# LEADERSHIP PERCEPTIONS OF MEN AND WOMEN: A LEADERSHIP CATEGORIZATION VIEW
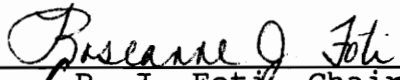
by

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(ABSTRACT)

This study investigated the leadership perceptions of males
and females from a leadership categorization (Lord, Foti, &
Phillips, 1982) perspective.  Subjects read vignettes of
male and female student leaders which differed in terms of
prototypicality of exhibited leader behaviors.  Various
measures were administered to assess leadership perceptions.
Results showed that prototypicality of behavior accounted
for general leadership impressions, while gender of the
target accounted for accuracy on a recognition of behav_ors
measure.  Subjects showed both a tendency to process
information veridically and to use categorization
principles.  These results are discussed in terms of
conditions that might emphasis gender as the basis for
categorization and subsequent leadership perceptions (i.e.,
task complexity).  It is these latter situations in which
stereotypes about female leaders will be detrimental.

Nebiat Gebre-Hiwot.  It is her love, support, understanding, and friendship which keeps me going.  Thanks for being overly patient -- you truly are remarkable.

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# Introduction

Heilman, Block, Martell, and Simon (1989) asked the question, 'has anything changed?', in addressing the characterizations of men and women managers. Optimistically, they concluded that women managers are perceived as possessing more attributes commonly associated with successful middle managers that they were thought to possess in 1973 (Schein, 1973). However, women, whether characterized as "managers" or "successful managers", are still thought to lack leadership ability. This finding is unfortunate in lieu of current trends in the labor market. According to the Bureau of Labor Statistics (1988, cited in Baumgardner, Lord, & Maher, 1991) women have increased 39 percent in management from the years 1960 to 1988. Assuming that most employees are promoted into management based on specific talents, particularly leadership ability, it appears the increasing number of female managers will still be inappropriately perceived to lack leadership ability. This study addresses the processes by which men and women are perceived in terms of leadership.

Leadership has proven to be an elusive concept to study in social and organizational psychology (Pfeffer, 1977). Pfeffer (1977) noted three problems with the investigation of leadership. First, ambiguities exist in the definition and measurement of the concept. Second,

researchers have produced little evidence demonstrating that leaders produce unequivocal effects on organizational outcomes. And finally, selection of leaders is not based strictly on meritocratic criteria (Pfeffer, 1977). Despite these apparent limitations surrounding leadership research, Pfeffer (1977) suggest that persistent emphasis on this concept stems from the "desire to believe in the effectiveness and importance of individual action, since individual action is more controllable than contextual variables (p. 109)." Hence, studying leadership might be viewed as the search to explicate the process of attributing causation to individual social actors (Pfeffer, 1977). As such, leadership perception invariably plays a major role.

Leadership perceptions as an integral part of attributing causality to a leader has received considerable attention (e.g., Pfeffer, 1977, Phillips & Lord, 1981). Furthermore, Baumgardner et al. (1991) note that "while perceptions may not be reality, they are used by perceivers to evaluate and subsequently distinguish leaders from nonleaders. They also provide a basis for social power and influence (p. 98)." Thus it remains important for management to be perceived accurately in terms of their leadership qualities. To the extent that women managers are falsely perceived to lack leadership skills, their ability to be an effective leader may be undermined. Consequently,

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it is necessary to first understand the processes behind leadership perception. Once these processes are delineated, then interventions to correct inaccurate perceptions can be devised and implemented.

The present study poses to investigate the leadership perception process by investigating recognition-based processes (Baumgardner et al., 1991). Baumgardner et al. (1991) defined recognition-based processes as involving both a prototype matching process and preexisting knowledge concerning attributes necessary for effective leadership. Hence, individual characteristics must be compared with those comprising the category of leadership (Baumgardner et al., 1991). Such a process occurs in the framework of the leadership categorization model (Lord, Foti, & Phillips, 1982) which will be applied in the present study. This model provides a framework to investigate ways in which implicit leadership theories (e.g., Guzzo, Wagner, Maguire, Herr, & Hawley, 1986; Rush, Thomas, & Lord, 1977) are utilized to form a prototype of leadership which, in turn, affects leadership perceptions. As such, a prototype of leader behavior plays an integral role in the leadership categorization model.

Given the current trends in the labor market, this study poses both scientific and practical implications. Baumgardner et al. (1991) suggest that leadership perception

studies should progress to examine the process by which men
and women leaders are perceived differently.  In the
framework of the leadership categorization model, this has
yet to be done.  For progress to be made in management and
organizational effectiveness, leadership perceptions in
general, and particularly those based on stereotypes must be
addressed. Furthermore, many of the findings that relate to
perceptions of women leaders may operate similarly for other
minority leaders in management (Baumgardner et al., 1991).

## Literature Review

### Implicit Leadership Theories

Investigations of leadership perception often fall under the realm of implicit leadership theories (e.g., Guzzo et al., 1986). Guzzo et al. (1986) suggest implicit theories entail organized knowledge and beliefs concerning some target stimulus. Wagner and Vallacher (1977; cited in Guzzo et al., 1986) suggest that characterization of implicit theories occurs according to their structure and dynamics of operation. Guzzo et al. (1986) defines structure as "the elements of an implicit theory and how they are linked (p. 280)." Considerable evidence has described the structure of implicit theories of leadership as highly consistent and stable (e.g., Rush et al., 1977; Weiss & Adler, 1981). Rush et al. (1977) evaluated the effects of implicit theories on consideration and initiating structure ratings from the Leader Behavior Description Questionnaire (LBDQ, form XII). In this study, 168 undergraduate subjects were given limited information concerning a department supervisor at a large corporation and subsequently asked to evaluate the supervisor on the dimensions of the 100-item LBDQ. Since use of a limited information paradigm eliminates any effects of exposure to explicit leader behaviors, evaluations revealed only the subject's preconceptions of leadership (Rush et al., 1977).

The 20-items scored for consideration and initiating structure were factor analyzed in order to discern the effects of implicit theories on the factor structure of these two subscales. The resulting factor structures were then compared to those derived by other researchers under normal conditions (i.e., those providing more detailed information and/or utilizing subjects working in an actual organization setting). Results from the Rush et al. study indicated that the "factor pattern and item loadings derived in a limited information condition were similar to those obtained by Schriesheim and Stogdill under normal conditions (p. 98)." Since samples varying greatly in the degree of leader-rater familiarity yield highly congruent factor structures it remains highly probable that implicit leadership theories account for these effects (Rush et al., 1977).

Further investigating the factor structure of implicit leadership theories, Weiss and Adler (1981) examined the extent to which individual's cognitive organization systems (i.e., cognitive complexity) impacted on the resulting factor structures (e.g., Rush et al., 1977). Weiss and Adler (1981) based their approach on the premise that such results as noted by Rush et al. (1977) might reflect an underlying social reality based on substantial experience in leader and/or follower roles. If this argument is valid,

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then one would NOT expect variations in the implicit leadership theories of respondents as a result of a respondent's different structure of intrapersonal construct systems. Weiss and Adler (1981) hypothesized that if the factor structures obtained from the leader behavior questionnaire reflect respondents' personal construct systems then one would expect the factor structures to differ as a function of differences in cognitive complexity of the respondent. However, if accurate reflections of regularities in leader behavior account for the factor structures obtained from the leader behavior questionnaire then the respondents' cognitive complexity should have little or no effect on extracted factor structures (Weiss & Adler, 1981).

To test these hypotheses, Weiss and Adler (1981) placed 254 subjects in a limited information paradigm comparable to that of Rush et al. (1977). Subjects then completed questionnaires to measure their cognitive complexity and perceptions of leader behavior. The sample was divided into low and high complexity subgroups based on a median split and separate factor analyses were computed using the scores from the leader behavior scales as dependent measures. Resulting factor structures from these two groups were highly congruent despite differences in respondents' cognitive complexity (Weiss & Adler, 1981). Furthermore,

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additional analyses were undertaken comparing respondents
scoring in the top and bottom 40% and 33% of the cognitive
complexity distribution.  These comparisons further
accentuated the differences between high and low complexity
subgroups, but still resulted in the same factor structures
obtained by the median split of complexity subgroups.  Thus,
Weiss & Adler (1981) concluded that "perceptions of the
co-occurrence of leader behaviors are not influenced by
differences in the underlying complexity of respondents
cognitive systems (p. 75)."  Indeed, the Weiss & Adler
(1981) findings can be construed as further evidence
suggesting that implicit leadership theories reflect
accurate perceptions of leader behavior.  Interestingly, the
factor structures derived in this study show high congruence
with those in the Rush et al. (1977) study (Weiss & Adler,
1981).

As noted above, characterization of implicit theories
also occurs based on the dynamics of operation.  Guzzo et
al. (1986) define dynamics of operation as the use of
implicit theories and the consequences of them.  Much of the
research on the operations of implicit theories has
demonstrated that with knowledge regarding the success or
failure of a person or group, implicit theories affect the
leadership evaluations and descriptions ascribed to that
person or group (Guzzo et al., 1986).  For example,

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performance information given to observers of leader or group behaviors has been observed to affect evaluations of that leader or group (Larson, Lingle, & Scerbo, 1984; Lord, Binning, Rush, & Thomas, 1978; Mitchell, Larson, & Green, 1977).

In three related studies, Mitchell et al. (1977) manipulated the perception of group performance and subsequently assessed ratings of leader behavior and group characteristics. The stimulus materials varied, with study one and two using a tape recording and videotape, respectively, of a problem-solving group session. In the third study, subjects actually participated in the group's problem-solving session. In the first two studies, leaders of groups described as successful were rated higher on consideration and initiating structure behaviors than leaders of groups described as unsuccessful. And in all three studies, groups described as successful were rated significantly more favorable on at least one of three group characteristic measures (Mitchell et al., 1977). These findings further suggest that implicit theories govern leader perceptions and group characteristic ratings when bogus performance information is provided (Bryman, 1987).

Similar performance cue effects have also been documented (e.g., Lord et al., 1978). Lord et al. (1978) suggest that as "the behavioral component becomes more

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ambiguous, the proportion of variance explained by performance cues appears to increase (p. 36)." This conclusion was reached upon comparing the Mitchell et al. and Rush et al. results with the Lord et al. findings.

The major extraction from this literature is that individuals possess stable and consistent implicit theories of leadership. The operation of these theories has been accomplished by research on the factor structure (e.g., Weiss & Adler, 1981) and performance cue effects (e.g., Mitchell et al., 1977) of implicit leadership theories (Bryman, 1987). In addition, the pervasiveness of implicit leadership theories has been documented (Bryman, 1987). Bryman (1987) further notes that implicit leadership theories are now being treated as given, and the emphasis has switched to their theoretical elaboration.

Leadership Categorization Theory

Postulating that implicit theories reflect the structure and content of cognitive categories utilized to differentiate leaders and nonleaders, Lord, Foti, & Phillips (1982) developed the leadership categorization theory. This theory represents a general information processing theory of leadership (Lord, Foti, & DeVader, 1984) which has its roots in research on object perception (Rosch, 1978) and person perception (Cantor & Mischel, 1979). According to Rosch (1978) all organisms must segment the environment into

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classifications whereby nonidentical but related stimuli can be treated similarly. Such a process is necessary given the enormous amount of stimuli organisms constantly encounter and must process. Cantor & Mischel (1979) note that people can reduce the complexity of the environment by grouping stimuli according to essential similarities, labeling these natural categories, and communicating about the elements comprising the category through category labels. For example, cars, buses, and trucks can readily be classified and communicated about as vehicles though none are identical.

