| 19 | -0.03 | 0.29 | -0.02 | 0.01 | 0.04 | -0.01 |
| 20 | -0.27 | 0.06 | -0.12 | 0.00 | -0.48 | -0.98 |
| 21 | 0.31 | 0.22 | 0.22 | 0.04 | 0.11 | -0.02 |

*
Varimax Rotation
a
1st peer rating
b
2nd peer rating

TABLE 5

INTERITEM CORRELATION MATRIX
FIRST PEER RATING

| ITEM | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 : | | | | | | | | | | | | | | | | | | | | | |
| 2 : | 0.05 | | | | | | | | | | | | | | | | | | | | |
| 3 : | 0.49 | 0.09 | | | | | | | | | | | | | | | | | | | |
| 4 : | 0.50 | 0.26 | 0.52 | | | | | | | | | | | | | | | | | | |
| 5 : | 0.45 | -0.02 | 0.52 | 0.38 | | | | | | | | | | | | | | | | | |
| 6 : | 0.43 | 0.20 | 0.44 | 0.57 | 0.35 | | | | | | | | | | | | | | | | |
| 7 : | 0.33 | 0.19 | 0.47 | 0.38 | 0.42 | 0.42 | | | | | | | | | | | | | | | |
| 8 : | 0.27 | 0.17 | 0.34 | 0.43 | 0.21 | 0.55 | 0.35 | | | | | | | | | | | | | | |
| 9 : | 0.36 | 0.16 | 0.41 | 0.38 | 0.41 | 0.38 | 0.40 | 0.35 | | | | | | | | | | | | | |
| 10 : | 0.39 | 0.21 | 0.39 | 0.61 | 0.28 | 0.54 | 0.26 | 0.48 | 0.37 | | | | | | | | | | | | |
| 11 : | 0.39 | 0.17 | 0.43 | 0.52 | 0.45 | 0.51 | 0.43 | 0.39 | 0.38 | 0.49 | | | | | | | | | | | |
| 12 : | 0.37 | 0.07 | 0.36 | 0.42 | 0.39 | 0.37 | 0.36 | 0.29 | 0.36 | 0.30 | 0.46 | | | | | | | | | | |
| 13 : | 0.31 | 0.29 | 0.39 | 0.54 | 0.29 | 0.54 | 0.29 | 0.60 | 0.39 | 0.60 | 0.42 | 0.27 | | | | | | | | | |
| 14 : | 0.41 | 0.09 | 0.43 | 0.46 | 0.48 | 0.44 | 0.40 | 0.25 | 0.42 | 0.40 | 0.53 | 0.48 | 0.39 | | | | | | | | |
| 15 : | 0.37 | 0.22 | 0.35 | 0.46 | 0.44 | 0.45 | 0.30 | 0.30 | 0.43 | 0.45 | 0.49 | 0.39 | 0.41 | 0.48 | | | | | | | |
| 16 : | 0.35 | 0.25 | 0.36 | 0.61 | 0.23 | 0.59 | 0.32 | 0.54 | 0.30 | 0.54 | 0.43 | 0.22 | 0.63 | 0.33 | 0.53 | | | | | | |
| 17 : | 0.28 | 0.24 | 0.33 | 0.38 | 0.17 | 0.38 | 0.22 | 0.30 | 0.29 | 0.36 | 0.34 | 0.22 | 0.41 | 0.35 | 0.43 | 0.43 | | | | | |
| 18 : | 0.32 | 0.14 | 0.30 | 0.23 | 0.38 | 0.30 | 0.36 | 0.04 | 0.25 | 0.19 | 0.26 | 0.28 | 0.08 | 0.36 | 0.22 | 0.12 | 0.12 | | | | |
| 19 : | -0.01 | -0.01 | -0.01 | -0.01 | 0.07 | 0.03 | 0.01 | 0.04 | 0.06 | 0.07 | 0.03 | -0.08 | 0.20 | 0.11 | 0.01 | 0.08 | 0.04 | 0.04 | | | |
| 20 : | -0.20 | -0.56 | -0.15 | -0.37 | -0.09 | -0.30 | -0.20 | -0.24 | -0.18 | -0.24 | -0.23 | -0.20 | -0.33 | -0.07 | -0.24 | -0.28 | -0.15 | -0.11 | 0.11 | | |
| 21 : | 0.16 | 0.16 | 0.17 | 0.25 | 0.22 | 0.28 | 0.10 | 0.25 | 0.24 | 0.22 | 0.33 | 0.29 | 0.23 | 0.24 | 0.28 | 0.18 | 0.26 | 0.22 | 0.12 | -0.17 | |

TABLE 6

INTERITEM CORRELATION MATRIX
SECOND PEER RATING

| ITEM | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | |
| 2 | 0.00 | | | | | | | | | | | | | | | | | | | | |
| 3 | 0.45 | -0.07 | | | | | | | | | | | | | | | | | | | |
| 4 | 0.43 | 0.16 | 0.33 | | | | | | | | | | | | | | | | | | |
| 5 | 0.54 | -0.07 | 0.46 | 0.35 | | | | | | | | | | | | | | | | | |
| 6 | 0.48 | 0.11 | 0.22 | 0.56 | 0.35 | | | | | | | | | | | | | | | | |
| 7 | 0.50 | 0.01 | 0.39 | 0.46 | 0.48 | 0.48 | | | | | | | | | | | | | | | |
| 8 | 0.42 | 0.13 | 0.11 | 0.46 | 0.22 | 0.63 | 0.37 | | | | | | | | | | | | | | |
| 9 | 0.45 | -0.02 | 0.23 | 0.44 | 0.42 | 0.33 | 0.38 | 0.28 | | | | | | | | | | | | | |
| 10 | 0.25 | 0.15 | 0.13 | 0.49 | 0.32 | 0.42 | 0.25 | 0.55 | 0.32 | | | | | | | | | | | | |
| 11 | 0.57 | 0.00 | 0.34 | 0.46 | 0.43 | 0.55 | 0.48 | 0.38 | 0.36 | 0.34 | | | | | | | | | | | |
| 12 | 0.45 | -0.07 | 0.29 | 0.34 | 0.43 | 0.36 | 0.54 | 0.27 | 0.43 | 0.21 | 0.38 | | | | | | | | | | |
| 13 | 0.42 | 0.14 | 0.24 | 0.50 | 0.37 | 0.58 | 0.36 | 0.61 | 0.30 | 0.60 | 0.49 | 0.27 | | | | | | | | | |
| 14 | 0.48 | -0.05 | 0.31 | 0.45 | 0.44 | 0.45 | 0.48 | 0.38 | 0.47 | 0.36 | 0.49 | 0.34 | 0.55 | | | | | | | | |
| 15 | 0.44 | 0.15 | 0.28 | 0.49 | 0.39 | 0.49 | 0.38 | 0.52 | 0.48 | 0.45 | 0.46 | 0.43 | 0.48 | 0.51 | | | | | | | |
| 16 | 0.46 | 0.15 | 0.21 | 0.53 | 0.39 | 0.57 | 0.32 | 0.63 | 0.37 | 0.64 | 0.49 | 0.26 | 0.67 | 0.47 | 0.56 | | | | | | |
| 17 | 0.40 | 0.11 | 0.16 | 0.39 | 0.26 | 0.45 | 0.30 | 0.41 | 0.39 | 0.38 | 0.35 | 0.25 | 0.45 | 0.50 | 0.43 | 0.52 | | | | | |
| 18 | 0.48 | -0.14 | 0.49 | 0.34 | 0.44 | 0.32 | 0.48 | 0.28 | 0.32 | 0.27 | 0.37 | 0.45 | 0.29 | 0.45 | 0.34 | 0.24 | 0.22 | | | | |
| 19 | 0.12 | 0.22 | 0.01 | 0.08 | 0.18 | 0.15 | 0.09 | 0.23 | 0.09 | 0.14 | 0.06 | 0.06 | 0.24 | 0.13 | 0.17 | 0.20 | 0.16 | 0.07 | | | |
| 20 | 0.06 | -0.58 | 0.01 | -0.17 | 0.11 | -0.01 | 0.04 | -0.06 | -0.05 | -0.14 | -0.01 | 0.00 | -0.03 | 0.09 | -0.16 | -0.05 | -7.00 | 0.07 | 0.14 | | |
| 21 | 0.07 | 0.03 | 0.08 | 0.18 | 0.14 | 0.18 | -0.02 | 0.18 | 0.10 | 0.22 | 0.12 | 0.03 | 0.24 | 0.10 | 0.18 | 0.23 | 0.26 | 0.10 | 0.01 | -0.01 | |

TABLE 7 *
ROTATED THREE-FACTOR STRUCTURE
SELF RATING

| ITEM | FACTOR 1 | FACTOR 2 | FACTOR 3 |
|---|---|---|---|
| 1 | 0.22 | 0.42 | 0.16 |
| 2 | 0.23 | -0.41 | 0.37 |
| 3 | 0.16 | 0.35 | 0.00 |
| 4 | 0.63 | 0.24 | 0.14 |
| 5 | 0.02 | 0.62 | 0.15 |
| 6 | 0.61 | 0.33 | 0.03 |
| 7 | 0.27 | 0.61 | -0.06 |
| 8 | 0.74 | 0.24 | 0.05 |
| 9 | 0.04 | 0.46 | 0.19 |
| 10 | 0.59 | 0.01 | 0.25 |
| 11 | 0.34 | 0.55 | 0.15 |
| 12 | 0.03 | 0.52 | 0.07 |
| 13 | 0.60 | 0.13 | 0.25 |
| 14 | 0.21 | 0.51 | 0.43 |
| 15 | 0.28 | 0.41 | 0.68 |
| 16 | 0.56 | 0.00 | 0.42 |
| 17 | 0.24 | 0.29 | 0.45 |
| 18 | 0.10 | 0.27 | -0.04 |
| 19 | 0.08 | -0.03 | 0.32 |
| 20 | -0.26 | 0.37 | -0.20 |
| 21 | 0.31 | 0.04 | 0.21 |

