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EFFECTS OF GENDER, PERFORMANCE TRENDS AND CAUSAL INFORMATION ON THE FORMATION OF ATTRIBUTIONS FOR HIGH PERFORMERS: IMPLICATIONS FOR PERSONNEL DECISIONS

presented by

Stanley Morris Gully

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EFFECTS OF GENDER, PERFORMANCE TRENDS AND CAUSAL INFORMATION ON THE FORMATION OF ATTRIBUTIONS FOR HIGH PERFORMERS: IMPLICATIONS FOR PERSONNEL DECISIONS

By

Stanley Morris Gully

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ABSTRACT

EFFECTS OF GENDER, PERFORMANCE TRENDS AND CAUSAL INFORMATION ON THE FORMATION OF ATTRIBUTIONS FOR HIGH PERFORMERS: IMPLICATIONS FOR PERSONNEL DECISIONS

By

Stanley Morris Gully

The current study was designed to investigate how gender and performance trends interact with causal attributions of locus, controllability, and stability to affect personnel decisions. The study was a 2 (Employee Gender) X 3 (Performance Trend) X 3 (Informational Cues) experiment, which included undergraduate students as participants. The results indicate informational cues of effort, ability, and ease of job vary in perceived locus of causality, controllability, and stability, as predicted by attribution theory. These attributions, in turn, interact with performance trends to affect personnel decisions. Results also indicate employee gender interacts with causal information and performance trends to affect attributions and personnel decision outcomes, though not as hypothesized. Implications for organizational contexts and future research are discussed.

This is dedicated to my grandfather, James L. Gully.

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INTRODUCTION

Organizations have paid an increasing amount of attention to diversity issues in work environments. This trend is expected to continue as a result of changing demographics within the work force and increasing amounts of legislation designed to promote equal opportunity and prevent discriminatory practices (e.g., Civil Rights Act of 1991). Between now and the year 2000, the number of 16-24 year olds available for employment is expected to decrease, while the number of women and minorities available for employment is expected to increase. Between 1989 and the year 2000, 92% of work force growth is projected to consist of women, minorities, and immigrants (London, 1989).

With regard to work opportunities, management and executive positions are projected to be among the fastest growing occupations between 1984 and 1995 (U.S. Department of Labor, 1987). Typically, management and executive positions are perceived to be of high status, highly valued, and expected to require skills and leadership on the part of the performer. However, women and minorities have traditionally been underrepresented in these occupations, especially in higher levels of management (Morrison & Von Glinow, 1990). For example, women fill nearly a third of

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all management positions, but only 3.6% of board directorships and 1.7% of corporate officerships in Fortune 500 companies were held by women in 1988 (Morrison & Von Glinow, 1990; Von Glinow & Krzyczkowska-Mercer, 1988). Researchers have suggested that stereotyping processes may help to explain why women who work as managers earn only 61% of what men earn as managers and only .6% of managers who earned $100,000 a year or more were women (Brenner, Tomkiewicz, & Schein 1989).

Lord and Maher (1991), and Fiske, Bersoff, Borgida, Deaux, and Heilman (1991) documented an interesting case of how gender stereotypes affected decisions made with regard to the promotion of a female executive manager. Ann B. Hopkins joined Price Waterhouse in 1978 and quickly became a successful manager by developing over 40 million dollars in new business. She was the only woman of 88 nominees for partnership in 1982, and she had brought more business to the firm than any of the other nominees (Greenhouse 1989). Despite her achievements, she was not made a partner, while 47 of the remaining 87 male nominees were made partners. During discussion of her qualifications, many comments centered on the sex of Ann B. Hopkins and her fit with gender stereotypes. Supporters described her as outspoken, independent, self-confident, assertive, and courageous while her detractors interpreted the same behavior as overbearing, arrogant, self-centered, and abrasive (American Psychological Association, 1988; Fiske et al., 1991). One eva

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evaluator suggested that she take a "course at charm school" while another said complaints came up only because "she is a lady using foul language" (Bales, 1988).

The example above is consistent with the idea that gender stereotypes can have effects on the encoding, interpretation, and retrieval of information relevant to a person and that person's behavior (Deaux, 1976; Dipboye, 1985; Heilman, 1983; Ilgen & Youtz, 1986; Feldman, 1990; Wyer & Srull, 1984). Researchers have found that women are less likely than men to be rated positively, rewarded, promoted, or hired in many personnel situations (Cohen & Bunker, 1975; Eagly, Makhijani, & Klonsky, 1992; Fidell, 1970; Landy & Farr, 1980; Olian, Schwab, & Haberfeld, 1988; Rosen & Jerdee, 1973, 1974; Terborg & Ilgen, 1975). This effect is especially strong when the job is a traditionally masculine one (Heilman, Martell, & Simon, 1988; Plake et al., 1987, Rosenwasser & Dean, 1989; Terborg & Ilgen, 1975), a physical one (Mendel & Shoenfelt, 1992), or if the female is particularly attractive (Heilman & Stopeck, 1985a; 1985b; Spencer & Taylor, 1988). Some conflicting findings have also been found (Kinicki & Griffeth, 1985; Lefkowitz & Battista, 1992), and estimates of effect sizes have been small in some studies (Swim, Borgida, & Maruyama, 1989; Eagly et al., 1992).