Rosch (1978) argues that category systems have both vertical and horizontal dimensions that comprise their hierarchical internal structure. The vertical dimensions determine how may different kinds of stimuli are classified into the same category; therefore, vertical dimensions involve inclusiveness. A three-level taxonomy employed by Rosch and her colleagues maximizes the desired qualities of vertical dimensions such as the number of attributes commonly associated with most category members (Cantor & Mischel, 1979). The top and most inclusive level of the vertical structure is the superordinate level. The basic level is the middle level of categorization and below this is the least inclusive subordinate level. For example, suppose furniture comprises the superordinate level of the

taxonomy, then table and kitchen table might represent categories at the basic and subordinate levels, respectively (example taken from Cantor & Mischel, 1979). As noted by Lord et al. (1984), "Rosch and her colleagues concluded that the optimal level of abstraction in the three-level object taxonomies was the middle [basic] level; at this level, broad, inclusive, but still rich categories are formed (p.15)."

Along the horizontal dimensions, categories at the same vertical level of inclusiveness are differentiated. For example, within the basic level, the categories of table and chair can be distinguished in the taxonomy example above. Lord et al. (1984) maintain that at the same horizontal level categories relate by a pattern of overlapping similarity labeled family resemblance. Hence, members at each horizontal level share several common attributes with all other category members of that level. Conversely, members at each horizontal level remain distinguishable based on the concept of cue validity. Cue validity refers to a probabilistic concept pertaining to an attribute's ability to distinguish among categories across horizontal levels. Finally, Rosch (1978) suggest that reliance on prototypical attributes of category members can further discriminate horizontal level categories around the natural discontinuities in which categories form. A prototype is an

abstract representation of the most salient and shared characteristics of category members (Rosch, 1978).

Thus the work of Rosch (1978) and Cantor & Mischel (1979) pinpoints the categorization theory as one in which the internal structure of cognitive categories are described along vertical and horizontal dimensions. Furthermore, categories along any horizontal dimension can be related or distinguished based on family resemblance and cue validity of prototypical attributes. This categorization process affords individuals with the ability to classify complex environmental stimuli into abstract, simpler cognitive representations (Cantor & Mischel, 1979).

Applying the cognitive categorization theory to leadership, Lord et al. (1982) proposed their model of leadership perception which suggest that perceiving someone as a leader entails determining if that person displays the qualities and/or behaviors prototypical of leaders. To the extent that the layperson holds implicit theories regarding leadership (e.g., Guzzo et al., 1986), the Lord et al. (1982) model provides a viable framework in which to assess properties of leadership perception. The internal structure of the leadership categorization model is as follows: The categories of leader and nonleader comprise the superordinate level; the basic level leader categories are differentiated around contextual types of leaders such as

political leader and education leader; and the subordinate level leader categories further differentiates the basic level categories of leaders (i.e., liberal versus conservative political leaders ) (see Lord et al., 1984).

Lord et al. (1984) directly tested the leadership categorization model in three studies. In study one, independent groups of subjects described attributes of 11 basic level leader categories and 11 analogous nonleader categories. A separate group of subjects also rated a subset of these attributes for how prototypical of leadership they were. A final attribute list of 59 leader and 26 nonleader attributes was extracted and family resemblance, cue validity and prototypicality ratings were computed for each attribute (see Lord et al., 1984). Correlational analysis demonstrated that leader family resemblance, cue validity, and prototypicality were positively related while nonleader family resemblance was negatively correlated with leader cue validity. These findings provide support for the proposed internal structure of the leadership categorization model. Highly prototypical attributes appear to be most useful in discriminating category members from nonmembers (Lord et al., 1984). In studies two and three, Lord et al. demonstrated that prototypic leader behaviors were more accessible in memory and affect leader ratings, behavioral expectations, and

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causal ascriptions (similar findings to be discussed below).

Leadership categorization theory (Lord et al., 1982) provides one avenue for assessing how implicit theories of leadership affect leadership perceptions. Another viable framework stems from attribution theory (Kelly, 1973; cited in Phillips & Lord, 1982). Pfeffer (1977) maintains that leadership perception involves the process by which observers infer individual causality for some outcome. Hence, there should be a close link between processes responsible for leadership perception and the processes by which causality is inferred (Phillips & Lord, 1981). As Phillips & Lord (1981) note "observers implicitly believe that leadership produces certain behaviors and effects. Therefore, if those behaviors and/or effects are observed, and they are ascribed to personal qualities of an actor, the observer will perceive that the actor has demonstrated leadership (p. 144)." Central to this line of reasoning is the process of attributing causality to the target.

According to attribution theory, two factors determine the extent to which a leader is perceived as a causal agent. First, other plausible causes must be minimal in relation to the leader. Second, the leader must occupy a salient position in relation to other plausible causal agents (Phillips & Lord, 1981). Given that these conditions are met and the leader is perceived as a causal agent, a good

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leader perception should follow the causal ascription according to the attribution model (Phillips & Lord, 1981).

To test whether causal ascriptions mediate the leadership perception process, Phillips & Lord (1981) had 128 subjects view one of two videotapes of a four-person problem-solving group with salience of the group's leader, the existence of alternative causal explanations, and the group's performance being manipulated. After viewing the videotape, subjects completed measures of causal attributions, leadership descriptions, and general leadership impressions (GLI). Results of the study provided minimal support for the attribution model of leadership perception. The majority of explained variance in leadership perception was accounted for by the main effect of the performance feedback manipulation (Phillips & Lord, 1981). Furthermore, the results suggested that causal ascriptions did not mediate leadership perceptions. Instead, "subjects formed a simplified global impression of leadership and relied extensively on this impression to produce behavioral ratings (Phillips & Lord, p. 159)." Phillips & Lord (1981) concede that these findings seem more in line with the leadership categorization model.

Cronshaw & Lord (1987) directly compared categorization and attribution processes to discern which process immediately precedes leadership perceptions. In this study,

they manipulated factors relevant to categorization and attribution processes (i.e., prototypicality and consensus information). Subjects viewed a videotape of a management group in which prototypicality of leader behavior and consensus information (prototypicality of behaviors exhibited by other group members) varied. Subjects then completed leader perception measures and causal ascription questionnaires. It should be noted that this study also required subjects to encode any behaviors deemed relevant (leader behaviors or consensus behaviors) by using a special encoding apparatus while viewing the videotape. Results of the study indicated that causal ascriptions were not prerequisites to leadership perceptions. In fact, encoding of leader behavior directly impacted on leadership perceptions; moreover, the interaction effects of leader prototypicality and consensus information factors on leadership perceptions was opposite to that predicted by attribution theory. These findings further validate the usefulness of the leadership categorization model (Cronshaw & Lord, 1987) and argue against the claims of the attribution model. In sum, evidence pinpoints the leadership categorization model of Lord et al. (1982) as the more viable and supported model for assessing the role of implicit theories on leadership perceptions. This model is utilized in the present study.

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## Prototypes

Leadership categorization theory relies extensively on the use of prototypes. Observers utilize these exemplars of behavior to classify a particular target as belonging in a specific category such as leader (Cronshaw & Lord, 1987). To understand the nature of stimulus prototypicality, researchers have investigated processes such as the relationship of stimulus prototypicality with general leadership impressions (Fraser & Lord, 1988), leader labels (Foti, Fraser, & Lord, 1982), and memory of leadership behaviors (Phillips & Lord, 1982). Findings from these studies further highlight the role of prototypes in relation to the leadership categorization model.

Fraser & Lord (1988) directly manipulated the prototypicality of exhibited leader behaviors to assess the relationship of stimulus prototypicality and general leadership impressions on leadership and behavioral ratings. The purpose was to investigate two primary assertions of the categorization theory of leadership perception. First, when stimulus prototypicality for the category leader is manipulated, the evaluations and ratings of the target person will be affected. Second, the effects of stimulus prototypicality are directly related to a general leadership impression (Fraser & Lord, 1988). Stimulus materials for this study included three versions of a four paragraph

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vignette that varied the degree of prototypical leader behaviors exhibited by the target person. Upon reading the vignettes subjects completed leader behavior measures, a general leadership impression item, and the initiating structure and consideration scales of the LBDQ (form XII).

Results from the Fraser & Lord (1988) study demonstrated that stimulus prototypicality had significant effects on the behavioral scales, the GLI item, the effectiveness, performance, influence, and control composite scores, and the initiating structure scale. Furthermore, using the GLI item as a covariate on all other dependent measures demonstrating a significant prototypicality effect, greatly reduced the amount of variance explained by the prototypicality manipulation (Fraser & Lord, 1988). Fraser & Lord (1988) concluded that leadership perceptions are directly influenced by stimulus prototypicality and this relationship operates through a general impression of leadership ability.

In the Fraser & Lord (1988) study, subjects received explicit information concerning prototypicality of leader behavior. Leader prototypicality can also be inferred and subsequently affect leader ratings in a systematic manner. Foti, Fraser, & Lord (1982) examined the extent to which different leadership labels imply different leader characteristics and subsequently affect the behavioral and

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trait ratings of national political leaders. In the first part of this study, Foti et al. (1982) required subjects to rate the extent to which a series of Gallup poll phrases fit their image of either a leader, political leader, effective leader, or effective political leader. Results revealed a significant difference between the prototypes of the superordinate level category of leader and the basic level category of political leader. When adding "effectiveness" to the label only the prototypes of political leaders were significantly different (Foti et al., 1982). Thus, different descriptive labels appear to evoke different characteristic prototypes based on the label.

In the second part of the study, Foti et al. (1982) examined the extent to which prototypicality ratings were predictive of leadership ratings of specific political leaders. Using cross-sectional and longitudinal data collected from previous Gallup surveys (on former presidents Carter and Kennedy), as well as difference changes in Gallup poll items, Foti et al. (1982) demonstrated that across time the most prototypical items correlated most highly with the leadership item of the Gallup poll. These effects were not due to prototypes of leaders being confounded with favorability (Foti et al., 1982). Foti et al. (1982) surmised that not only do category labels impact on prototypes associated with various labels, but also

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"prototypes operate much like stereotypes in specifying characteristics associated with category members (p. 332)."

Because prototypes have a biasing effect much like stereotypes (Foti et al., 1982; Fraser & Lord, 1988) and therefore impact on leader behavioral and trait ratings via a general leadership impression, it follows that prototypes might also impact on memory recognition for leadership behavior (Phillips, 1984). Phillips and Lord (1982) assessed the relationship between leader prototypes and memory for leadership behaviors. Leadership categorization holds that individuals assimilate large amounts of information around a leader prototype. Although this process aids in classifying a target person, it can be problematic since during recall observers may have difficulty distinguishing between leader-specific and prototypically similar leadership information (Phillips & Lord, 1982). Similarly, a prototype initially evoked in response to nonbehavioral information (e.g., labels or performance feedback) and resulting in the classification of a target person into a preexisting leadership category, might affect memory when this prototype is utilized during recall (Phillips & Lord, 1982).