*
Varimax Rotation

TABLE 8

INTERITEM CORRELATION MATRIX
SELF RATING

| ITEM | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | |
| 2 | -0.08 | | | | | | | | | | | | | | | | | | | | |
| 3 | 0.15 | -0.08 | | | | | | | | | | | | | | | | | | | |
| 4 | 0.33 | 0.07 | 0.16 | | | | | | | | | | | | | | | | | | |
| 5 | 0.38 | -0.06 | 0.34 | 0.18 | | | | | | | | | | | | | | | | | |
| 6 | 0.25 | 0.01 | 0.14 | 0.48 | 0.22 | | | | | | | | | | | | | | | | |
| 7 | 0.36 | -0.06 | 0.22 | 0.40 | 0.50 | 0.45 | | | | | | | | | | | | | | | |
| 8 | 0.25 | 0.01 | 0.06 | 0.50 | 0.18 | 0.62 | 0.38 | | | | | | | | | | | | | | |
| 9 | 0.24 | -0.05 | 0.29 | 0.17 | 0.33 | 0.25 | 0.27 | 0.19 | | | | | | | | | | | | | |
| 10 | 0.17 | 0.10 | 0.12 | 0.54 | 0.01 | 0.26 | 0.11 | 0.37 | 0.12 | | | | | | | | | | | | |
| 11 | 0.43 | -0.13 | 0.20 | 0.43 | 0.38 | 0.41 | 0.50 | 0.46 | 0.41 | 0.21 | | | | | | | | | | | |
| 12 | 0.23 | -0.11 | 0.28 | 0.22 | 0.43 | 0.19 | 0.44 | 0.14 | 0.38 | 0.03 | 0.36 | | | | | | | | | | |
| 13 | 0.21 | 0.08 | 0.10 | 0.36 | 0.09 | 0.41 | 0.24 | 0.52 | 0.10 | 0.42 | 0.35 | 0.12 | | | | | | | | | |
| 14 | 0.39 | -0.05 | 0.14 | 0.39 | 0.40 | 0.33 | 0.30 | 0.33 | 0.33 | 0.21 | 0.39 | 0.22 | 0.29 | | | | | | | | |
| 15 | 0.28 | 0.11 | 0.13 | 0.33 | 0.32 | 0.35 | 0.37 | 0.35 | 0.40 | 0.30 | 0.47 | 0.23 | 0.41 | 0.56 | | | | | | | |
| 16 | 0.19 | 0.19 | 0.06 | 0.36 | 0.07 | 0.39 | 0.19 | 0.44 | 0.00 | 0.51 | 0.22 | 0.04 | 0.70 | 0.30 | 0.46 | | | | | | |
| 17 | 0.21 | -0.01 | 0.10 | 0.30 | 0.18 | 0.24 | 0.14 | 0.25 | 0.36 | 0.34 | 0.30 | 0.24 | 0.33 | 0.49 | 0.53 | 0.29 | | | | | |
| 18 | 0.18 | -0.12 | 0.17 | 0.11 | 0.24 | 0.02 | 0.26 | 0.11 | 0.15 | 0.13 | 0.14 | 0.11 | 0.02 | 0.14 | 0.09 | -0.01 | 0.07 | | | | |
| 19 | -0.08 | 0.23 | -0.07 | 0.06 | 0.09 | 0.04 | 0.04 | 0.04 | 0.11 | 0.05 | 0.11 | 0.13 | 0.18 | 0.16 | 0.28 | 0.09 | 0.19 | -0.14 | | | |
| 20 | 0.10 | 0.59 | -0.02 | -0.19 | 0.13 | 0.00 | 0.12 | -0.08 | 0.00 | -0.14 | 0.06 | 0.17 | -0.09 | 0.07 | -0.02 | -0.26 | 0.06 | 0.00 | 0.12 | | |
| 21 | 0.05 | 0.08 | 0.11 | 0.26 | 0.09 | 0.28 | 0.25 | 0.32 | 0.12 | 0.15 | 0.27 | 0.01 | 0.19 | 0.23 | 0.30 | 0.19 | 0.36 | 0.13 | 0.19 | -0.07 | |

TABLE 9

ROTATED FACTOR STRUCTURE*
ROLE CONFLICT/ROLE AMBIGUITY

| ITEM | | FACTOR 1 | FACTOR 2 | FACTOR 3 | FACTOR 4 | FACTOR 5 |
|---|---|---|---|---|---|---|
| 1 | : | 0.27 | 0.08 | 0.19 | -0.02 | 0.23 |
| 2 | : | 0.35 | 0.03 | 0.17 | 0.33 | 0.08 |
| 3 | : | 0.54 | 0.08 | 0.02 | 0.34 | 0.01 |
| 4 | : | 0.77 | 0.09 | 0.20 | 0.08 | 0.00 |
| 5 | : | 0.88 | 0.05 | 0.11 | 0.17 | 0.03 |
| 6 | : | 0.42 | -0.13 | 0.48 | 0.17 | 0.08 |
| 7 | : | 0.17 | 0.24 | 0.26 | 0.68 | 0.01 |
| 8 | : | 0.51 | 0.02 | 0.20 | 0.42 | 0.15 |
| 9 | : | 0.23 | 0.35 | 0.12 | 0.49 | 0.08 |
| 10 | : | 0.24 | 0.15 | -0.02 | 0.39 | 0.17 |
| 11 | : | 0.05 | 0.09 | 0.46 | 0.29 | -0.01 |
| 12 | : | -0.07 | 0.48 | 0.17 | 0.14 | 0.14 |
| 13 | : | 0.13 | 0.67 | -0.01 | 0.01 | -0.06 |
| 14 | : | 0.01 | 0.47 | 0.10 | 0.18 | 0.57 |
| 15 | : | -0.04 | 0.71 | 0.05 | 0.14 | 0.12 |
| 16 | : | 0.14 | 0.52 | -0.05 | 0.05 | 0.26 |
| 17 | : | 0.05 | 0.13 | 0.06 | 0.08 | 0.71 |
| 18 | : | 0.13 | 0.04 | 0.48 | 0.02 | 0.43 |
| 19 | : | 0.22 | 0.17 | 0.58 | 0.20 | 0.30 |
| 20 | : | 0.09 | 0.09 | 0.49 | 0.00 | 0.00 |
| 21 | : | 0.06 | 0.33 | 0.21 | 0.10 | 0.05 |

*
Varimax Rotation

TABLE 10 *

TWO-FACTOR ROTATED SOLUTION
ROLE CONFLICT/ROLE AMBIGUITY

| ITEM | | FACTOR 1 | FACTOR 2 |
|---|---|---|---|
| 1 | : | 0.30 | 0.15 |
| 2 | : | 0.49 | 0.11 |
| 3 | : | 0.58 | 0.07 |
| 4 | : | 0.72 | 0.01 |
| 5 | : | 0.79 | -0.01 |
| 6 | : | 0.62 | -0.02 |
| 7 | : | 0.48 | 0.36 |
| 8 | : | 0.69 | 0.13 |
| 9 | : | 0.41 | 0.42 |
| 10 | : | 0.35 | 0.25 |
| 11 | : | 0.33 | 0.21 |
| 12 | : | 0.04 | 0.55 |
| 13 | : | 0.07 | 0.48 |
| 14 | : | 0.12 | 0.69 |
| 15 | : | 0.01 | 0.69 |
| 16 | : | 0.11 | 0.53 |
| 17 | : | 0.14 | 0.40 |
| 18 | : | 0.33 | 0.27 |
| 19 | : | 0.49 | 0.37 |
| 20 | : | 0.26 | 0.13 |
| 21 | : | 0.15 | 0.35 |