Some investigators have hypothesized that the biases described above are the result of the influence of gender stereotypes on inferred causes of performance (Deaux, 1976;

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Heilman, 1983). A stereotype is a set of inferred relations that associate a social category with personal attributes (Ashmore & Del Boca, 1979). Because people often possess knowledge structures about a variety of social categories (e.g., race, sex, and age), these categories are used as sources of information about the underlying dispositional qualities of individuals (Stangor, Lynch, Duan, & Glass, 1992). Hamilton, Sherman, and Ruvolo (1990) noted that a stereotype is an important source of expectancies for attributes that individual group members are likely to possess. Thus, researchers have converged on the following definition of a stereotype: A set of attributes ascribed to a group and imputed to its individual members simply because they belong to that group (Taylor, Fiske, Etcoff, & Ruderman, 1978; Heilman, 1983). Schein's (1978) definition of a sex role stereotype is consistent with this definition. She defines a sex role stereotype as the belief that a set of traits and/or abilities is more likely to be found among one sex than the other. Because stereotypes are sources of expectancies for categories of people, they may serve as simplifying heuristics which allow people to quickly and economically organize and retrieve information (Deaux, 1984; Fiske & Taylor, 1984).

On the basis of the ideas presented above, it is clear that stereotypes are expectations which structure social perception (Deaux, 1976; Hamilton, 1981). That is, they are likely to affect attention to information and the way in

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which information is processed, encoded, retrieved, or interpreted (Bierhoff, 1989; Bodenhausen & Wyer, 1985; Fiske & Neuberg, 1990; Hamilton, Sherman, & Ruvolo, 1990; Lord & Maher, 1991). The way that performance-related information is treated as a result of stereotypes may explain some of the findings cited earlier with regard to gender-related bias in personnel ratings and decisions.

When leaders, managers, or supervisors make ratings or personnel decisions, they look not only at the occurrence of the performance itself, but they also look for information with regard to the cause of the observed performance (Dugan, 1989; Feldman, 1981; Gioia & Sims, 1986; Green & Mitchell, 1979; Ilgen & Youtz, 1986; Mitchell & O'Reilly, 1990). A large body of research has indicated that gender stereotypes play an important role in influencing the perceived causes of good or poor performance of males and females in a wide variety of contexts (Deaux, 1976; Deaux & Emswiller, 1974; Feldman-Summers & Kiesler, 1974; Etaugh & Brown, 1975; Garland & Price, 1977; Heilman & Stopeck, 1985a; L'Heureux-Barrett & Barnes-Farrell, 1991; Nieva & Gutek, 1980; Pazy, 1986; Pence, Pendleton, Dobbins, & Sgro, 1982). Research also suggests that this effect can be attenuated by providing information which is clearly related to performance outcomes or causes of performance outcomes (Deaux & Emswiller, 1974; Heilman & Guzzo, 1978; Terborg & Ilgen, 1975).

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Most studies of how stereotypes influence causal ascriptions to observed performances have been conducted within the framework of attribution theory. The causal ascriptions, or attributions, which a person makes to an observed event are hypothesized to impact on a person's affect, attitude, future expectancies, behavior, motivation, judgments, and decisions (Green & Mitchell, 1979; Heider, 1958; Weiner, 1974, 1985, 1986; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum 1971). These attributions can be affected by gender stereotypes, resulting in gender-related bias with regard to personnel decisions and evaluations (Feldman, 1981; Heilman, 1983; Ilgen & Youtz, 1986).

The current research effort attempts to integrate recent developments in attribution theory with the effects of gender stereotypes on personnel decision making. Previous research using attribution theory as an explanation of personnel decision outcomes has not considered the effect of causes perceived to be due to controllable factors on decision making processes. The perceived controllability or responsibility of a performance outcome has been identified by attribution researchers as an important dimension of causal factors (Folkes & Marcoux, 1984; Weiner, 1985; 1986; Weiner, Perry, & Magnusson, 1988). Also, research has infrequently investigated the presence of an ingroup/outgroup gender bias on attributions, though a growing body of research indicates that this might be an important component of the attributional process (Hewstone,

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1990; Hewstone & Ward, 1985; Jackson, Sullivan, & Hodge, 1993; Taylor & Jaggi, 1974).