Phillips and Lord (1982) had 128 subjects view a videotape of a four person problem-solving group in which the target leader demonstrated five clear instances of

prototypically good, prototypically bad, and nonprototypic behaviors. Following viewing, subjects were given bogus performance information and then required to complete a specially constructed 30-item questionnaire of leader behavior. In each of three groups of 10 items based on prototypicality, only 5 of the behaviors had actually been exhibited by the target person. Subjects indicated on the measure the degree to which they believed the leader had exhibited the behavior. Results indicated that subjects were more capable of distinguishing nonprototypic behavior, supporting the notion that subjects might have difficulty discriminating between specific behaviors of good leaders and those commonly associated with the established prototype of leader (Phillips & Lord, 1982). Furthermore, subjects systematically altered their leadership descriptions to align with the prototype primed by the bogus performance feedback (Phillips & Lord, 1982).

Rush and Russell (1988) further extended the work on prototypes and memory by demonstrating that individuals with similar prototypes of leadership also describe the leader behavior of the respective supervisor in a similar fashion, despite interacting with different supervisors. More important, this observed prototype-contingent consensus among subjects was only evident when the prototype was consistent with the evaluative label attributed to the

supervisor. Thus, subjects harboring a good leader prototype and describing their supervisor as bad failed to exhibit any concordance in the relationship between descriptions and prototypes (Rush & Russell, 1988). The same holds true for subjects with a poor leader prototype who described their supervisors as good.

The research on prototypes clearly highlight prototypes as integral to the leadership categorization model. By relying on prototypes of leader behavior, the layperson classifies a target person into a preexisting category of leadership. Once classified the layperson's implicit theories regarding leadership determine a general impression of the observed target that directs behavioral descriptions and memory of specific behaviors. These results seem evident regardless of whether prototypes are inferred from labels and/or performance information or more direct means. The present study seeks to extend the work on the leadership categorization model as applied to leadership perceptions of male and female leaders. This study rest on the premise that men and women are regarded differently in terms of leadership and will assess the effect of leader behavior prototypicality on the leadership perceptions of male and female leaders.

Leadership Perceptions of Men and Women

In terms of leadership, research clearly demonstrates

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that men and women are judged to possess differences in ability to lead (e.g., Schein, 1973; Heilman, Block, Martell, & Simon, 1989). Schein (1973; 1975), in virtually identical studies, examined the relationship between requisite management characteristics and sex role stereotypes. In the first study, Schein (1973) had three hundred male middle managers generate descriptive ratings on 92 adjective items of either women in general, men in general, or successful middle managers. Then the resemblance between descriptive ratings of men (women) and managers was determined. Results revealed that male subjects described managers as possessing characteristics more commonly ascribed to men then to women (Schein, 1973).

In the latter study, Schein (1975) replicated the earlier study (Schein, 1973) on a sample of 167 female middle managers. Similarly, results indicated that female subjects perceived managers to possess those characteristics commonly ascribed to men than to women. Comparing the two samples revealed only minor differences between them. For example, the female sample displayed a tendency to rate managers as possessing more characteristics commonly associated with women though this relationship was significantly less pronounced than that between managers and men (Schein, 1975). Strikingly, when specific items were examined, both samples rated managers as more similar to men

than to women in leadership ability (Schein, 1973; 1975).

Related to how women and men are perceived is how they are evaluated (Bartol & Butterfield, 1976) because evaluations depend on perceptions of the target. Bartol and Butterfield (1976) examined the extent to which sex role stereotypes impact on the evaluations of leadership behaviors. This study compared measures of leadership behaviors for men and women who exhibited the identical leadership styles of either initiating structure, consideration, production emphasis, or tolerance for freedom. The results indicated that males received higher ratings when exhibiting initiating structure behaviors and women received higher ratings when exhibiting consideration behaviors. No differences occurred with production emphasis or tolerance for freedom leadership styles (Bartol & Butterfield, 1976). These findings confirm that the gender of the manager affects how particular leadership styles are evaluated. Bartol and Butterfield (1976) concluded that "what is considered effective managerial behavior for a male may not be [considered] effective behavior for a female (p. 452)."

Other findings have elaborated on the earlier research on gender effects in the workplace (e.g., Heilman, Martell, & Simon, 1988; Heilman, 1984). Heilman (1984) examined the role of information as a possible deterrent to sex

discrimination. This study demonstrated that when provided
with high job-relevant information, women and men were
equally likely to be recommended for employment. However,
low job-relevant information resulted in women being
significantly less likely to be recommended for employment.
In addition, these results were mediated by the degree to
which female applicants were sex typed (Heilman, 1984).
Thus, it appears that sex discrimination in employment can
possibly be undermined when high job-relevant information is
supplied to offset sex typing of female applicants.

Similarly, in an earlier study, Heilman (1980)
demonstrated that employment decisions were significantly
more unfavorable when women represented 25% or less of the
applicant pool. Again, sex role stereotypes formed about
women in the 25% or less applicant pool mediated these
effects (Heilman, 1980). These findings suggest that
increasing female representation in the applicant pool may
also help to undermine sex discrimination in personnel
decisions by negating sex typing.

Of final importance is the current status of
characterizations of men and women in the workplace.
Detailed above is the notion that men are rated as
possessing attributes, particularly leadership ability,
commonly associated with managers moreso that women (Schein,
1973; 1975). Furthermore, men and women appear to be

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evaluated according to different standards (Bartol & Butterfield, 1976) and women are discriminated in the workplace as a result of sex role stereotyping moreso than men (e.g., Heilman, 1984). Intuitively, one might expect such effects to have diminished as a result of the increase participation of women in the workforce.

Heilman, Block, Martell, and Simon (1989) both replicated and extended the work conducted by Schein (1973; 1975). In this study, 268 male and female managers utilized the 92 item attribute inventory to rate men (in general, managers, or successful managers), women (in general, managers, or successful managers), or successful middle managers. In making the same comparison as Schein (1973), Heilman et al. (1989) demonstrated that men in general are still seen as possessing attributes commonly ascribed to successful managers more that women in general. In the extension of the Schein studies, results further indicated that the congruence between attributes ascribed to women an successful middle managers increased drastically when women were depicted as managers and moreso as successful managers. Thus, "when information is provided about a women's managerial status the number of items [attributes] that initially differentiated her from successful middle managers is reduced (Heilman et al., p. 939)." Still, however, the correspondence between the characterizations of men and

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successful managers was significantly higher that the correspondence between characterizations of women and successful managers (Heilman et al., 1989).

Examination of specific attributes from the Heilman et al. (1989) results reveals that when successful male managers and successful female managers are both compared to successful managers, only two attributes differentiate the comparisons. Namely, successful male managers and successful middle managers are perceived as sharing leadership ability and less interest in appearance, whereas successful female managers were not ascribed these attributes. In fact, leadership ability was seen as an item which successful managers were seen as more similar to men than to women when making comparisons across all three characterizations (in general, managers, and successful managers) (Heilman et al., 1989). Thus, despite the characterization of men and women, men are regarded as having leadership ability necessary for successful management, while women are perceived as lacking this vital requisite of successful management.

Summary

In summary, the leadership categorization model provides a useful vehicle to investigate implicit leadership theories of the layperson. The key to the model lies in the use of prototypes. Individuals will use a prototype-

matching strategy to classify observed individuals into existing leader categories. The literature suggest that men and women will not likely be categorized in the same leader category since women are typically thought to lack leadership ability. Hence, the layperson will regard men as leaders and women as nonleaders. Although the classification of observed leaders might occur based on prototypicality of exhibited behaviors, the salience of gender will likely be the overriding influence in classification of observed targets.

<u>Hypotheses</u>

In the present study, subjects will read short vignettes that vary in the gender of the target leader (male, female, unspecified) and prototypicality of exhibited leader behavior (prototypical, neutral, antiprototypical). After reading the vignette, subjects will then complete a memory ability task, a 5 item general leadership impression inventory (GLI), an adjective check list (to determine the degree of sex typing), and a recognition memory measure. Because research shows that women are perceived as less likely than men to have leadership ability (e.g., Heilman et al., 1989)

> it is expected that female leaders will receive a less favorable leadership rating than male leaders **(HYPOTHESIS 1)**.

Thus, female leaders will receive significantly lower ratings on the GLI inventory than male leaders. The GLI rating for the gender unspecified leader should fall in the middle of those for the male and female leader.

Similarly, research suggests erroneous evaluations will occur to the extent the job relevant information is NOT included for making the evaluations (Heilman, 1984). Thus when provided, job relevant information becomes the basis for making judgements. When job relevant information is absent, subjects rely more on stereotypes to aid in judgement (Heilman, 1984). Equating prototypical leader behaviors to job relevant information in the Heilman (1984) study, it follows that leadership perceptions will vary with prototypicality of exhibited behaviors. In fact, Fraser and Lord (1988) note that subjects given prototypical stimulus gave significantly higher leadership ratings than other groups. Thus, high prototypical leader behaviors should act similarly to job relevant information in that both will positively affect perceptions of the target if provided. When absent however (e.g., antiprototypical leader behaviors or no job relevant information situations), evaluations of the target should be based on some alternative criteria. Therefore,

it is expected that prototypical behaviors should elicit higher leadership ratings than

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antiprototypical behaviors with neutral behaviors

receiving an intermediate rating (**HYPOTHESIS 2**).

Prototypicality of exhibited leader behavior should
also determine the degree of sex typing.  Because women
generally are perceived to lack leadership abilities
(Heilman et al., 1989) and attributes of successful managers
are typically masculine (Schein, 1973, 1975; Heilman et al.,
1989), it follows that when women are perceived as leaders
they are also ascribed many masculine attributes.
Therefore, it is hypothesized that

women exhibiting prototypical leader behaviors

will be sex typed less than those exhibiting

antiprototypical leader behaviors, and those

exhibiting neutral leader behaviors will receive

an intermediate sex type rating (**HYPOTHESIS 3**).

No a priori hypothesis is made with regard to male leaders
and sex typing, though it is likely that male leaders will
receive high masculine ratings despite the prototypicality
of their behavior.

Subjects will also receive a recognition measure to
assess their memory for leader behaviors present in the
vignettes.  Methods borrowed from signal detection theory
(SDT; see Hartwick, 1979; Grier, 1971) will be employed to
analyzed the results from the recognition measure.  For all
subjects, recognition accuracy (A'), false alarm rates

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(FAR), and hit rates (HR) will be computed. Based on research with recognition memory of leader behaviors, it has been demonstrated that observers have difficulty in distinguishing leader specific behaviors and those consistent with an utilized leader prototype (Phillips & Lord, 1982). Typically male leaders evoke a good leader prototype (Heilman et al., 1989) thus

> it is expected that subjects will show greater difficulty in distinguishing present from absent behaviors in the male/prototypic behavior condition than in the male/antiprototypic behavior condition (**HYPOTHESIS 4**).

Similarly, because women typically evoke a poor leader prototype (Heilman et al., 1989)

> it is expected that subjects will show greater difficulty in distinguishing present from absent behaviors in the female/antiprototypic behavior condition than in the female/prototypic behavior condition (**HYPOTHESIS 5**).

What this equates to in SDT terms is that greater difficulty in distinguishing present from absent behaviors will result in a high A' and FAR. When distinguishing is not difficult, subjects should have a high A' and a low FAR.

Finally, the role of a general leadership impression will be investigated. As noted, perceptions appear to be

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directed via a general impression of leadership ability (Fraser & Lord, 1988). Hence, it hypothesized that

    the subjects' general leadership responses will

    mediate their responses on the adjective check

    list (**HYPOTHESIS 6**).

Hence, target leaders rated high in general leadership ability would also be rated high in masculine attributes because successful leaders are ascribed attributes similar to those utilized to describe men in general (Heilman et al., 1989).