* Varimax Rotation

TABLE 11

INTERITEM CORRELATION MATRIX
ROLE CONFLICT/ROLE AMBIGUITY RATING

| ITEM | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | |
| 2 | 0.18 | | | | | | | | | | | | | | | | | | | | |
| 3 | 0.22 | 0.43 | | | | | | | | | | | | | | | | | | | |
| 4 | 0.29 | 0.31 | 0.47 | | | | | | | | | | | | | | | | | | |
| 5 | 0.21 | 0.51 | 0.57 | 0.71 | | | | | | | | | | | | | | | | | |
| 6 | 0.33 | 0.34 | 0.38 | 0.49 | 0.57 | | | | | | | | | | | | | | | | |
| 7 | 0.10 | 0.37 | 0.42 | 0.32 | 0.34 | 0.34 | | | | | | | | | | | | | | | |
| 8 | 0.28 | 0.37 | 0.51 | 0.57 | 0.64 | 0.53 | 0.41 | | | | | | | | | | | | | | |
| 9 | 0.21 | 0.16 | 0.37 | 0.39 | 0.31 | 0.25 | 0.48 | 0.40 | | | | | | | | | | | | | |
| 10 | 0.05 | 0.18 | 0.37 | 0.19 | 0.24 | 0.13 | 0.34 | 0.27 | 0.34 | | | | | | | | | | | | |
| 11 | 0.19 | 0.27 | 0.24 | 0.18 | 0.18 | 0.29 | 0.38 | 0.17 | 0.29 | 0.06 | | | | | | | | | | | |
| 12 | 0.10 | 0.16 | 0.14 | 0.01 | 0.04 | 0.11 | 0.25 | 0.10 | 0.21 | 0.17 | 0.14 | | | | | | | | | | |
| 13 | 0.17 | 0.03 | 0.21 | 0.20 | 0.21 | 0.07 | 0.14 | 0.14 | 0.28 | 0.17 | -0.01 | 0.23 | | | | | | | | | |
| 14 | 0.31 | 0.14 | 0.17 | 0.07 | 0.14 | 0.15 | 0.19 | 0.18 | 0.22 | 0.25 | 0.08 | 0.45 | 0.21 | | | | | | | | |
| 15 | 0.23 | 0.00 | 0.11 | 0.10 | 0.04 | 0.01 | 0.16 | 0.06 | 0.23 | 0.20 | 0.05 | 0.30 | 0.49 | 0.25 | | | | | | | |
| 16 | 0.22 | 0.10 | 0.06 | 0.17 | 0.18 | 0.05 | 0.12 | 0.06 | 0.18 | 0.04 | 0.03 | 0.20 | 0.32 | 0.28 | 0.32 | | | | | | |
| 17 | 0.28 | 0.18 | 0.14 | 0.01 | 0.01 | 0.03 | 0.09 | 0.06 | 0.08 | 0.21 | 0.02 | 0.16 | 0.10 | 0.47 | 0.03 | 0.21 | | | | | |
| 18 | 0.21 | 0.20 | 0.19 | 0.26 | 0.18 | 0.22 | 0.15 | 0.30 | 0.18 | 0.14 | 0.21 | 0.23 | 0.07 | 0.33 | 0.08 | -0.02 | 0.30 | | | | |
| 19 | 0.29 | 0.31 | 0.29 | 0.36 | 0.35 | 0.41 | 0.27 | 0.35 | 0.28 | 0.27 | 0.33 | 0.22 | 0.13 | 0.19 | 0.21 | 0.15 | 0.18 | 0.56 | | | |
| 20 | 0.28 | 0.15 | 0.24 | 0.20 | 0.18 | 0.31 | 0.14 | 0.18 | 0.08 | 0.05 | 0.22 | 0.15 | 0.12 | 0.09 | 9.00 | -0.03 | 0.10 | 0.21 | 0.41 | | |
| 21 | 0.04 | 0.17 | 0.10 | 0.16 | 0.10 | 0.04 | 0.13 | 0.12 | 0.19 | 0.09 | 0.18 | 0.27 | 0.19 | 0.08 | 0.23 | 0.20 | 0.09 | 0.24 | 0.23 | 0.09 | |

TABLE 12

FACTOR INTERCORRELATIONS
PEER AND SELF RATINGS

OBLIQUE ROTATION

| | PEER RATINGS[a] | | | SELF RATINGS | | |
|---|---|---|---|---|---|---|
| | FACTOR 1 | FACTOR 2 | FACTOR 3 | FACTOR 1 | FACTOR 2 | FACTOR 3 |
| FACTOR 1 | | -0.15 | -0.55 | | | |
| FACTOR 2 | -0.22 | | -0.08 | -0.17 | | |
| FACTOR 3 | -0.52 | 0.29 | | 0.43 | 0.19 | |

[a] Values in lower triangle represent the 1st peer rating; values in upper trianlge represent 2nd peer rating.

TABLE 13

OBLIQUE ROTATION SOLUTION*

PEER AND SELF RATINGS[a]

| | PEER RATINGS | | | | | | SELF RATINGS | | |
|---|---|---|---|---|---|---|---|---|---|
| | FACTOR 1 | | FACTOR 2 | | FACTOR 3 | | | | |
| ITEM | 1ST[b] | 2ND[c] | 1ST | 2ND | 1ST | 2ND | FACTOR 1 | FACTOR 2 | FACTOR 3 |
| 1 | 0.62 | -0.62 | 0.07 | 0.07 | -0.09 | 0.18 | 0.41 | 0.01 | 0.18 |
| 2 | -0.07 | 0.14 | -1.03 | -0.60 | 0.07 | 0.17 | 0.00 | -0.76 | 0.04 |
| 3 | 0.49 | -0.70 | 0.04 | -0.02 | 0.19 | -0.13 | 0.43 | -0.06 | -0.02 |
| 4 | 0.30 | -0.30 | -0.11 | -0.14 | -0.46 | -0.47 | 0.16 | -0.08 | 0.55 |
| 5 | 0.68 | -0.59 | 0.08 | 0.08 | 0.00 | 0.08 | 0.69 | 0.03 | -0.09 |
| 6 | 0.29 | -0.19 | 0.02 | 0.01 | -0.54 | -0.62 | 0.15 | 0.08 | 0.57 |
| 7 | 0.58 | -0.66 | -0.02 | -0.01 | -0.02 | 0.10 | 0.52 | 0.14 | 0.13 |
| 8 | -0.01 | 0.02 | 0.04 | -0.04 | -0.66 | 0.70 | 0.04 | 0.07 | 0.70 |
| 9 | 0.44 | -0.35 | -0.07 | 0.01 | -0.13 | 0.26 | 0.54 | -0.03 | -0.05 |
| 10 | 0.12 | 0.04 | -0.13 | -0.08 | -0.60 | 0.70 | -0.09 | -0.11 | 0.66 |
| 11 | 0.45 | -0.42 | -0.01 | -0.01 | -0.34 | 0.33 | 0.46 | 0.10 | 0.30 |
| 12 | 0.59 | -0.68 | 0.00 | -0.04 | -0.01 | -0.01 | 0.52 | 0.09 | -0.05 |
| 13 | -0.04 | -0.02 | -0.11 | 0.01 | -0.81 | 0.79 | -0.09 | 0.05 | 0.76 |
| 14 | -0.64 | -0.40 | 0.01 | 0.11 | -0.14 | 0.41 | 0.48 | 0.01 | 0.27 |
| 15 | 0.42 | -0.30 | -0.07 | -0.15 | -0.29 | 0.48 | 0.42 | -0.12 | 0.39 |
| 16 | -0.07 | 0.06 | -0.05 | 0.01 | -0.83 | 0.88 | -0.10 | -0.12 | 0.72 |
| 17 | 0.20 | 0.01 | -0.06 | 0.07 | -0.40 | 0.61 | 0.26 | -0.01 | 0.34 |
| 18 | 0.61 | -0.73 | -0.08 | 0.03 | 0.22 | -0.06 | 0.31 | -0.01 | -0.03 |
| 19 | | | | | | | | | |
| 20 | -0.02 | 0.10 | 0.51 | 0.96 | 0.13 | 0.15 | -0.01 | 0.76 | -0.01 |
| 21 | | | | | | | | | |
| % Common Var Accounted for by Factor. | 0.39 | 0.35 | 0.16 | 0.15 | 0.36 | 0.42 | 0.31 | 0.16 | 0.39 |

* Obliain rotation

a Loadinga are based on the factor pattern aatrix.

b 1st peer rating

c 2nd peer rating

TABLE 14

SUMMARY OF PERFORMANCE RATING FACTORS

| SCALE / ITEM[b] | LOADING[a] |
|---|---|
| **INTERPERSONAL/TEAMWORK ORIENTATION** | |
| 1. This person did not keep the morale of the group high. | 0.71 |
| 3. This person is not someone I would want to work with in a real job. | 0.56 |
| 5. This person was warm and supportive. | 0.67 |
| 7. This person was not a good team member. | 0.72 |
| 9. This person placed the good of the group above him/herself. | 0.58 |
| 11. This person did not maintain definite standards of performance. | 0.52 |
| 12. This person did not put suggestions made by the group into operation. | 0.75 |
| 14. This person helped the team stick together. | 0.65 |
| 15. This person saw to it that the work of group members was coordinated. | 0.48 |
| 18. This person was not friendly and approachable. | |
| Pct of Var = 23.9 | |
| **GENDER SPECIFICITY** | |
| 2. This person acted in a masculine way. | 0.89 |
| 20. This person acted in a feminine way. | 0.85 |
| Pct of Var = 10.0 | |
| **TASK/LEADERSHIP ORIENTATION** | |
| 4. This person did not make important decisions for accomplishing the goal. | 0.60 |
| 6. This person did not put the most effort into accomplishing the goal. | 0.74 |
| 8. This person was not the hardest worker in the group. | 0.75 |
| 10. This person had the best ideas for accomplishing the goal. | 0.70 |
| 13. This person was the best worker in the group. | 0.84 |
| 16. This person was the leader of the group. | 0.86 |
| 17. This person stressed getting the job done. | 0.61 |
| Pct of Var = 25.3 | |

[a] Factor loadings based on a Principle Components analysis using items averaged over all three ratings The factor structure for this analysis matched the PAF analyses with Oblimin rotation.

[b] For the self rating, items were identically worded except 'This person' = 'I'.