## Method

### Subjects

Subjects consisted of 180 undergraduate students at a large southeastern university. Twenty students were randomly assigned to each of the nine experimental groups with approximately equal number of males and females in each experimental group.

### Independent measures

Nine different vignettes were utilized in this study. They differed in two ways. First, the target in each vignette exhibited either prototypical, neutral, or antiprototypical leader behaviors. Vignettes contained leader behavioral statements consistent with those utilized by Foti and Lord (1987). Foti and Lord (1987) note that on a 7 point prototypicality scale, prototypical leader behaviors received mean ratings of 6 or greater, neutral leader behaviors received ratings ranging between 3.5 and 4.5, and antiprototypical leader behaviors received mean ratings below 2. Furthermore, these statements are comparable in length. In appendix C, those behaviors used to construct the vignettes are in boldface.

These vignettes also differed in the gender of the target leader. The manipulation of target gender occurred in the written instructions given to the subjects as well as the first paragraph of each vignette. Instructions at the

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top of each vignette basically repeated the verbal instructions; however, names were included. These names were chosen to represent a male, female, and gender unspecified leader (i.e, James Wright, Jane Wright, and J. A. Wright, respectively). After the initial paragraph of the vignette, each leader was referred to by their surname only. The word "leader" was not referenced in any form. Examples of the vignettes are given in appendix D.

Dependent Measures

The dependent measures consisted of the picture number test (Ekstrom, French, Harmon, & Derman, 1976), a general leadership impression (GLI) inventory, an adjective check list measure, and a recognition memory measure. The picture number test assesses memory capabilities. Scores on this measure can range from 1 to 21, with higher score indicating greater memory capabilities.

For the GLI inventory, each subject rated on a 5 point scale the degree to which they thought the target leader contributed to the task, influenced group members, exhibited leadership, controlled group activities, and would make a good leader with another task. Scores from these five items were summed for each subject and constitute the GLI rating. The GLI score can range from 5 to 25, with higher scores indicating a more favorable leadership impression.

For the adjective check list, subjects rated each

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observed leader on five bipolar adjective items using a 9 point Likert scale. The items are: ambitious-unambitious; emotional-rational; decisive-indecisive; tough-soft; and independent-dependent. Heilman (1984) notes that these items relate to gender related work attributes. Scores from each item were analyzed independently with higher scores indicating a stereotypical masculine characterization.

The recognition memory measure required subjects to determine whether or not the character in the respective vignette exhibited certain behaviors. The recognition measure contained thirty behaviors with ten representing each level of prototypicality. In each subset of ten, five behaviors were those utilized in the vignettes and five did not appear in any vignette (see appendix C for the behaviors used to construct the recognition measure). For example, their were ten prototypical leader behaviors and five of these were used to construct the prototypical behaviors vignettes.

Methods from signal detection theory (SDT) were borrowed to analyze responses to this measure. For each subject, recognition accuracy (A'), false alarm rate (FAR), hit rate (HR) was computed. Foti and Hauenstein (in press) note that SDT computes A' as a function of the FAR (i.e, the percentage of non-occurring behaviors incorrectly identified as having been displayed) and the HR (i.e., the percentaged

of occurring behaviors correctly identified). When the HR
is one and the FAR is zero, perfect accuracy has occurred.
Conversely, when the FAR is equal to or greater than the HR
then accuracy is occurring at chance levels and thus at its
lowest level (Foti & Hauenstein, in press). In this study,
A' could thus have a range of .5 (chance recognition) to 1
(perfect recognition). FAR and HR, being percentages, range
from 0 to 1, with higher scores indicating a greater rate.

Manipulation Check

As a manipulation check, a question was given at the
end of the questionnaire packet which asks subjects to
write, as accurately as possible, the initial written
instructions given to them along with the vignette.
Subjects written instructions were compared to actual
instructions to determine the extent to which the gender of
the leader was made salient. After the first 60 subjects
completed the question, it was necessary to add a more
explicit, sensitive manipulation check question. Hence, the
remaining 120 subjects were asked to indicate the name and
gender of the leader in the vignette.

Appendix E contains examples of the GLI, adjective
check list, recognition memory, and manipulation
check/demographic information measures.

Procedure

Subjects were randomly tested in small groups of

approximately twenty.  Within each group subjects were
randomly assigned to experimental conditions.  First,
subjects were seated in front of an overturned vignette and
told not to turn them over until instructed.  Subjects were
then given the following oral instructions:

> This is a study of social perceptions.  It
> requires that you carefully read a vignette about
> a student government member and then answer
> several short questionnaires concerning your
> impressions of the character in the vignette.  You
> will be given four minutes to read the vignette.
> When your are finished, turn the vignette over and
> await further instructions.  Are there any
> questions?  You may begin.

After reading, the vignettes were collected and the picture
number test was distributed.  This is a timed measure and
contains instructions on it, thus subjects read along with
the experimenter and completed the task as required.  The
picture number test was collected and a packet of
questionnaires was distributed.  This contained the
remaining dependent variables.  Subjects were given
unlimited time to complete these questionnaires and were
asked to complete them in the order of their appearance
(GLI, adjective check list, recognition memory measure,
manipulation check questions/demographic information).  When

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all packets were completed and collected, subjects were debriefed about the purpose, hypotheses, and expected results of the study. The vignettes and questionnaires had numerical codes to ensure accurate scoring of results.

Results

**Manipulation Check**

The manipulation check proceeded in two phases and was analyzed with two scoring schemes. The initial manipulation check question noted above was used for the first 60 subjects; however, this question was not sensitive enough to determine whether or not subjects accurately identified the gender of the target in their respective vignettes. Thus, the remaining subjects were given an additional question that explicitly asks for the name and gender of the target. To determine whether subjects correctly identified the gender of the target, these manipulation check questions were coded as correct or incorrect identification of target gender. Subsequent chi-squares were then applied to determine if there were significant differences among subjects in their correct or incorrect identification of respective target gender.

Given that the first 60 subjects completed an insensitive manipulation check questionnaire, the free recall questionnaire (not utilized for this study) was investigated to determine if the subjects had inferred a specific target gender. The first scoring scheme (scheme 1) entailed looking at the free recall questionnaire for use of correct names and/or pronouns to determine correct or incorrect target gender identification. For the remaining

subjects, the explicit question had to be answered correctly (both name and sex) to receive a correct identification score. Note that the unspecified gender condition requires the nonuse of the he/she pronoun in the free recall questionnaire and an "unknown" response to the explicit question concerning gender of the target, in order to be correct. The second scoring scheme (scheme 2) entail a less stringent criteria for the final 120 subjects. In order to be correct under scheme 2, subjects had to either identify the name or the gender of the target correctly.

As noted, chi-square analyses by target gender groups were performed on the coded correct and incorrect identification scores. Under scheme 1, all 60 (100%) of the subjects in the female target condition correctly identified the target gender, consequently a chi-square analysis was both unnecessary and impossible. In the male target condition, 57 out of 60 (95%) subjects correctly identified the target gender. The result, $\underline{X}^2$ (2) = .349, $\underline{p}$ > .05, implies that this is not a significant difference; however, the chi-square was not a valid test because 50% of the cells had expected counts less than 5. In the neutral target condition, only 22 out of 60 (36.67%) subjects correctly identified the targets gender. The significant chi-square, $\underline{X}^2$ (2) = 8.756, $\underline{p}$ < .05, shows that more subjects in this

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condition incorrectly identified the target gender (see discussion section for more on the neutral target condition).

Under scheme 2, analyses for the female and male target conditions remained the same. In the neutral target condition, however, 36 out of 60 (60%) subjects now correctly identified the target gender, $\underline{X}^2$ (2) = 5.417, $\underline{p}$ < .07. Thus, subjects in the neutral target condition were now slightly more likely to correctly identify the gender of the target in their respective vignettes.

Finally, a chi-square analysis was computed over all groups using the more stringent criteria (scoring scheme 1) only. Results of this analysis showed that 139 out of 180 (77%) subjects correctly identified the target's gender. The chi-square, $\underline{X}^2$ (8) = 96.712, $\underline{p}$ < .01, shows that over all groups, subjects were significantly more likely to correctly identify the gender of the target in their respective vignettes.

**Memory Capabilities**

Subjects were given the picture-number test to determine if differences in memory capabilities existed among subjects. The results of the picture-number test were analyzed in a multi-way ANOVA to determine if differences in memory capabilities existed among the subjects. The overall

ANOVA was not significant, $F(29, 150) = 1.04$, $p > .10$, and there were no significant differences between experimental groups, subject gender, class or age (see Table 1).

<Insert Table 1 about here>

## Leadership Perceptions

The subjects scores on the five GLI items were combined to form a composite leadership score (coefficient alpha = .626). The GLI composite was then used as the dependent variable in a 3 (target gender) X 3 (prototypicality of behavior) X 2 (gender of subject) ANOVA. As shown in table 2, contrary to hypothesis 1, there was not a significant main effect for target gender, $F(2, 162) = .60$, $p > .10$. In support of hypothesis 2, there was a significant main effect for prototypicality of behavior, $F(2, 162) = 8.45$, $p < .001$. Specifically, multiple comparisons (Duncan's MRT) showed that targets displaying neutral ($M = 19.950$) and prototypical ($M = 19.850$) behaviors received significantly higher GLI ratings than targets displaying antiprototypical ($M = 17.833$) behaviors (see bottom of Table 2 for means and standard deviations and Duncan's MRT table).

Finally, a significant main effect for subject gender occurred, $F(1, 162) = 5.96$, $p < .05$. Significantly higher GLI ratings were given by female subjects ($M = 19.787$) than by male subjects ($M = 18.648$). No interactions were significant at the $p < .05$ level.

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<Insert Table 2 about here>

**Sex Typing**

Subjects responses on the adjective check list (coefficient alpha = .487) were analyzed in a 3 (target gender) X 3 (prototypicality of behavior) X 2 (subject gender) MANOVA. Contrary to hypothesis 3, the MANOVA did not produce a significant target gender X prototypicality of behavior interaction, $F$(approximate) (20, 525) = .6524, $p$ > .10, using Wilks' Lambda. Results did show a significant main effect for prototypicality of behavior, $F$(approximate) (110, 316) = 14.381, $p$ < .001.

In terms of prototypicality of behavior, a significant univariate effect occurred with the emotional/rational scale, $F$(2, 162) = 18.720, $p$ < .05. Multiple comparisons (Duncan's MRT) showed that on this scale, targets displaying prototypical ($M$ = 6.617) and neutral ($M$ = 6.467) behaviors received significantly higher (i.e., more masculine) scores than targets displaying antiprototypical ($M$ = 4.833) behaviors. Thus, targets exhibiting prototypical and neutral behaviors were characterized as more rational than targets exhibiting antiprototypical behaviors.

A significant univariate effect for prototypicality of behavior was also found for the soft/tough scale, $F$(2, 162) = 53.510, $p$ < .05. However, multiple comparisons showed that targets displaying antiprototypical ($M$ = 7.700)

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behaviors received significantly higher (i.e., more masculine) scores on this scale than targets displaying either neutral ($\underline{M}$ = 5.800) or prototypical ($\underline{M}$ = 5.683) behaviors. Finally, a significant univariate effect for prototypicality of behavior was found for the dependent/independent scale, $\underline{F}$(2, 162) = 4.450, $\underline{p}$ < .05. Again, contrast effects showed that targets displaying antiprototypical ($\underline{M}$ = 7.183) behaviors received significantly higher (i.e., more masculine) scores on this scale than targets displaying either prototypical ($\underline{M}$ = 6.350) or neutral ($\underline{M}$ = 6.000) behaviors. Thus, for the soft/tough and dependent/independent scales, targets displaying antiprototypical leader behaviors were attributed the more stereotypical masculine characterizations of being tough and independent.

Finally, a marginally significant main effect for subject gender, $\underline{F}$(approximate) (5, 158) = 2.230, $\underline{p}$ < .06, was obtained. In terms of the marginal effects of subject gender, only the univariate effect for the unambitious/ambitious scale was significant, $\underline{F}$(1, 162) = 4.340, $\underline{p}$ < .05. Comparisons revealed that female subjects ($\underline{M}$ = 7.629) gave a significantly higher (i.e, more masculine) score on this scale than male subjects ($\underline{M}$ = 7.132); however, both groups gave relatively stereotypical masculine sex type ratings, ambitious, on this scale.

## Recognition Memory

To test hypotheses 4 and 5, three one-way ANOVAs (per target gender conditions) were computed using scores of accuracy, false alarm rates, and hit rates from the memory recognition measure as separate dependent variables. The independent variable was the appropriate experimental groups (i.e., male/prototypical behavior group versus male/antiprototypical behavior group or female/prototypical behavior group versus female/antiprototypical behavior group). Hypothesis 4 was not supported. Male target experimental groups showed no differences on the recognition measure in terms of accuracy, $F(1, 38) = 0.09$, $p > .10$, false alarm rates, $F(1, 38) = .02$, $p > .10$, or hit rates, $F(1, 38) = 0.22$, $p > .10$. Similar results were obtained for the groups reading about female targets, and thus hypothesis 5 was also not supported. Again, subjects in these groups showed no differences on the recognition measure in terms of accuracy, $F(1, 38) = .19$, $p > .10$, false alarm rates, $F(1, 38) = .36$, $p > .10$, or hit rates, $F(1, 38) = .29$, $p > .10$.

To test for differences on the recognition measure across both male and female target groups, three one-way ANOVA'S were computed with the same dependent measures and all four groups (i.e., those used in hypotheses 4 and 5) as the independent variable. Results showed significant differences for both accuracy, $F(3, 76) = 8.83$, $p < .05$, and

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hit rates, $F(3, 76) = 13.75$, $p < .05$.  Means and standard
deviations are included in Table 3.

Comparison of means (Duncan's MRT) revealed that for
accuracy, those groups reading about male/prototypical
behavior ($M = .854$) and male/antiprototypical behavior ($M = .843$) had significantly higher accuracy rates than those
groups reading about female/prototypical behaviors ($M = .708$) or female/antiprototypical behaviors ($M = .688$).
Neither of these groups were significantly different from
each other within their respective gender (i.e., gender of
the target). Comparisons of the hit rates follow the same
pattern.  The male/prototypical behavior ($M = .930$) and
male/antiprototypical behavior ($M = .910$) groups had
significantly higher hit rates than the female/prototypical
behavior ($M = .710$) or female/antiprototypical behavior ($M = .680$) groups.  Again, neither the male target groups nor the
female target groups were significantly different from their
counterpart.  Thus, subjects given male targets were more
accurate on the recognition measure than those given female
targets.

<Insert Table 3 about here>

The above analyses for hypotheses 4 and 5 were computed
across target gender.  That is, the prototypical and
antiprototypical groups were compared for only the female
target groups or the male target groups.  However, these

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hypotheses might also be tested within prototypicality groups. Namely, female and male target groups could be compared for only the prototypical or antiprototypical groups. These exploratory analyses were conducted and are described below.

Results from the exploratory analyses comparing the male and female prototypical behavior groups displayed significant effects for accuracy, $F(1, 38) = 16.43$, $p < .05$, and hit rates, $F(1, 38) = 23.58$, $p < .05$. There were no effect for false alarm rates, $F(1, 38) = .38$, $p > .05$. Multiple comparisons (Duncan's MRT) on the significant effects showed that for accuracy, the male/prototypical behavior ($M = 0.854$) group was significantly more accurate than the female/prototypical behavior ($M = 0.708$) group. This accuracy effect was due to the significantly greater hit rates for the male/prototypical behavior ($M = .930$) group over the female/prototypical behavior ($M = .710$) group.

Similarly, results for the exploratory analyses comparing the male and female antiprototypical behavior groups displayed significant effects for accuracy, $F(1, 38) = 11.14$, $p < .05$, and hit rates, $F(1, 38) = 18.11$, $p < .05$. There was no effect for false alarm rates, $F(1, 38) = .02$, $p > .05$. Multiple comparisons (Duncan's MRT) on the significant effects showed that for accuracy, the

male/antiprototypical behavior ($\underline{M}$ = .843) group was significantly more accurate than the female/antiprototypical behavior ($\underline{M}$ = .688) group. This accuracy effect was due to the significantly greater hit rates for the male/antiprototypical behavior ($\underline{M}$ = .910) group over the female/antiprototypical behavior ($\underline{M}$ = .680) group.

Both sets of these analyses leave an unclear picture. Phillips and Lord (1982) note that recognition accuracy is greater in conditions in which the behavior is inconsistent with a utilized prototype. Thus, hypotheses that the male/antiprototypical behavior group (hypothesis 4) and the female/prototypical behavior group (hypothesis 5) would have greater accuracy on the recognition measure was not supported. However, the exploratory analyses did demonstrate that accuracy on the recognition measure was a function of target gender. That is, regardless of the prototypicality of exhibited behavior, those groups with male targets were significantly more accurate on the recognition measure than those groups with female targets. This latter finding, though difficult to interpret within the framework of the present study, suggests that subjects somewhat utilized target gender as a basis for processing information. Furthermore, given the lack of differences across groups on false alarm rates, it appears as if subjects are less willing to attribute behaviors that

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occurred to female leaders.

**Role of GLI**

Finally, to test hypothesis 6, a series of hierarchical regressions were computed on the adjective check list items that showed significant univariate ANOVAs (emotional/rational, soft/tough, and dependent/independent). For each regression analysis, GLI ratings were entered in step 1. In step 2, target gender, prototypicality of target behavior, and subject gender were entered. Significant changes in R-square would discount the role of general leadership impressions as mediating the responses to the adjective check list items.

As shown in Table 4, a significant change in R-square occurred in each analysis. Thus, contrary to hypothesis 6, subjects did not use a general impression of leadership as a basis for answering the adjective check list items. In fact, for the variable emotional/rational, significant R-squares at each step suggest that independent effects of the variables entered at that step are occurring. Thus, GLI does influence scores on this variable; however, GLI is not acting as a mediator.

<Insert Table 4 about here>

The hierarchical regressions were also computed in reverse order. That is, target gender, prototypicality of behavior, and subject gender were entered in step 1 and the

GLI ratings in step 2. Again, for all dependent variables, except the dependent/independent item, a significant change in R-square occurred at the $p < .05$ level. Thus, all the regressor variables used in these analysis are contributing to some unique variance in the dependent variables; general leadership impressions do not mediate subjects responses to the adjective check list.

## Discussion and Conclusion

The major objective of this study was to determine if leadership perceptions of men and women are governed by the principles of categorization. It was based on the premise that men and women are regarded differently in terms of leadership. Given such, then gender of the target would determine how subjects responded to the various measures. Partial support for this notion was found. Gender of the target accounted for the responses on the recognition memory measure. Subjects with male target leaders were significantly more accurate on the recognition measure than those with female target leaders. However, in this study, male and female leaders were perceived similarly in terms of leadership ability. Differences in leadership ratings resulted as a function of prototypicality of exhibited leader behaviors.

These finding must be viewed in light of results commonly reported in the literature. Research on gender and evaluation has demonstrated that women are devalued relative to men in many employment situations including leadership (e.g., Heilman et al., 1989), personnel decisions regarding employment (e.g., Heilman et al., 1988, Heilman 1984; 1980), and performance appraisal (e.g., Sackett, DuBois & Noe, 1991). This devaluation often occurs without any legitimate basis or without use of relevant information.

However, there is also some recent evidence suggesting that the gap between perceptions of working men and women is decreasing. Brenner, Tomkiewicz, and Schein (1989) investigated the relationship between sex role stereotypes and perceived requisite management characteristics in another replication of the original Schein (1973; 1975) studies. Using male and female middle managers, they demonstrated that female middle managers perceived successful middle managers as possessing characteristics commonly associated with men and women. Male middle managers, however, still viewed successful middle managers as possessing characteristics commonly associated with men and not women. In another study, Eagly, Makhijani, and Klonsky (1992) meta-analyzed studies dealing with gender and evaluation of leaders. Here, these researchers reported a slight tendency to devalue female leaders relative to male leaders. Furthermore, this relationship was moderated by certain circumstances, such as leadership style, whether the leader occupied male dominated roles, or when the evaluators were males.

These somewhat conflicting studies suggest that male-female differences in workplace evaluation occur, but certain circumstances may moderate the gender-evaluation relations. Indeed, much research in this area has examined these moderating circumstances. For example, Heilman (1980)

noted that women applicants for a managerial position were significantly devalued if women occupied less than 25% of the total applicant pool. And Heilman (1984) demonstrated that when quality performance related information is absent, women applicants received considerably less favorable evaluations. When these paradigms are applied specifically to leadership perception studies, then it will become clearer under what circumstances female leaders are or are not devalued relative to male leaders.

Knowing under what circumstances leadership evaluations are formed and knowing how they are formed are closely related. For example, in this study subjects were given "paper-people" to evaluate. However, how subjects processed the information contained in the vignettes is the focus of this study. The major finding in this study is that the prototypicality of behavior exhibited by the leader, as well as gender of that leader, determined responses.

With the behavior effect, veridical processing of information is occurring. For example, subjects who read antiprototypical behaviors gave significantly higher ratings on the independent scale of the adjective check list. Clearly, one of the behavioral statements use to construct the antiprototypical behavior vignette (i.e., acted without asking others) is an example of being independent. Similarly, target leaders that display prototypical

behaviors received higher GLI ratings than targets displaying antiprototypical behaviors. In some cases, subjects demonstrated the ability to process information without susceptibility to distortion often caused by categorization.

On the other hand, categorization of targets did occur. As mentioned above, those reading about male leaders were significantly more accurate on the recognition measure as compared to those reading about female leaders, despite the prototypicality of exhibited leader behaviors. Given that otherwise these vignettes only differ on the basis of the target leaders gender, this variable is probably "driving" the categorization process to the extent this process occurs. Thus, there remains evidence for two types of information processing, veridical and categorization, in leadership perceptions. Limited support for this notion was provided in a study by Lord and Alliger (1985).

Lord and Alliger (1985) contrasted four information processing models of leadership (and social perception), with two of models being based on veridical processing and categorization. These authors reported strong support for veridical processing and limited support for a categorization model (Lord & Alliger, 1985). Additionally, they suggest that support for the categorization model would have been stronger had their measures and stimuli been

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designed to assess the viability of this model.

Interesting, Lord and Alliger's model highlights prototypicality of behavior as the basis of categorization, whereas this study assessed whether gender would be the basis of categorization. An alternative explanation for the results of the present study might be that subjects categorized targets based on the prototypicality of exhibited behavior. Yet, given the results of the recognition measure, this latter explanation can only partially explain the obtained results. In congruence with the Lord and Alliger (1985) study, this study supports the notion that actual behaviors (i.e., veridical processing) and gender (i.e., categorization) will effect leadership perceptions. Though this latter effect is present, the specific role of gender is difficult to interpret in the framework of this study.