TABLE 15

SUMMARY OF ROLE CONFLICT/ROLE AMBIGUITY SCALES

SCALE

ROLE AMBIGUITY

ITEM

1. My authority on this task matches the responsibilities assigned to me.
2. I did not know what was expected of me.
3. My reponsibilities were clearly defined
4. I felt certain about how much authority I had on this task.
5. I know what my responsibilities were.
6. I had clear planned goals and objectives for this task.
7. The planned goals and objectives were not clear.
8. I know exactly what was expected of me.
9. I worked under unclear policies and guidelines.
10. Explanations were clear of what had to be done on this task.
11. I did not know how to improve my performance on this task.

alpha = .83

ROLE CONFLICT

ITEM

12. There were unreasonable pressures for better performance.
13. I was often asked to do things which were against my better judgment.
14. I received assignments without adequate resources and materials to execute it.
15. I received incompatible requests from two or more people.
16. I had to do things that should have been done differently under different conditions.
17. The resources and materials that I received were enough for my job.
18. My knowledge and skills were enough for doing the task.
19. I knew how to allocate my efforts to be more effective.
20. I was generally able to reconcile conflicting demands from different people.
21. I frequently did not know how to handle problems that occurred on this task.

alpha = .76

Table 16

SEX BY GROUP COMPOSITION

| VARIABLE | SOURCE | | DF | MS | F | p | $\omega^2$ |
|---|---|---|---|---|---|---|---|
| Interpersonal/ Teaawork - Peer | Sex | (a) | 1 | 1.64 | 2.85 | 0.093 | |
| | Grp comp | (b) | 2 | 1.38 | 2.4 | 0.093 | |
| | a X b | | 2 | 0.32 | 0.58 | 0.574 | |
| | error | | 202 | 0.575 | | | |
| Gender apecificity Peer | Sex | (a) | 1 | 227.46 | 283.97 | 0.0001 | 0.58 |
| | Grp comp | (b) | 2 | 0.768 | 0.959 | 0.385 | |
| | a X b | | 2 | 0.35 | 0.437 | 0.646 | |
| | error | | 202 | 0.801 | | | |
| Task/Leadership Peer | Sex | (a) | 1 | 9.82 | 10.04 | 0.002 | 0.04 |
| | Grp comp | (b) | 2 | 1.61 | 1.65 | 0.195 | |
| | a X b | | 2 | 0.62 | 0.63 | 0.532 | |
| | error | | 202 | 0.978 | | | |
| Interpersonal/ Teaawork - Self | Sex | (a) | 1 | 0.968 | 1.85 | 0.175 | |
| | Grp comp | (b) | 2 | 0.498 | 0.953 | 0.387 | |
| | a X b | | 2 | 0.084 | 0.161 | 0.851 | |
| | error | | 202 | 0.522 | | | |
| Gender apecificity Self | Sex | (a) | 1 | 240.04 | 215.09 | 0.0001 | 0.51 |
| | Grp comp | (b) | 2 | 0.71 | 0.63 | 0.531 | |
| | a X b | | 2 | 0.5 | 0.45 | 0.641 | |
| | error | | 202 | 1.12 | | | |
| Task/Leadership Self | Sex | (a) | 1 | 3.09 | 3.25 | 0.073 | |
| | Grp comp | (b) | 2 | 2.86 | 3.01 | 0.052 | |
| | a X b | | 2 | 1.8 | 1.89 | 0.154 | |
| | error | | 202 | 0.95 | | | |
| JDI Work | Sex | (a) | 1 | 9.48 | 0.13 | 0.72 | |
| | Grp comp | (b) | 2 | 156.35 | 2.16 | 0.12 | |
| | a X b | | 2 | 89.19 | 1.23 | 0.29 | |
| | error | | 202 | 72.5 | | | |
| JDI Coworker | Sex | (a) | 1 | 227.41 | 2.71 | 0.101 | |
| | Grp comp | (b) | 2 | 55.65 | 0.66 | 0.52 | |
| | a X b | | 2 | 6.19 | 0.07 | 0.93 | |
| | error | | 202 | 83.83 | | | |
| Role Conflict | Sex | (a) | 1 | 3.6 | 5.86 | 0.02 | 0.02 |
| | Grp comp | (b) | 2 | 1.48 | 2.4 | 0.09 | |
| | a X b | | 2 | 0.19 | 0.31 | 0.73 | |
| | error | | 202 | 0.62 | | | |
| Role Ambiguity | Sex | (a) | 1 | 0.05 | 0.06 | 0.8 | |
| | Grp comp | (b) | 2 | 1.86 | 2.34 | 0.098 | |
| | a X b | | 2 | 0.83 | 1.04 | 0.354 | |
| | error | | 202 | 0.79 | | | |

Table 17

SEX BY GROUP COMPOSITION
MEANS & STANDARD DEVIATIONS

| SCALE | MALES | | | | | | FEMALE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FEMALE TOKEN | | BALANCED | | MALE TOKEN | | FEMALE TOKEN | | BALANCED | | MALE TOKEN | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Interpersonal-peer | 5.14 | (.74) | 5.64 | (.49) | 5.42 | (.59) | 5.10 | (.45) | 5.28 | (.69) | 5.19 | (.94) |
| Gender-peer | 2.90 | (.98) | 2.75 | (.73) | 2.55 | (.76) | 5.26 | (.82) | 5.21 | (1.11) | 5.19 | (.85) |
| Leadership-peer | 4.55 | (.97) | 4.94 | (.98) | 4.73 | (.83) | 4.05 | (.83) | 4.18 | (1.06) | 4.45 | (1.08) |
| Interpersonal-self | 5.30 | (.67) | 5.60 | (.56) | 5.38 | (.99) | 5.33 | (.77) | 5.66 | (.65) | 5.57 | (.70) |
| Gender-self | 2.62 | (1.01) | 2.32 | (.93) | 2.78 | (.96) | 5.06 | (1.12) | 5.14 | (1.29) | 5.18 | (1.06) |
| Leadership-self | 4.61 | (.99) | 4.86 | (.80) | 4.52 | (1.15) | 3.95 | (.79) | 4.67 | (1.21) | 4.50 | (.92) |
| JDI Work | 34.03 | (9.40) | 38.86 | (8.29) | 36.59 | (8.42) | 36.88 | (7.84) | 39.28 | (7.16) | 34.85 | (8.26) |
| JDI Coworker | 44.60 | (10.17) | 47.14 | (10.13) | 44.36 | (12.76) | 47.75 | (4.98) | 48.70 | (7.08) | 47.04 | (8.12) |
| Role Conflict | 2.89 | (.84) | 2.70 | (.63) | 3.02 | (.92) | 2.72 | (.82) | 2.32 | (.57) | 2.68 | (.74) |
| Role Ambiguity | 3.38 | (.89) | 3.14 | (.85) | 3.27 | (.97) | 3.55 | (.88) | 3.30 | (1.15) | 3.04 | (.81) |

Table 18

SEX BY TOKEN TYPE (TOKENS ONLY)

| VARIABLE | SOURCE | | DF | MS | F | p | $\omega^2$ |
|---|---|---|---|---|---|---|---|
| Interpersonal/ Teamwork - Peer | Sex | (a) | 1 | 1.31 | 4.70 | 0.04 | 0.08 |
| | Token type | (b) | 2 | 0.19 | 0.71 | 0.50 | |
| | a X b | | 2 | 0.33 | 1.17 | 0.32 | |
| | error | | 39 | | | | |
| Gender specificity Peer | Sex | (a) | 1 | 77.84 | 120.20 | 0.00 | 0.73 |
| | Token Type | (b) | 2 | 0.65 | 1.01 | 0.37 | |
| | a X b | | 2 | 0.68 | 1.05 | 0.36 | |
| | error | | 39 | 0.65 | | | |
| Task/Leadership Peer | Sex | (a) | 1 | 5.49 | 7.26 | 0.01 | 0.12 |
| | Token Type | (b) | 2 | 0.03 | 0.04 | 0.96 | |
| | a X b | | 2 | 1.06 | 1.40 | 0.26 | |
| | error | | 39 | 0.76 | | | |
| Interpersonal/ Teamwork - Self | Sex | (a) | 1 | 0.54 | 0.68 | 0.42 | |
| | Token Type | (b) | 2 | 0.04 | 0.06 | 0.95 | |
| | a X b | | 2 | 1.37 | 1.71 | 0.19 | |
| | error | | 39 | 0.80 | | | |
| Gender specificity Self | Sex | (a) | 1 | 66.21 | 69.12 | 0.00 | 0.56 |
| | Token Type | (b) | 2 | 0.73 | 0.76 | 0.47 | |
| | a X b | | 2 | 3.11 | 3.25 | 0.05 | 0.02 |
| | error | | 39 | 0.96 | | | |
| Task/Leadership Self | Sex | (a) | 1 | 2.37 | 2.33 | 0.14 | |
| | Token Type | (b) | 2 | 1.71 | 1.69 | 0.20 | |
| | a X b | | 2 | 0.56 | 0.55 | 0.56 | |
| | error | | 39 | 1.02 | | | |
| JDI Work | Sex | (a) | 1 | 0.00 | 0.00 | 1.00 | |
| | Token Type | (b) | 2 | 2.57 | 0.04 | 0.97 | |
| | a X b | | 2 | 35.15 | 0.49 | 0.61 | |
| | error | | 39 | 71.19 | | | |
| JDI Coworker | Sex | (a) | 1 | 156.95 | 1.64 | 0.21 | |
| | Token Type | (b) | 2 | 47.17 | 0.49 | 0.61 | |
| | a X b | | 2 | 82.94 | 0.87 | 0.43 | |
| | error | | 39 | 95.62 | | | |
| Role Conflict | Sex | (a) | 1 | 1.11 | 1.49 | 0.23 | |
| | Token Type | (b) | 2 | 0.17 | 0.23 | 0.80 | |
| | a X b | | 2 | 1.66 | 2.24 | 0.12 | |
| | error | | 42 | 0.74 | | | |
| Role Ambiguity | Sex | (a) | 1 | 1.99 | 2.40 | 0.13 | |
| | Token Type | (b) | 2 | 0.14 | 0.16 | 0.85 | |
| | a X b | | 2 | 0.03 | 0.03 | 0.97 | |
| | error | | 42 | 0.83 | | | |