Regardless of how gender effects perceptions, findings in the literature suggests that women are regarded less favorably then men in terms of leadership and thus gender plays a role in leadership perceptions. Indeed, this study provided indirect evidence that men will be regarded as leaders more than women. First, subjects were reluctant to attribute behaviors that occurred to female leaders. It has the hit rates that determined accuracy on the recognition measure. Second, on the manipulation check question(s) for

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the gender unspecified targets, of all the subjects that
incorrectly identified the gender of the target (38 out of
60 in scheme 1 and 24 out of 60 in scheme 2), only one
subject incorrectly identified the gender of the target as
female.  That is, all except one subject in these conditions
incorrectly assumed that J. A. Wright was male.  This
suggest that in ambiguous situations, people will relate
leadership with males and thus the "male equals leader"
equation still holds.

Baumgardner et al. (1991) note that sex role
stereotypes may lead to utilization of different prototypes
and categorical structures of leadership depending on the
gender of the leader.  Furthermore, given the small amount
of female leaders, prototypes and categories for female
leaders may be poorly defined (Baumgardner et al., 1991),
increasing the reliance on gender.  Thus it remains to be
determined when gender will occupy the basis for
categorization.

One hypothesis suggest that task complexity may be a
key impetus in eliciting social stereotypes (Bodenhausen &
Lichtenstein, 1987) and thus making gender salient in this
leadership perception paradigm.  Bodenhausen and
Lichtenstein (1987) had subjects read criminal trial
information concerning a Hispanic or ethnically nondescript
individual under complex (i.e., determining guilt) and non-

complex (i.e., determining aggressiveness) situations.

After reading the information, subjects were required to
make guilt and aggressiveness judgements as well as recall
information presented to them. Results demonstrated that
"when subjects had a complex information-processing
objective and a stereotype was available and relevant, they
used this stereotype as a way of organizing presented
information into a mental representation...(Bodenhausen &
Lichtenstein, p. 878)."

A similar process might occur in the leadership
perception paradigm. In a complex evaluation task, subjects
might be more inclined to rely on sex role stereotypes
regarding leadership as a means of processing information.
This is the essence of categorization, to reduce the
processing load (Cantor & Mischel, 1979).

Finally, some of the results in this study need to be
clarified. As already mentioned, there was no effect for
the gender of the target. Future research might utilize a
more complex task or increase processing demands to
determine if these conditions will elicit a gender effect.
The task in this study, reading vignettes, might be
considered neither too simple nor too complex relative to
studies with comparable designs.

In terms of sex typing of targets, no consistent
effects were noted. Targets exhibiting prototypical and/or

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neutral behaviors were regarded as more rational, but also softer and more dependent as compared to those exhibiting antiprototypical behaviors. Thus, prototypicality of behavior did not result in any consistent level of sex typing. Several reasons may account for this finding. First, the reliability of this measure was poor (Cronbach's alpha = .487). This measure was chosen since it relates to sex typing in the workforce (Heilman, 1984). A more general, reliable sex typing measure would be more desirable.

Second, the inconsistent effects might reflect the high correspondence between some of the sex typing items and the behaviors utilized in the vignettes. To the extent that processing demands are minimal and subjects thus process information veridically, sex typing will be minimal. Heilman (1984) notes that sex typing occurs in situations were subjects lack relevant information to make judgments. In these situations, subjects will "fall back" on applicable stereotypes (Bodenhausen & Lichtenstein, 1985) concerning women. As noted above, it is this latter interpretation of the results that corresponds more closely to the subjects actual responses. However, in the absence of target gender effects, interpreting any measure dealing with sex typing becomes problematic.

The GLI did not act as a mediator of the subjects

responses. However, the GLI did contribute significant, independent variance to the responses on two of the sex typing items. Thus, general impressions do effect responses. And this effect will likely increase when the processing demands of the subjects are increased.

Finally, the limitations of this study must be addressed. First the use of written vignettes raises questions concerning the generalizability of results. This issue must be view in the terms of the purpose of such studies. In order to demonstrate the existence of gender categorization effects in leadership perceptions it is necessary to procure the experimental control afforded by laboratory studies. As such, laboratory studies initially reign supreme. Later field studies will allow for the generalization issue to be addressed properly.

A second issue concerns the reliabilities of the GLI (alpha = .626) and the adjective check list (alpha = .487). The GLI is an established measure with reliabilities generally ranging above .87 (see Fraser & Lord, 1988). Given that this measure has proven psychometric qualities, the lower reliability with this sample should pose no problems in interpreting the results. Reliability of the adjective check list is discussed above.

In conclusion, both veridical and categorical processing occurred in this study. Actual behaviors

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exhibited by the target leaders accounted for the general leadership impressions ascribed to the leaders. Conversely, gender of the target leaders determined the accuracy for which subjects recognized behaviors that actually occurred in the vignettes. Further result will need to determine the circumstances under which gender might account for all responses.

The bridge between treatment of employed men and women still remains, particularly in management positions (Stroh, Brett, & Reilly, 1992; Morrison & Von Glinow, 1990). Women are less represented in leader positions, overlooked for jobs and promotions more often, receive significantly less pay, and so forth (Morrison & Von Glinow, 1990). Thus there remains considerable work to be accomplished in order to increase equity of treatment among all employed people. Looking at the processes behind workplace perceptions is an necessary avenue for investigation.

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Appendix A

INFORMED CONSENT FORM

Title:  SOCIAL PERCEPTIONS          EXPERIMENT# 1039-91

You are invited to participate in a study investigating social perceptions.  To accomplish the goals of the study, you will be asked to carefully read a short description of a character.  Then you will complete several questionnaires that assess your impressions of the character you read about.  The experiment will take approximately 40 minutes to complete.

PLEASE READ THE FOLLOWING CAREFULLY:

1.  This study will assess the perception process. Understanding the process is necessary to interpret the end results of perceptions.  Hence, these results can potentially add to the literature in person perception and information processing.  Furthermore, since everyone readily engages in person perception this study has practical importance.  For example, understanding the perception process allows errors in perception to be adequately addressed.  Finally, the results of this study will be made available to those interested in this topic upon request. No guarantee of benefits has been make to induce you to participate.

2.  The results of the study will be kept strictly confidential.  At no time will the researcher release the results of the study to anyone, other than individuals working on the project, without your written consent.  The information you provide will have your name removed and only a subject number will identify you during analyses and any write-up of the research.

3.  You are free to withdraw consent to participate and discontinue participation in the experiment at any time.  No penalty will be imposed.

4.  You will receive one (1) point towards your total extra credit points for Introductory to Psychology 2004 for participating in this experiment.  If you withdraw your consent to participate at any time during the experiment, such action will not affect your receiving extra credit.

5.  The information accumulated by this research may be used for scientific or education purposes and information

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relating to your responses may be presented at scientific meetings and/or published and republished in professional journals or books, or used for any other purpose which Virginia Tech's Department of Psychology considers proper in the interest of education, knowledge, or research.

6. This research project has been approved by the Human Subjects Committee of the Department of Psychology and by the Institutional Review Board of Virginia Tech.

STATED PERMISSION FROM SUBJECTS:

1. I have read and understand the above description of the experiment, had an opportunity to ask questions and had them all answered, and hereby acknowledge the above and give my voluntary consent for participation in this study.

2. I understand that I am participating freely in full understanding that I need not participate if I do not wish to, and if I participate I may withdraw at any time without penalty.

3. I understand that should i have any questions about this research and its conduct, I should contact any of the following:

| | | | |
|---|---|---|---|
| Researcher: | Dwayne G. Norris | phone: | 953-0128 |
| Faculty Advisor: | Dr. Roseanne Foti | phone: | 231-5814 |
| Chair, HSC: | Dr. Helen Crawford | phone: | 231-6581 |
| Chair, IRB: | Dr. E. Stout | phone: | 231-9359 |

Signature: _____ Date: _____

Subject ID# _____

PROTOCOL INSTRUCTIONS

1.  Distribute Statement of Informed Consent and one opscan before subjects arrive.  Spread these out as evenly as possible.  Avoid seating any two subjects in adjacent seats. As subjects arrive, instruct them to occupy seats in which these materials are placed.

2.  When all subjects have arrived, have them complete these two forms.  Collect these materials and make sure that all subjects have signed and dated the consent form and properly filled out the opscan form.

3.  Randomly distribute the vignettes by placing them face down in front of each subject.  Instruct subjects not to turn vignettes over until told to do so.

 4.  READ the following instructions:
This is a study of social perceptions.  If you have questions at any time during this session, please raise you hand.  Also, if you complete the required tasks before others, please remain quiet as others will still be working. Please do not touch forms until instructed to do so. Several parts of this study are timed.  For these sections, observe the time limit and start when I say BEGIN.  When I say STOP, immediately put your pencils down and turn the measure over. This study requires that you carefully read a short vignette and then answer several short questionnaires. You will be given four (4) minutes to read the vignette. Carefully read and follow all written instructions that are given.  You may begin.

5.  Use a stop watch to time the readings.  At four minutes say STOP and make sure all subjects stop immediately and turn vignettes over.  Collect the vignettes.

6.  Distribute the Picture-Number test.  This should also be placed face down in front of each subject.  Remind subjects not to turn over forms until instructed.  Read the following instructions:
This next task is also timed and has instructions included with it.  Do not proceed to next page unless instructed to do so.  Again, when told to STOP put your pencils down immediately and turn the measure over.  (Also, read the instructions on the first page of the Picture-Number test.) You may begin.

7.  Time the practice session of the Picture-Number test

(one [1] minute to study and one [1] minute to write).

8.   Immediately proceed to the next portion of the Picture-Number test.   Instruct subjects to BEGIN.

9.   Time this section (four [4] minutes to study and three [3] minutes to write).   Instruct subjects when to STOP and make sure everyone immediately stops the task.   Collect the Picture-Number test.

10.   READ the following:
Next you will be given a packet of questionnaires.   You may take as long as necessary to complete all forms.   Complete all forms in order of appearance and do not go back and change answers on any form once it is completed.   Carefully read and follow the written instructions that accompany each measure.   If you have any questions, please raise your hand. If you complete them before others, raise you hand and they will be collected.

 11.   Collect completed questionnaires and make sure each measure has been completed properly.

12.   Debrief subjects.   Make sure to ask subjects not to discuss this study with anyone, particularly other Introduction to Psychology students!

13.   Thank subjects for participating in the study and dismiss them.

14.   Record the experimental conditions of these subjects to track the experimental conditions that still need to be tested.

MEAN PROTOTYPICALITY RATINGS ON 7 POINT SCALE

| Prototypical Behaviors | Prototypicality |
|---|---|
| **proposed a solution** | 6.39 |
| **assigned task to members** | 6.00 |
| **gave information** | 6.44 |
| **emphasized reaching goal** | 6.61 |
| **acknowledged good work** | 6.53 |
| acted as a mediator | 6.65 |
| admitted a mistake | 6.00 |
| delayed action on motion | 6.34 |
| trusted member's judgment | 6.12 |
| willingly made changes | 6.02 |

Neutral behaviors

| | |
|---|---|
| **agreed with others** | 3.76 |
| **specified a problem** | 4.37 |
| **asked for more effort** | 3.47 |
| **explained his/her action** | 3.95 |
| **asked for approval** | 3.66 |
| accepted member-caused delay | 3.71 |
| concerned with recognition | 4.41 |
| was nervous about task | 3.48 |
| let members choose work | 4.42 |
| stressed competition | 4.47 |

Antiprototypical behaviors

| | |
|---|---|
| **acted without asking others** | 2.02 |
| **criticized poor work** | 1.74 |
| **refused to explain actions** | 2.04 |
| **changed a set plan** | 1.88 |
| **worried over member's idea** | 2.05 |
| wanted own way on issue | 1.41 |
| unsure of meeting details | 1.77 |
| made error in procedure | 2.06 |
| made fun of member | 1.18 |
| confused about an issue | 1.77 |

NOTE: behaviors in **boldface** were utilized in the construction of the vignettes.

Example of the Unspecified Gender Target and
Antiprototypical Behaviors Vignette

Instructions:  Carefully read the following vignette about
J.A. Wright.  You will be given four minutes to read the
vignette.  When you are finished , turn the vignette over
and await further instructions.  Please do NOT write on the
vignettes.

　　　J.A. Wright is currently a junior at a large
university.  J.A. Wright is pursuing a Bachelor of Arts
degree and plans to graduate on time.  J.A. Wright maintains
slightly above average grades.  Thus far, J.A. Wright has
completed all university required courses, including those
in English, mathematics, natural science, social science,
and humanities.  Being well-rounded, J.A. Wright performs
equally well in all academic areas.  Aside from academics,
J.A. Wright participates in various extracurricular
activities and organizations.  One particular organization
in which J.A. Wright is actively involved is the Student
Government Association (SGA).
　　　The role of the SGA is that of promoting and enhancing
student life at the university.  All enrolled undergraduate
students who properly pay university fees are considered
members of the SGA.  As such, it is necessary for all
students to be represented in the daily activities of the
SGA.  Therefore, each year students elect Senators to
represent them in the main decision making body of the SGA.
Because the number of Senators depends on the number of
enrolled students, the total may vary from year to year.
This system of representation operates similarly to that of
the United States government.  Wright holds one of the
Senatorial positions.
　　　The university has recently experienced a dramatic drop
in student involvement in extracurricular activities and
organizations, including SGA.  This lack of student
involvement is a trend that runs counter to the university's
mission policy of developing well-rounded students.
Therefore, top university administrators approached the SGA
executive officers (President, Vice President, Secretary,
and Treasurer) asking for an investigation into the student
body's lack of involvement in extracurricular activities on
campus.  In turn, the SGA executive officers sought and
received confirmation on this proposed project from Senators
and then proceeded with the investigation.  A temporary
committee composed of several Senators was established to
conduct this investigation.  Wright was designated to head
this committee.  The SGA executive officers thoroughly
briefed Wright on what the committee was to accomplish and

subsequently gave full latitude to Wright in accomplishing the goals.

To begin this project, the committee had an initial meeting.  The purpose of this meeting was to devise and initiate plans to accomplish the stated goals.  From the onset, Wright <u>acted without asking others</u> their concerns about this project.  Wright thought it would be beneficial to survey the students in hope of gaining some insight into the general attitudes of the student body.  Consequently, Wright <u>changed a set plan</u>, deciding instead that the committee would distribute surveys over the course of two weeks.  Because the student population is large, two weeks was thought to provide an adequate time frame in which to gather survey responses from a representative sample of the student population.

Since the survey was the foundation of the entire project, it was important to obtain valid results.  Therefore, during these two weeks, Wright <u>criticized poor work</u> of several group members to make sure they would make adequate progress with the survey.  At the end of the two weeks, the committee combined the results of the survey into a comprehensive form.  With the results of the survey, Wright <u>refused to explain</u> certain problem areas with possible solutions that might increase the students' involvement.

Finally, Wright expressed <u>concern over members' ideas</u> in a formal statement to SGA executive officers and other Senators in a SGA meeting.  In turn, the SGA executive officers presented the results to top university administrators for review.  Though the committee was a temporary one, it was not disbanded immediately.  The committee members worked on other projects while awaiting feedback from the university administrators.

Example of the Male Target and Prototypical Behaviors
Vignette

Instructions:  Carefully read the following vignette about
James Wright.  You will be given four minutes to read the
vignette.  When you are finished , turn the vignette over
and await further instructions.  Please do NOT write on the
vignettes.

James Wright is currently a junior at a large
university.  James Wright is pursuing a Bachelor of Arts
degree and plans to graduate on time.  James Wright
maintains slightly above average grades.  Thus far, James
Wright has completed all university required courses,
including those in English, mathematics, natural science,
social science, and humanities.  Being well-rounded, James
Wright performs equally well in all academic areas.  Aside
from academics, James Wright participates in various
extracurricular activities and organizations.  One
particular organization in which James Wright is actively
involved is the Student Government Association (SGA).
The role of the SGA is that of promoting and enhancing
student life at the university.  All enrolled undergraduate
students who properly pay university fees are considered
members of the SGA.  As such, it is necessary for all
students to be represented in the daily activities of the
SGA.  Therefore, each year students elect Senators to
represent them in the main decision making body of the SGA.
Because the number of Senators depends on the number of
enrolled students, the total may vary from year to year.
This system of representation operates similarly to that of
the United States government.  Wright holds one of the
senatorial positions.
The university has recently experienced a dramatic drop
in student involvement in extracurricular activities and
organizations, including SGA.  This lack of student
involvement is a trend that runs counter to the university's
mission policy of developing well-rounded students.
Therefore, top university administrators approached the SGA
executive officers (President, Vice President, Secretary,
and Treasurer) asking for an investigation into the student
body's lack of involvement in extracurricular activities on
campus.  In turn, the SGA executive officers sought and
received confirmation on this proposed project from Senators
and then proceeded with the investigation.  A temporary
committee composed of several Senators was established to
conduct this investigation.  Wright was designated to head
this committee.  The SGA executive officers thoroughly
briefed Wright on what the committee was to accomplish and

subsequently gave Wright full latitude in accomplishing the goals.

To begin this project, the committee had an initial meeting. The purpose of this meeting was to devise and initiate plans to accomplish the stated goals. At this meeting, Wright started by <u>emphasizing the goals</u> of the project. After trading ideas, Wright thought it would be beneficial to survey the students in hope of gaining some insight into the general attitudes of the student body. Thus, Wright <u>assigned members</u> in the committee to distribute surveys to all students over the course of about two weeks. Because the student population is large, two weeks was thought to provide an adequate time frame in which to gather survey responses from a representative sample of the student population.

Since the survey was the foundation of the entire project, it was important to obtain valid results. Therefore, during these two weeks, Wright regularly <u>gave information</u> to all group members to make sure they were making adequate progress with the survey. At the end of the two weeks, the committee combined the results of the survey into a comprehensive form. With the results of the survey, Wright <u>acknowledged the good work</u> of the committee in generating data for this project.

Finally, Wright <u>proposed a solution</u> in a formal statement to the SGA executive officers and other Senators in a SGA general meeting. In turn, the SGA executive officers presented the results to top university administrators for review. Though the committee was a temporary one, it was not disbanded immediately. The committee members worked on other projects while awaiting feedback from the university administrators.

Instructions:  Carefully read the following vignette about
Jane Wright.  You will be given four minutes to read the
vignette.  When you are finished , turn the vignette over
and await further instructions.  Please do NOT write on the
vignettes.

        Jane Wright is currently a junior at a large
university.  Jane Wright is pursuing a Bachelor of Arts
degree and plans to graduate on time.  Jane Wright maintains
slightly above average grades.  Thus far, Jane Wright has
completed all university required courses, including those
in English, mathematics, natural science, social science,
and humanities.  Being well-rounded, Jane Wright performs
equally well in all academic areas.  Aside from academics,
Jane Wright participates in various extracurricular
activities and organizations.  One particular organization
in which Jane Wright is actively involved is the Student
Government Association (SGA).
        The role of the SGA is that of promoting and enhancing
student life at the university.  All enrolled undergraduate
students who properly pay university fees are considered
members of the SGA.  As such, it is necessary for all
students to be represented in the daily activities of the
SGA.  Therefore, each year students elect Senators to
represent them in the main decision making body of the SGA.
Because the number of Senators depends on the number of
enrolled students, the total may vary from year to year.
This system of representation operates similarly to that of
the United States government.  Wright holds one of the
senatorial positions.
        The university has recently experienced a dramatic drop
in student involvement in extracurricular activities and
organizations, including SGA.  This lack of student
involvement is a trend that runs counter to the university's
mission policy of developing well-rounded students.
Therefore, top university administrators approached the SGA
executive officers (President, Vice President, Secretary,
and Treasurer) asking for an investigation into the student
body's lack of involvement in extracurricular activities on
campus.  In turn, the SGA executive officers sought and
received confirmation on this proposed project from Senators
and then proceeded with the investigation.   A temporary
committee composed of several Senators was established to
conduct this investigation.  Wright was designated to head
this committee.  The SGA executive officers thoroughly
briefed Wright on what the committee was to accomplish and
subsequently gave Wright full latitude in accomplishing the

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goals.

To begin this project, the committee had an initial meeting. The purpose of this meeting was to devise and initiate plans to accomplish the stated goals. At this meeting, Wright started by <u>specifying the problems</u> of the project. After trading ideas, Wright thought it would be beneficial to survey the students in hope of gaining some insight into the general attitudes of the student body. Thus, Wright <u>agreed with others</u> in the committee to distribute surveys to all students over the course of two weeks. Because the student population is large, two weeks was thought to provide an adequate time frame in which to gather survey responses from a representative sample of the student population.

Since the survey was the foundation of the entire project, it was important to obtain valid results. Therefore, during these two weeks, Wright regularly <u>asked for more effort</u> from the group to ensure they were making adequate progress with the survey. At the end of the two weeks, the committee combined the results of the survey into a comprehensive form. With the results of the survey, Wright <u>asked for approval</u> from the committee to possible solutions that could potentially increase student involvement.

Finally, Wright <u>explained all actions</u> taken in addressing the problem to the SGA executive officers and other Senators in a SGA general meeting. In turn, the SGA executive officers presented the results to top university administrators for review. Though the committee was a temporary one, it was not disbanded immediately. The committee members worked on other projects while awaiting feedback from the university administrators.

GENERAL LEADERSHIP IMPRESSION INVENTORY

<u>Instructions</u>:  Rate the character in the vignette you have read on each of the statements below.  Circle the number of the response you think applies to Wright most accurately. Use the following scale to 1 to 5 with these meanings:

| Nothing | Very Little | Moderate Amount | Substantial Amount | Extreme Amount |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

1.    How much did this member contribute to the effectiveness of the task?
      1   2   3   4   5
2.    What degree of influence did this member exert in determining the final outcome of the task?
      1   2   3   4   5
3.    How much leadership did this member exhibit?
      1   2   3   4   5
4.    How much control over a group's activities did this member exhibit?
      1   2   3   4   5
5.    If you had to choose a leader for a task, how willing would you be to vote for this member as leader?
      1   2   3   4   5

ADJECTIVE CHECK LIST

Instructions:  Circle the number you think best describes Wright on the following attributes.  The end points, number 1 and 9, represent extremes and correspond to the written attributes.  The number 5 is the midpoint.

```
ambitious                              unambitious
     1    2    3    4    5    6    7    8    9
emotional                              rational
     1    2    3    4    5    6    7    8    9
decisive                               indecisive
     1    2    3    4    5    6    7    8    9
soft                                   tough
     1    2    3    4    5    6    7    8    9
dependent                              independent
     1    2    3    4    5    6    7    8    9
```

Note:     The first and third items are reversed scored.