Table 19

SEX BY TOKEN TYPE
MEANS & STANDARD DEVIATIONS

| SCALE | MALES | | | | | | FEMALE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Qn | | Qaa | | LQaa | | Qn | | Qaa | | LQaa | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Interpersonal-peer | 4.89 | (.82) | 4.47 | (.98) | 4.75 | (.73) | 3.76 | (.86) | 4.32 | (.84) | 3.87 | (.90) |
| Gender-peer | 2.56 | (.88) | 2.60 | (.86) | 2.60 | (.38) | 5.33 | (.81) | 4.85 | (.97) | 5.69 | (.50) |
| Leadership-peer | 4.89 | (.82) | 4.47 | (.98) | 4.47 | (.73) | 3.76 | (.86) | 4.32 | (.84) | 3.87 | (.90) |
| Interpersonal-self | 5.28 | (.95) | 5.63 | (.47) | 4.92 | (1.68) | 5.45 | (1.16) | 5.27 | (.57) | 5.79 | (.62) |
| Gender-self | 3.06 | (.94) | 2.75 | (1.01) | 2.38 | (2.38) | 5.00 | (.63) | 4.67 | (1.35) | 5.93 | (.73) |
| Leadership-self | 4.34 | (1.17) | 4.81 | (.93) | 3.83 | (1.59) | 3.62 | (.66) | 4.11 | (.71) | 3.84 | (1.00) |
| JDI Work | 37.75 | (6.04) | 35.90 | (7.46) | 35.40 | (13.43) | 34.17 | (8.4) | 36.56 | (5.94) | 38.29 | (10.52) |
| JDI Coworker | 43.50 | (11.87) | 47.60 | (9.38) | 39.80 | (19.74) | 45.83 | (5.88) | 47.44 | (4.59) | 49.14 | (5.46) |
| Role Conflict | 3.17 | (.67) | 2.76 | (1.03) | 3.20 | (1.04) | 2.37 | (.74) | 3.16 | (.80) | 2.68 | (.86) |
| Role Ambiguity | 3.39 | (.88) | 3.17 | (.92) | 3.26 | (1.24) | 3.76 | (.72) | 3.68 | (.86) | 3.60 | (.83) |

Table 20a

SEX BY TOKTYPE BY SUBJECT TYPE

| VARIABLE | SOURCE | | DF | MS | F | p | $\omega^2$ |
|---|---|---|---|---|---|---|---|
| Interpersonal/ Teamwork - Peer | Sex | (a) | 1 | 0.48 | 0.79 | 0.37 | |
| | Token type | (b) | 2 | 1.26 | 2.09 | 0.13 | |
| | Subject Type | (c) | 1 | 0.12 | 0.19 | 0.66 | |
| | a X b | | 2 | 0.62 | 1.02 | 0.36 | |
| | a X c | | 1 | 1.66 | 0.76 | 0.1 | |
| | b X c | | 2 | 0.19 | 0.32 | 0.73 | |
| | a X b X c | | 2 | 0.09 | 0.14 | 0.87 | |
| | error | | 165 | 0.6 | | | |
| Gender Specificity Peer | Sex | (a) | 1 | 200.36 | 260.03 | 0.0001 | 0.59 |
| | Token type | (b) | 2 | 0.87 | 1.12 | 0.33 | |
| | Subject Type | (c) | 1 | 0.42 | 0.55 | 0.46 | |
| | a X b | | 2 | 1.49 | 1.93 | 0.15 | |
| | a X c | | 1 | 1.21 | 1.57 | 0.21 | |
| | b X c | | 2 | 0.85 | 1.1 | 0.33 | |
| | a X b X c | | 2 | 0.24 | 0.32 | 0.73 | |
| | error | | 165 | 0.77 | | | |
| Task/Leadership Peer | Sex | (a) | 1 | 5.26 | 5.43 | 0.02 | 0.02 |
| | Token type | (b) | 2 | 0.22 | 0.22 | 0.8 | |
| | Subject Type | (c) | 1 | 0.81 | 0.83 | 0.36 | |
| | a X b | | 2 | 2.04 | 2.11 | 0.13 | |
| | a X c | | 1 | 3.09 | 3.12 | 0.08 | |
| | b X c | | 2 | 0.61 | 0.63 | 0.53 | |
| | a X b X c | | 2 | 0.24 | 0.24 | 0.78 | |
| | error | | 165 | 0.97 | | | |
| Interpersonal/ Teamwork - Self | Sex | (a) | 1 | 1.94 | 3.56 | 0.06 | |
| | Token type | (b) | 2 | 0.22 | 0.4 | 0.67 | |
| | Subject Type | (c) | 1 | 0.09 | 0.17 | 0.66 | |
| | a X b | | 2 | 0.99 | 1.81 | 0.17 | |
| | a X c | | 1 | 0.01 | 0.02 | 0.87 | |
| | b X c | | 2 | 0.22 | 0.41 | 0.67 | |
| | a X b X c | | 2 | 1.09 | 2.02 | 0.14 | |
| | error | | 165 | 0.54 | | | |
| Gender Specificity Self | Sex | (a) | 1 | 201.9 | 187.95 | 0.0001 | 0.51 |
| | Token type | (b) | 2 | 0.76 | 0.73 | 0.49 | |
| | Subject Type | (c) | 1 | 0.11 | 0.1 | 0.75 | |
| | a X b | | 2 | 2.95 | 2.74 | 0.07 | |
| | a X c | | 1 | 0.02 | 0.02 | 0.89 | |
| | b X c | | 2 | 0.36 | 0.33 | 0.72 | |
| | a X b X c | | 2 | 1.8 | 1.68 | 0.19 | |
| | error | | 165 | 1.07 | | | |

Table 20b

SEX BY TOKTYPE BY SUBJECT TYPE

| VARIABLE | SOURCE | | DF | MS | F | p | $\omega^2$ |
|---|---|---|---|---|---|---|---|
| Task/Leadership . | | | | | | | |
| Self | Sex | (a) | 1 | 2.7 | 2.9 | 0.09 | |
| | Token type | (b) | 2 | 1.54 | 1.65 | 0.19 | |
| | Subject Type | (c) | 1 | 7.76 | 8.34 | 0.004 | 0.04 |
| | a X b | | 2 | 1 | 1.08 | 0.34 | |
| | a X c | | 1 | 1.03 | 1.11 | 0.29 | |
| | b X c | | 2 | 0.99 | 1.07 | 0.35 | |
| | a X b X c | | 2 | 0.21 | 0.23 | 0.79 | |
| | error | | 165 | 0.93 | | | |
| JDI Work | | | | | | | |
| | Sex | (a) | 1 | 10.43 | 0.14 | 0.71 | |
| | Token type | (b) | 2 | 41.62 | 0.56 | 0.57 | |
| | Subject Type | (c) | 1 | 91.04 | 1.22 | 0.27 | |
| | a X b | | 2 | 25.72 | 0.34 | 0.71 | |
| | a X c | | 1 | 10.95 | 0.15 | 0.7 | |
| | b X c | | 2 | 69.76 | 0.93 | 0.4 | |
| | a X b X c | | 2 | 53.79 | 0.72 | 0.49 | |
| | error | | 165 | 74.69 | | | |
| JDI Coworker | | | | | | | |
| | Sex | (a) | 1 | 337.11 | 4.23 | 0.04 | 0.02 |
| | Token type | (b) | 2 | 76.63 | 0.96 | 0.36 | |
| | Subject Type | (c) | 1 | 0.96 | 0.01 | 0.91 | |
| | a X b | | 2 | 32.22 | 0.4 | 0.67 | |
| | a X c | | 1 | 10390 | 0.14 | 0.71 | |
| | b X c | | 2 | 322.35 | 4.05 | 0.02 | 0.02 |
| | a X b X c | | 2 | 142.17 | 1.79 | 0.17 | |
| | error | | 165 | 79.64 | | | |
| Role Conflict | | | | | | | |
| | Sex | (a) | 1 | 2.76 | 4.13 | 0.04 | 0.02 |
| | Token type | (b) | 2 | 0.4 | 0.59 | 0.55 | |
| | Subject Type | (c) | 1 | 0.5 | 0.74 | 0.39 | |
| | a X b | | 2 | 1.16 | 1.73 | 0.18 | |
| | a X c | | 1 | 0.03 | 0.04 | 0.84 | |
| | b X c | | 2 | 0.04 | 0.05 | 0.95 | |
| | a X b X c | | 2 | 1.55 | 2.32 | 0.1 | |
| | error | | 183 | 0.67 | | | |
| Role Ambiguity | | | | | | | |
| | Sex | (a) | 1 | 0.03 | 0.04 | 0.85 | |
| | Token type | (b) | 2 | 0.05 | 0.06 | 0.94 | |
| | Subject Type | (c) | 1 | 2.92 | 3.92 | 0.05 | 0.01 |
| | a X b | | 2 | 0.16 | 0.22 | 0.81 | |
| | a X c | | 1 | 5.23 | 7.02 | 0.009 | 0.03 |
| | b X c | | 2 | 0.62 | 0.83 | 0.44 | |
| | a X b X c | | 2 | 0.33 | 0.44 | 0.65 | |
| | error | | 183 | 0.75 | | | |