RECOGNITION  MEMORY MEASURE

Instructions:  For each behavior listed below, indicate
whether or not Wright exhibited that particular behavior in
the vignette you read by circling the correct response.

1.   agreed with others                    yes or no
2.   was nervous about task                yes or no
3.   let members choose work               yes or no
4.   accepted member-caused delay          yes or no
5.   stressed competition                  yes or no
6.   acted as a mediator                   yes or no
7.   explained his action                  yes or no
8.   trusted member's judgment             yes or no
9.   refused to explain an action          yes or no
10.  acted without asking others           yes or no
11.  made fun of member                    yes or no
12.  specified a problem                   yes or no
13.  wanted own way on issue               yes or no
14.  proposed a solution                   yes or no
15.  asked for approval                    yes or no
16.  concerned over member's idea          yes or no
17.  confused about an issue               yes or no
18.  changed a set plan                    yes or no
19.  gave information                      yes or no
20.  assigned task to member               yes or no
21.  concerned with recognition            yes or no
22.  unsure of meeting details             yes or no
23.  criticized poor work                  yes or no
24.  willingly made changes                yes or no
25.  asked for more effort                 yes or no
26.  emphasized reaching goals             yes or no
27.  made error in procedure               yes or no
28.  admitted a mistake                    yes or no
29.  acknowledged good work                yes or no
30.  delayed action on issue               yes or no

MANIPULATION CHECK/DEMOGRAPHIC INFORMATION

<u>Instructions</u>:  Please answer the following questions
carefully.


1.  In the space below, write as carefully as possible the
written instructions included at the top of the vignette you
read.  If you need extra space, write on the back of this
page.


2.  Please indicate the name and sex of the person you read
about in the vignette.


3.  Indicate the following:

    A.   Male_____     Female_____
    B.   Freshman _____
       Sophomore_____
       Junior   _____
       Senior   _____
       Other (indicate)_____
    C.   AGE _____

Table 1
Analysis of Variance for the Picture Number Test

| Source | DF | Mean Square | F-Value |
|---|---|---|---|
| EXP/GRP(A) | 8 | 37.960 | 1.77 |
| SUB/SEX(B) | 1 | 25.869 | 1.21 |
| CLASS | 3 | 20.737 | .97 |
| AGE | 9 | 15.319 | .71 |
| A*B | 8 | 14.820 | .69 |

(N = 180). No significant differences at the p < .05 level.

MEANS AND STANDARD DEVIATIONS:

| Levels of Variable: EXP/GRP | N | MEANS | Std. |
|---|---|---|---|
| (1)M/PR | 20 | 16.05 | 3.82 |
| (2)M/NT | 20 | 16.30 | 5.79 |
| (3)M/AP | 20 | 14.10 | 3.00 |
| (4)N/PR | 20 | 13.65 | 4.46 |
| (5)N/NT | 20 | 16.55 | 3/93 |
| (6)N/AP | 20 | 14.20 | 5.27 |
| (7)F/PR | 20 | 14.55 | 3.98 |
| (8)F/NT | 20 | 16.95 | 3.80 |
| (9)F/AP | 20 | 17.25 | 3.99 |

| Levels of Variable: SUBJECT GENDER | N | MEANS | Std. |
|---|---|---|---|
| Males | 91 | 15.12 | 4.62 |
| Females | 89 | 15.91 | 4.67 |

| Levels of Variable: CLASS | N | MEANS | Std. |
|---|---|---|---|
| Freshmen | 82 | 15.51 | 4.67 |
| Sophomore | 55 | 14.87 | 4.68 |
| Junior | 29 | 16.48 | 4.12 |
| Seniors | 14 | 16.00 | 5.45 |

| Levels of Variable: AGE | N | MEANS | Std. |
|---|---|---|---|
| 17 | 1 | 21.00 | ---- |
| 18 | 53 | 15.64 | 4.92 |
| 19 | 65 | 14.94 | 4.48 |
| 20 | 32 | 15.94 | 4.45 |
| 21 | 19 | 15.68 | 4.56 |
| 22 | 5 | 15.20 | 4.09 |
| 23 | 2 | 13.00 | 11.31 |
| 24 | 1 | 21.00 | ---- |
| 25 | 1 | 21/00 | ---- |

EXP/GRP = Experimental group, SUB/SEX = Gender of subject, CLASS = freshman thru senior only, AGE = range from 17 to 25 (one subject did not specify age, M = 21.00), M = male, F = female, N = unspecified gender, PR = prototypical behavior, NT = neutral behavior, AP = antiprototypical behavior.

Table 2
Analysis of Variance for the GLI

| Source | DF | Mean Square | F-Value |
|---|---|---|---|
| TAR/SEX (A) | 2 | 6.0722 | 0.60 |
| TAR/BEH (B) | 2 | 85.5722 | 8.45* |
| SUB/SEX (C) | 1 | 60.3317 | 5.96** |
| A*B | 4 | 12.0361 | 1.19 |
| A*C | 2 | 11.7464 | 1.16 |
| B*C | 2 | 5.1662 | 0.51 |
| A*B*C | 4 | 11.8554 | 1.17 |

(N = 180)

MEANS AND STANDARD DEVIATIONS:

| NEUTRAL TARGETS | | | FEMALE TARGETS | | | MALE TARGETS | | |
|---|---|---|---|---|---|---|---|---|
| PR | NT | AP | PR | NT | AP | PR | NT | AP |
| 19.7 | 21.0 | 19.1 | 21.1 | 19.4 | 18.7 | 19.8 | 21.0 | 18.4 |
| **2.63** | **3.13** | **3.70** | **3.22** | **3.92** | **4.30** | **1.55** | **2.21** | **3.60** |
| 18.3 | 19.1 | 15.9 | 19.3 | 19.5 | 18.9 | 21.1 | 19.7 | 16.0 |
| **3.20** | **2.69** | **3.28** | **1.49** | **3.37** | **3.73** | **2.69** | **3.65** | **3.50** |

NOTE: means and standard deviations across female subjects groups are above the dashed (---) line.

DUNCAN'S MRT TABLE FOR SIGNIFICANT EFFECTS:

| **TAR_BEH** | **N** | **MEAN** |
|---|---|---|
| NT | 60 | 19.95a |
| PR | 60 | 19.85a |
| AP | 60 | 17.83b |
| **SUB_SEX** | **N** | **MEAN** |
| F | 89 | 19.79a |
| M | 91 | 18.65b |

NOTE: means with different letter subscripts are significantly different by Duncan's MRT.
TAR/SEX = gender of target, TAR/BEH = prototypicality of behavior, SUB/SEX = gender of subject, M = males, F = females, N = unspecified gender, AP = antiprototypical behavior, NT = neutral behavior, PR = prototypical behavior.
** p < 0.05.
* p < 0.001.

Table 3
Means and Standard Deviations for Accuracy,
False Positive Rates, and Hit Rates.

Male/prototypical behavior group:

| Variable | N | MEAN | STD. |
|---|---|---|---|
| accuracy | 20 | 0.854a | 0.098 |
| false pos. | 20 | 0.420 | 0.259 |
| hits | 20 | 0.930a | 0.117 |

Male/antiprototypical behavior group:

| Variable | N | MEAN | STD. |
|---|---|---|---|
| accuracy | 20 | 0.843a | 0.121 |
| false pos. | 20 | 0.410 | 0.238 |
| hits | 20 | 0.910a | 0.152 |

Female/prototypical behavior group:

| Variable | N | MEAN | STD. |
|---|---|---|---|
| accuracy | 20 | 0.708b | 0.127 |
| false pos. | 20 | 0.470 | 0.254 |
| hits | 20 | 0.710b | 0.165 |

Female/antiprototypical behavior group:

| Variable | N | MEAN | STD. |
|---|---|---|---|
| accuracy | 20 | 0.688b | 0.170 |
| false pos. | 20 | 0.420 | 0.275 |
| hits | 20 | 0.680b | 0.188 |

Note: means with different subscripts are significantly different.

Table 4
Hierarchical Regression Analysis With Selective
Adjective Check list Items
------------------------------------------------------

**Dependent Variable:** emotional/rational

| Independent Variables | R-square | Change in R-Square |
|---|---|---|
| **Step 1** | | |
| GLI | 0.1739* | --------- |
| **Step 2** | | |
| TARGET GENDER | | |
| TAR/BEH | | |
| SUBJECT SEX | 0.2570* | 0.0831* |

**Dependent Variable:** soft/tough

| Independent Variables | R-square | Change in R-square |
|---|---|---|
| **Step 1** | | |
| GLI | 0.0016 | --------- |
| **Step 2** | | |
| TARGET GENDER | | |
| TAR/BEH | | |
| SUBJECT SEX | 0.3159* | 0.3143* |

**Dependent Variable:** dependent/independent

| Independent Variables | R-square | Change in R-square |
|---|---|---|
| **Step 1** | | |
| GLI | 0.0003 | --------- |
| **Step 2** | | |
| TARGET GENDER | | |
| TAR/BEH | | |
| SUBJECT GENDER | 0.0460 | 0.0457* |

GLI = general leadership impression,
TAR/BEH = prototypicality of target behavior
(N = 180).
* $p < 0.05$.

# VITA

## DWAYNE GORDON NORRIS

**ADDRESS:**

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**EDUCATION:**

1990-1992: Virginia Polytechnic Institute and State University, Blacksburg, Virginia
M.S. in Industrial/Organizational Psychology, December, 1992

Thesis title: Leadership Perceptions of Men and Women: A Leadership Categorization View

1985-1989: Lafayette College, Easton, Pennsylvania
B.A. in Psychology, December, 1989
full tuition scholarship

**RESEARCH EXPERIENCE:**

8/91-11/92 Thesis Research
Roseanne J. Foti (Chair), VPI & SU, Blacksburg, VA
Designed and implemented a laboratory study to assess the process of leadership perceptions of men and women from a leadership categorization perspective.

8/86-12/89 General Research Projects
Lafayette College, Easton, PA
Completed numerous research projects as requirements in various undergraduate courses. Types of research include laboratory, survey, archival, and field research. Several research proposals and projects completed.

**TEACHING EXPERIENCE:**

8/90-12/90   Graduate Teaching Assistant
Virginia Polytechnic Institute and State
 University, Department of Psychology,
 Blacksburg, VA
Instructed laboratory session of
introductory psychology course;
facilitated class
discussions; prepared and presented
lectures and demonstrations; assisted in
administration of exams; provided
individual assistance as needed.

6/90-8/90   High School Summer Teacher
University of the District of
 Columbia, Washington, DC
Taught introductory and advanced
algebra to high school students in a
program sponsored by UDC; prepared and
gave lectures; developed exercises and
examples to promote class participation;
constructed exams; provided individual
assistance as needed.

**WORK EXPERIENCE:**

1/92-1/92   Bell Atlantic, Arlington, VA
Temporary work in administering a
computerized selection test as part of
a company wide validation study;
assisted in set-up of test; provided
individual assistance to test takers;
provided limited feedback to test
takers.

**GRADUATE COURSE WORK :**

**I/O Courses and Seminars:**
Industrial Psychology
Organizational Psychology
Labor Relations Issues
Leadership Perceptions
Performance Appraisal
**Quantitative and Methodological Courses:**
Research Methodology
General Statistics
Multiple Regression
Advanced Quantitative Topics
Advanced Psychometrics

**HONORS AND AWARDS:**
Patricia Roberts Harris Fellow
1989 Varsity Football Co-Captain
1989 All Colonial League Team

*Dwayn A. Lewis*