TABLE 21a

SEX X TOKEN TYPE X SUBJECT TYPE
MEANS AND STANDARD DEVIATIONS

| SCALE: | TOKEN | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MALES | | | | | | FEMALES | | |
| | Qn | | Qaa | | LQaa | | Qn | | Qaa | | LQaa | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Interpersonal - Peer | 5.66 | (.56) | 5.16 | (.60) | 5.46 | (.54) | 5.04 | (.42) | 5.11 | (.45) | 5.07 | (.55) |
| Gender - Peer | 2.56 | (.88) | 2.6 | (.88) | 5.33 | (.38) | 2.51 | (.81) | 3.16 | (1.02) | 3.02 | (1.03) |
| Leadership - Peer | 4.89 | (.82) | 4.47 | (.98) | 4.75 | (.73) | 3.76 | (.86) | 4.32 | (.84) | 3.87 | (.89) |
| Interpersonal - Self | 5.28 | (.95) | 5.63 | (.47) | 4.92 | (1.68) | 5.45 | (1.16) | 5.27 | (.57) | 5.79 | (.62) |
| Gender - Self | 3.06 | (.94) | 2.75 | (1.81) | 2.3 | (.76) | 5.6 | (.63) | 4.67 | (1.35) | 5.93 | (.73) |
| Leadership - Self | 4.34 | (1.17) | 4.81 | (.93) | 3.83 | (1.59) | 3.62 | (.66) | 4.11 | (.71) | 3.84 | (1.00) |
| JDI Work | 57.75 | (6.04) | 35.9 | (7.46) | 35.4 | (13.43) | 34.17 | (8.40) | 36.55 | (5.94) | 38.28 | (10.52) |
| JDI Coworker | 43.5 | (11.07) | 47.6 | (9.38) | 39.8 | (19.74) | 45.83 | (5.88) | 47.44 | (4.59) | 49.14 | (5.46) |
| Role Conflict | 3.17 | (.67) | 2.76 | (1.03) | 3.2 | (1.04) | 2.37 | (.74) | 3.16 | (.80) | 2.68 | (.82) |
| Role Ambiguity | 3.26 | (.88) | 3.17 | (.92) | 3.26 | (1.24) | 3.79 | (.72) | 3.68 | (.86) | 3.62 | (.83) |

TABLE 21b

SEX X TOKEN TYPE X SUBJECT TYPE
MEANS AND STANDARD DEVIATIONS ()

DOMINANT

| SCALE: | MALES | | | | | | FEMALES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Qn | | Qaa | | LQaa | | Qn | | Qaa | | LQaa | |
| | M | SD | M | SD | M | SD | M | SD | M | SD | M | SD |
| Interpersonal - Peer | 5.37 | (.62) | 4.83 | (.80) | 5.22 | (.75) | 5.24 | (.78) | 5.04 | (.95) | 5.45 | (1.09) |
| Gender - Peer | 5.16 | (.80) | 5.11 | (.83) | 5.37 | (.95) | 5.16 | (.80) | 5.11 | (.83) | 5.37 | (.95) |
| Leadership - Peer | 4.65 | (.91) | 4.15 | (1.01) | 4.85 | (.89) | 4.49 | (.88) | 4.44 | (1.22) | 4.44 | (1.10) |
| Interpersonal - Self | 5.51 | (.54) | 5.26 | (.84) | 5.15 | (.61) | 5.65 | (.69) | 5.61 | (.70) | 5.47 | (.71) |
| Gender - Self | 2.74 | (.93) | 2.58 | (1.17) | 2.55 | (1.01) | 5.16 | (1.09) | 5.1 | (.94) | 5.23 | (1.27) |
| Leadership - Self | 4.70 | (.84) | 4.65 | (1.13) | 4.49 | (.97) | 4.37 | (.76) | 4.66 | (1.05) | 4.62 | (.75) |
| JDI Work | 35.9 | (8.77) | 33.95 | (9.51) | 32.36 | (10.19) | 38.56 | (8.24) | 32.73 | (8.34) | 34.4 | (6.31) |
| JDI Coworker | 49.29 | (5.02) | 39.21 | (13.45) | 44.68 | (8.81) | 50.12 | (4.94) | 45.27 | (8.27) | 45.8 | (10.19) |
| Role Conflict | 2.7 | (.92) | 2.91 | (.81) | 3.08 | (.79) | 2.65 | (.75) | 2.64 | (.79) | 2.63 | (.74) |
| Role Ambiguity | 3.08 | (.70) | 3.62 | (.77) | 3.42 | (1.11) | 3.01 | (.72) | 3.02 | (.71) | 3.01 | (1.09) |

TABLE 22

ZERO-ORDER CORRELATIONS OF VARIABLES
IN HIERARCHICAL REGRESSION ANALYSIS

SCALE:

| SCALE: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Interpersonal/ Teamwork- Peer | | | | | | | | | | |
| 2. Task/Leadership Peer | 0.82 *** | | | | | | | | | |
| 3. Interpersonal/ Teamwork- Self | 0.08 | 0.07 | | | | | | | | |
| 4. Task/Leadership Self | -0.33 | 0.49 * | 0.43 * | | | | | | | |
| 5. Composite WAMS | -0.02 | -0.10 | 0.11 | 0.07 | | | | | | |
| 6. Composite CM | 0.00 | 0.13 | 0.09 | 0.42 * | -0.24 | | | | | |
| 7. Dummy Variable 1- Select Condition | 0.07 | -0.13 | 0.18 | -0.21 | 0.16 | -0.18 | | | | |
| 8. Dummy Variable 2- Select Condition | 0.17 | 0.36 | -0.27 | 0.27 | 0.09 | 0.28 | -0.48 * | | | |
| 9. WAMS X Dummy 1 | 0.07 | -0.16 | 0.22 | -0.10 | 0.27 | -0.22 | 0.99 *** | -0.48 * | | |
| 10. WAMS X Dummy 2 | 0.18 | 0.38 * | -0.26 | 0.28 | 0.15 | 0.26 | -0.48 | 0.99 *** | -0.47 * | |

N = 21, * = p(.05, ** = p(.01, *** = p(.001.

TABLE 23

HIERARCHICAL REGRESSION
PREDICTING PEER RATINGS

| Source entered on step[a] | Predicting: | df | $R^2$ | $R^2_{adj}$ | $\Delta R^2$ | MS | F | p |
|---|---|---|---|---|---|---|---|---|
| | Interpersonal/ Teamwork | | | | | | | |
| 1. Selection Condition | | 2 | 0.06 | -0.04 | 0.06 | 0.11 | 0.58 | ns |
| residual | | 18 | | | | 0.19 | | |
| 2. Composite CM | | 3 | 0.06 | -0.10 | 0.00 | 0.00 | 0.01 | ns |
| residual | | 17 | | | | 0.20 | | |
| 3. Composite WAMS | | 4 | 0.07 | -0.16 | 0.01 | 0.01 | 0.04 | ns |
| residual | | 16 | | | | 0.21 | | |
| 4. Selection X WAMS | | 6 | 0.10 | -0.28 | 0.03 | 0.02 | 0.08 | ns |
| residual | | 14 | | | | 0.24 | | |
| | Task/Leadership Orientation | | | | | | | |
| 1. Selection Condition | | 2 | 0.13 | 0.04 | 0.13 | 0.96 | 1.41 | ns |
| residual | | 18 | | | | 0.68 | | |
| 2. Composite CM | | 3 | 0.14 | -0.02 | 0.00 | 0.00 | 0.01 | ns |
| residual | | 17 | | | | 0.72 | | |
| 3. Composite WAMS | | 4 | 0.16 | -0.05 | 0.02 | 0.08 | 0.10 | ns |
| residual | | 16 | | | | 0.75 | | |
| 4. Selection X WAMS | | 6 | 0.25 | -0.07 | 0.09 | 0.22 | 0.29 | ns |
| residual | | 14 | | | | 0.76 | | |

[a] Selection Condition is a dummy coded variable representing group membership.

TABLE 24

HIERARCHICAL REGRESSION
PREDICTING SELF RATINGS

| Source entered on step: | Predicting: | df | $R^2$ | $R^2$ adj | $\Delta R^2$ | MS | F | p |
|---|---|---|---|---|---|---|---|---|
| | Interpersonal/ Teamwork | | | | | | | |
| 1. Selection Condition[a] | | 2 | 0.07 | -0.03 | 0.07 | 0.44 | 0.71 | ns |
| residual | | 18 | | | | 0.58 | | |
| 2. Composite CM | | 3 | 0.10 | -0.05 | 0.03 | 0.12 | 0.20 | ns |
| residual | | 17 | | | | 0.59 | | |
| 3. Composite WAMS | | 4 | 0.14 | -0.08 | 0.03 | 0.09 | 0.15 | ns |
| residual | | 16 | | | | 0.61 | | |
| 4. Selection X WAMS | | 6 | 0.22 | -0.11 | 0.09 | 0.16 | 0.26 | ns |
| residual | | 14 | | | | 0.62 | | |
| | Task/Leadership Orientation | | | | | | | |
| 1. Selection Condition | | 2 | 0.08 | -0.02 | 0.08 | 0.52 | 0.78 | ns |
| residual | | 18 | | | | 0.66 | | |
| 2. Composite CM | | 3 | 0.20 | 0.06 | 0.12 | 0.54 | 0.88 | ns |
| residual | | 17 | | | | 0.61 | | |
| 3. Composite WAMS | | 4 | 0.23 | 0.04 | 0.03 | 0.11 | 0.15 | ns |
| residual | | 16 | | | | 0.62 | | |
| 4. Selection X WAMS | | 6 | 0.41 | 0.15 | 0.17 | 0.38 | 0.68 | ns |
| residual | | 14 | | | | 0.55 | | |

[a] Selection Condition is a dummy coded variable representing group membership.

TABLE 25

MEAN RESPONSES ON VAN SCORES

| | MALE | | FEMALE | | MARGINAL MEANS |
|---|---|---|---|---|---|
| | TOKEN | DOMINANT | TOKEN | DOMINANT | |
| QUALIFIED NORMAL | 5.69 (8) | 5.01 (13) | 5.99 (7) | 6.11 (21) | 5.72 |
| QUALIFIED AFFIRMATIVE ACTION | 5.78 (6) | 5.18 (21) | 5.84 (7) | 6.15 (21) | 5.74 |
| LESS QUALIFIED AFFIRMATIVE ACTION | 4.52 (3) | 5.05 (17) | 5.88 (5) | 5.88 (14) | 5.33 |
| | 5.33 | 5.09 | 5.9 | 6.05 | |

MARGINAL MEANS

MEAN TOKEN = 5.62 MEAN DOMINANT = 5.57

MEAN MALE = 5.21 MEAN FEMALE = 5.98

( ) = n

TABLE 26

INTERCORRELATION MATRIX OF
DEPENDENT MEASURES

SCALE:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. Interpersonal/ Teamwork- Peer | | | | | | | | | |
| 2. Gender Specificity Peer | -0.09 | | | | | | | | |
| | *** | ** | | | | | | | |
| 3. Task/Leadership Peer | 0.65 | -0.25 | | | | | | | |
| | | | * | | | | | | |
| 4. Interpersonal/ Teamwork- Self | 0.10 | 0.10 | 0.11 | | | | | | |
| | | ** | * | | | | | | |
| 5. Gender Specificity Self | -0.03 | 0.62 | -0.17 | 0.11 | | | | | |
| | * | ** | ** | ** | * | | | | |
| 6. Task/Leadership Self | 0.14 | -0.17 | 0.37 | 0.52 | -0.17 | | | | |
| | ** | | ** | ** | | *** | | | |
| 7. JDI- Work | 0.19 | -0.01 | 0.18 | 0.37 | 0.08 | 0.21 | | | |
| | *** | | | *** | | | *** | | |
| 8. JDI- Coworker | 0.21 | 0.08 | 0.07 | 0.42 | 0.11 | 0.08 | 0.31 | | |
| | | | | *** | * | ** | ** | ** | |
| 9. Role Conflict | 0.04 | -0.10 | -0.11 | -0.42 | -0.16 | -0.30 | -0.34 | -0.27 | |
| | | | | *** | | *** | ** | ** | ** |
| 10. Role Ambiguity | -0.03 | 0.02 | -0.06 | -0.40 | -0.02 | -0.39 | -0.38 | -0.19 | 0.45 |

| SCALE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

Data deleted on a pairwise basis, n=207 to 235. * = p(.05, ** = p(.01, *** = p(.001.

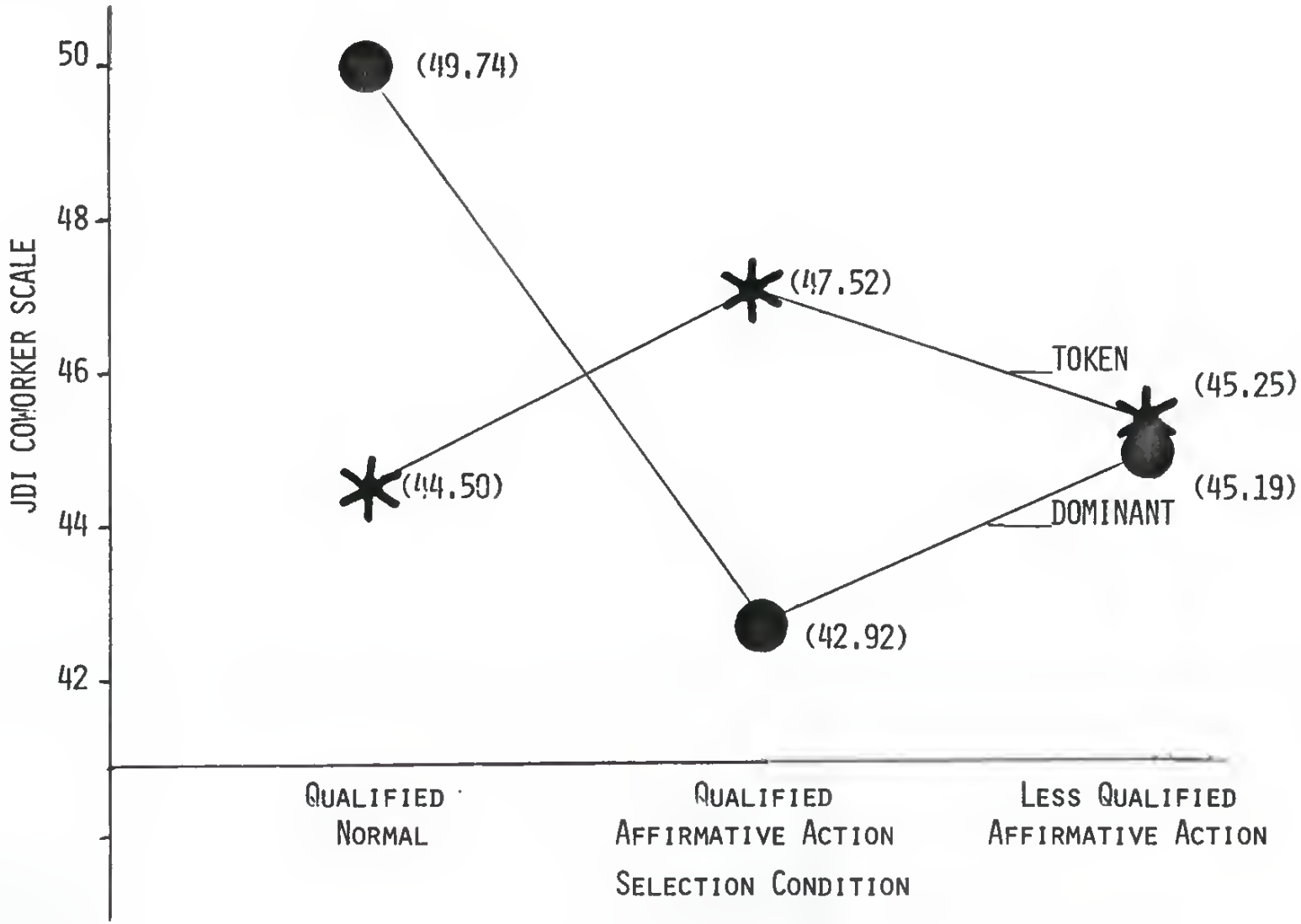
# Figure Captions

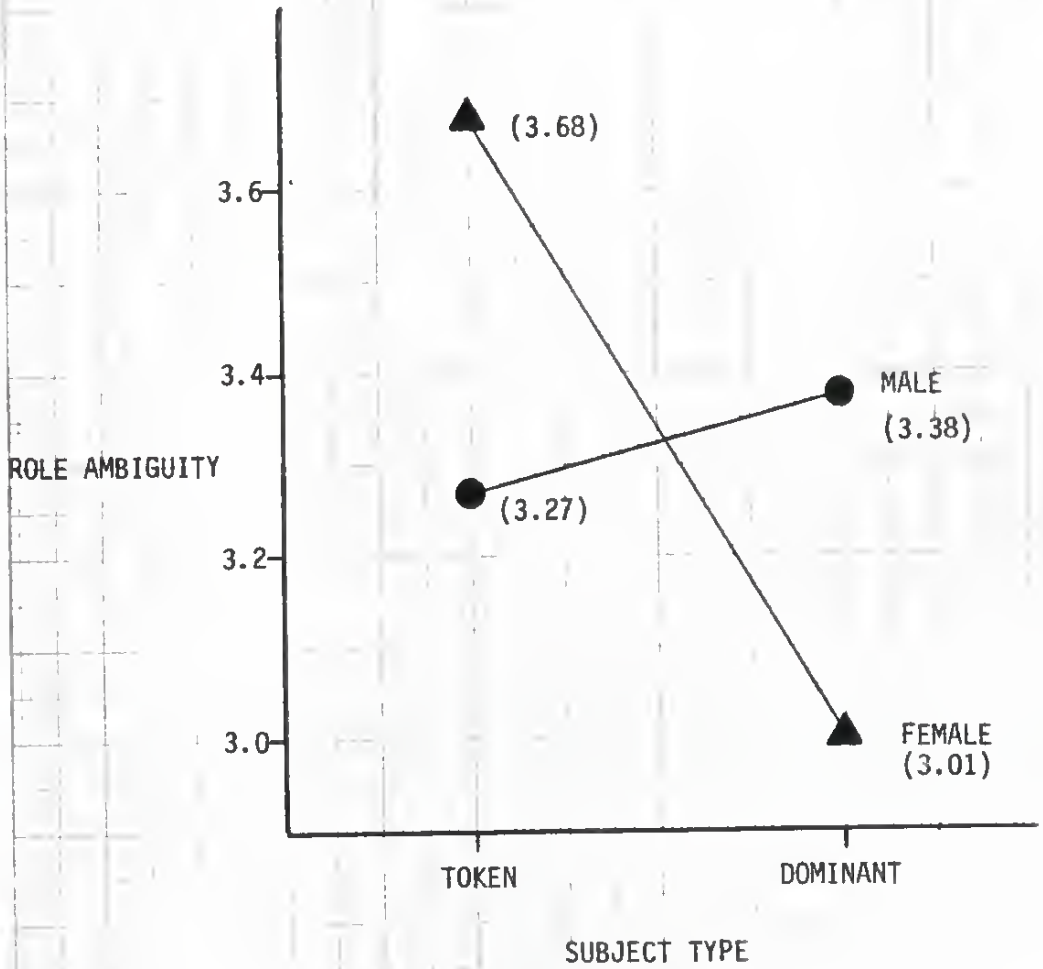
Figure 1: Selection Condition by Subject Type (Token or Dominant) Interaction for the dependent variable, JDI Coworker Scale.

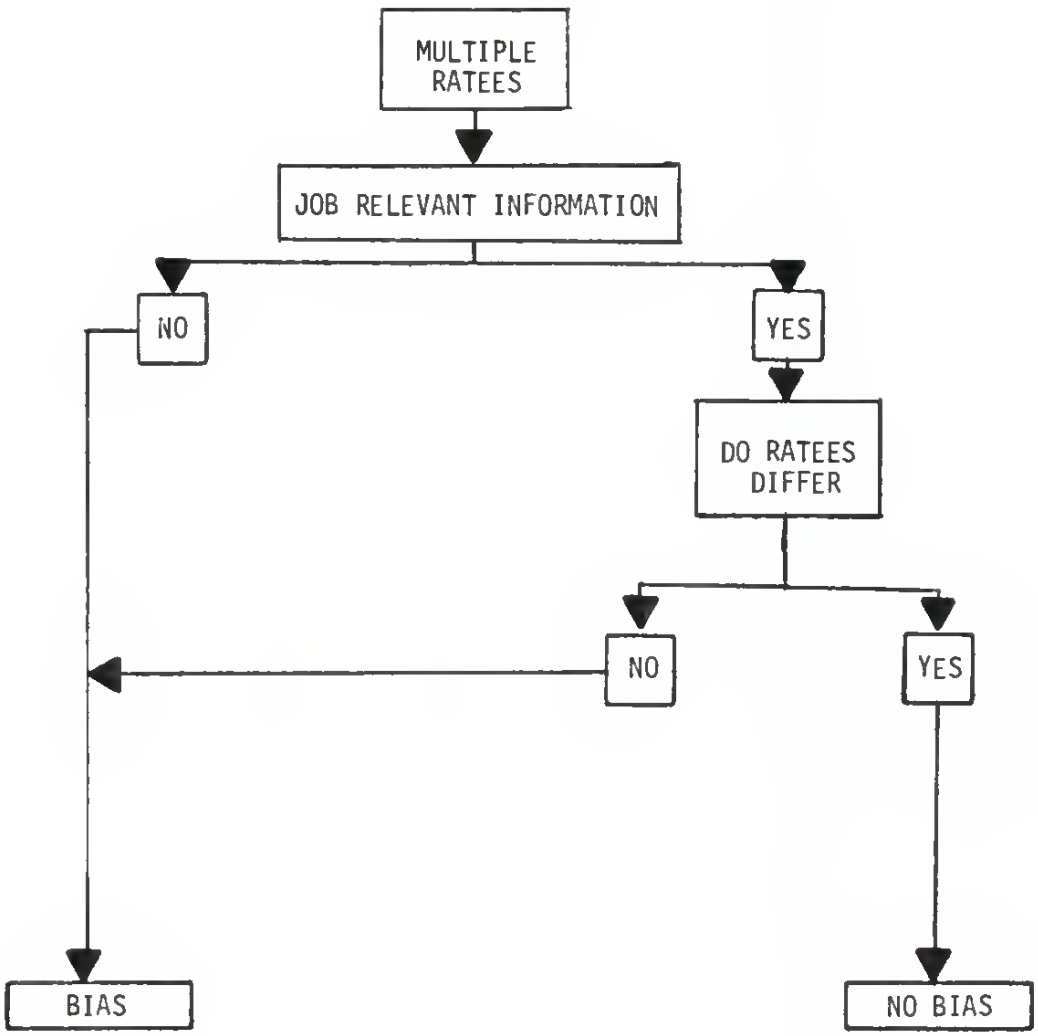
Figure 2: Sex of Subject by Subject Type Interaction for the dependent variable, Role Ambiguity.

Figure 3: Gender Bias in Personnel Ratings Model; Lahey, Stockdale, Downey and Astley, 1986.

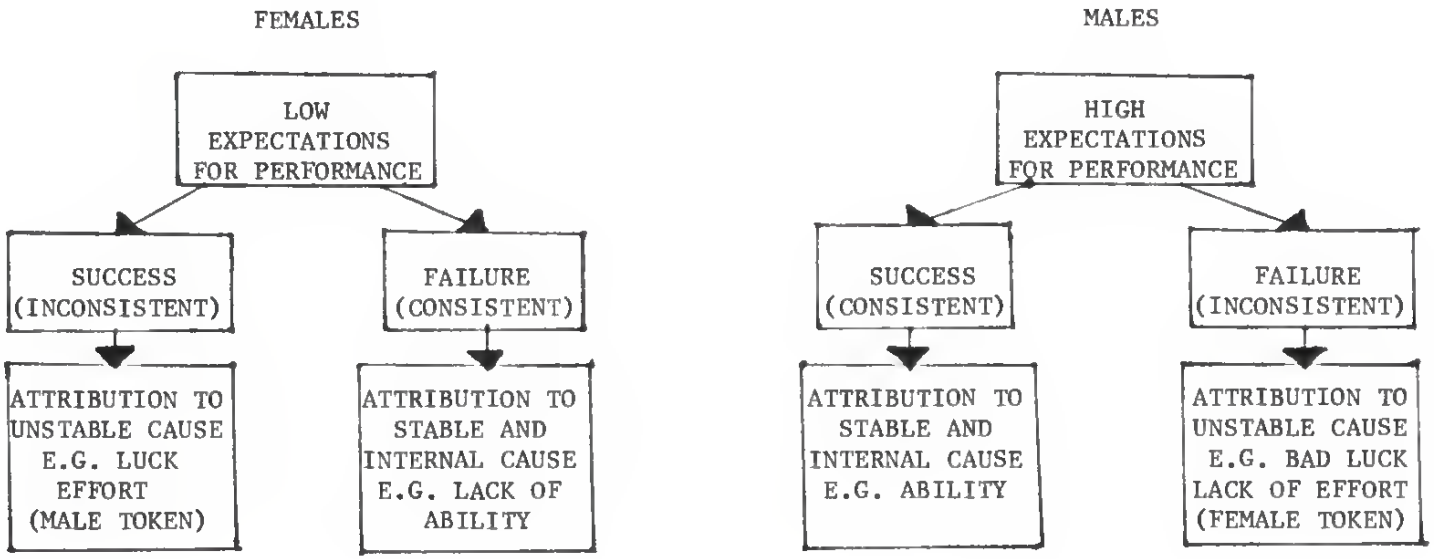
Figure 4: Model of Hypothesized Attribution Process for Tokenism Research; from Deaux, 1884.


50
48
46
44
42
JDI COWORKER SCALE
(49.74)
(47.52)
(44.50)
(42.92)
TOKEN
(45.25)
(45.19)
DOMINANT
QUALIFIED
NORMAL
QUALIFIED
AFFIRMATIVE ACTION
LESS QUALIFIED
AFFIRMATIVE ACTION
SELECTION CONDITION


(3.68)
3.6
3.4
MALE
(3.38)
ROLE AMBIGUITY
(3.27)
3.2
3.0
FEMALE
(3.01)
TOKEN
DOMINANT
SUBJECT TYPE




From: Lahey, Stockdale, Downey & Astley, 1986




From: Deaux, 1984

# TOKEN WOMEN IN WORK GROUPS: GREAT EXPECTATIONS?

by

MARGARET SUSAN STOCKDALE

B. S., Frostburg State College, 1983

---

AN ABSTRACT OF A MASTER'S THESIS

Submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Psychology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1986

## Abstract

Past research on gender has produced little evidence that men and women differ in regard to many psychological critera. Stronger evidence has been provided which suggests that men and women congruently treat sex or gender as a social category in order to process information about stereotypes and general expectations. In this regard, men and women are treated differently because they belong to different sex categories. Among managers, men are seen by both males and females as having the requisite characteristics necessary for successful performance, however women are not. Within this framework, hypotheses were made in regard to managerial team performance of male and female tokens. A token was defined as a member of one social category who belonged to a group in which all other group members belonged to another, higher social status. Past research has shown that tokens are expected by their dominant teammates to assume stereotypical roles, and to experience greater stress and lower productivity. In the present study, male tokens were expected to fare better than female tokens on the managerial task. The theoretical discussions posited by Kanter (1977) and Laws (1975) were used to generate the hypotheses about token

selection for group membership. It was expected that tokens selected for group membership because of their gender would be less successful in the team than tokens selected because of their ability. The criteria for team success were peer and self-performance ratings, satisfaction with the task and coworkers, role conflict, and role ambiguity. Analyses of the laboratory study using college students as subjects indicated that males were rated higher than females on the task/leadership dimension of the performance-rating scales, and that males and females were rated as behaving in gender-appropriate ways. However, no effects of tokenism or selection condition were found. The results are discussed in terms of the inadequacy of a laboratory study for testing the phenomenon of tokenism. Subjects did not appear to view the team task as realistic and as providing important, viable consequences. Further research is suggested to examine tokenism as an attribution for successful or unsuccessful group performance.