This study also looks more carefully at the conditions under which personnel decisions are often made and how these might actually affect attributional processes. For example, when considering promotions, decision makers rarely consider employees who are below average; instead, decision makers typically only consider above average performers. An interesting question is thus posed: Do gender-related attributional biases occur for employees who are all above average in performance? Conflicting hypotheses can be generated on the basis of the previously cited research.

Finally, this research effort also attempts to develop and test a conceptual model of how gender stereotypes influence attributional processes and how the attributions made as a result of those processes can affect different types of personnel decisions. In order to develop and explain the conceptual model, it will be helpful to review the literature on gender stereotypes, attribution theory, and personnel decision making.

The literature review will occur in three parts. First, the conceptual foundations of attribution theory and effects of attributions on leader and managerial decisions and behavior will be examined. Recent advances in attribution theory will be mentioned as an important but neglected area of personnel decision making research. Second, the effects of gender stereotypes on personnel dec

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decision making will be reviewed, and the role of attributions in making these decisions will be explored. Finally, a conceptual model will be presented to integrate research on gender stereotypes, attribution theory, and personnel decision making. This model will deal with problems not considered in prior research efforts, and it will yield several testable hypotheses.

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REVIEW OF THE LITERATURE

Attribution Theory and Leader Decisions

Attribution theory. Attribution theory is about the causal explanations of events which occur as a part of daily life (Heider, 1958). The theory mainly developed as an explanation of social perception. For example, if someone is successful at a task, different causal explanations can be made about why that person is successful. Kelly (1971, 1973), Jones (1979), and Jones and Davis (1965) describe the process as one whereby people function as "naive psychologists" and automatically try to make sense of the world around them. Part of this process includes inferring the reason or cause of a particular observed event. Research has supported the idea that people spontaneously generate a variety of causes for various types of observed events and outcomes (Anderson, 1983; Frieze, 1976; Kelley, 1973; Meyer, 1980; Weiner et al., 1971; Weiner, 1986).

According to attribution researchers, the cause which is attributed to the observed behavior of a person will have different effects on how that person is perceived and treated. Weiner et al. (1971), identified locus of causation and stability as two important causal dimensions bel

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believed to account for most of the attributions people make to explain success and failure.

<u>Locus of Causality (Internal or External)</u>: The degree to which a cause is located within a person, rather than outside the person (Weiner, 1979).

<u>Stability</u>: The degree to which a cause can be expected to be present at the same level every time the same situation arises (Weiner, 1979).

Crossing these two dimensions yields a two by two classification system with four possible conditions of causality: internal and stable (e.g., ability); internal and unstable (e.g., effort); external and stable (e.g., task difficulty); and external and unstable (e.g., luck). As explanations of observed behaviors, these four causes have been linked to a wide variety of observer reactions, including helping behavior, affect, and expectancies for future behaviors (Valle & Frieze, 1976; Harvey & Weary, 1984; Weiner, 1972, 1974, 1985, 1986).

According to Weiner (1972), affective or evaluative reactions to task outcomes are held to be a function of the perceived reasons for these outcomes. For example, Weiner and Kukla (1970), Leventhal and Michaels (1971), and Rest, Nierenberg, Weiner, and Heckhausen (1973) found that attributions of effort led to more intense reactions to good performers than did attributions of ability.

It should be noted that more recent work by attributional researchers (e.g Weiner, 1985, 1986) has sug

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suggested the presence of a third attributional dimension, termed controllability. This third dimension of causal attributions will be discussed in a later section.

Effects on leader decisions and behaviors. Performance attributions to ability, effort, task difficulty, and luck have been linked to a wide variety of supervisory, managerial, and leader behaviors and decisions made in response to observed performance outcomes. Research which has examined the effects of attributions on supervisory responses to subordinate performance has found that the attributions which are made about a subordinate's performance will affect feedback and communication processes (Dugan, 1989; Gioia & Sims, 1986; Ilgen & Knowlton, 1980; Martinko & Gardner, 1987; Mitchell & Wood, 1980; Heneman, Greenberger, & Anonyuo, 1989) and supervisory decisions and actions (Goodstadt & Kipnis, 1970; Kipnis & Cosentino, 1969; Green & Mitchell, 1979; Knowlton & Mitchell, 1980; Mitchell & O'Reilly, 1990).

Dugan (1989) studied leader communication patterns using 52 MBA students who played the part of a manager in a feedback session. She found a consistent relational communication pattern, or script, occurred during the feedback process and this script was influenced by the manager's initial attributions of effort or ability as the reason for the subordinate's poor performance. The attributions made also affected salary decisions such that when poor performance was attributed to lack of effort, decisions were more punitive. Similarly, in a study using 40 people who acted as supervisors of three person work groups, Ilgen and Knowlton (1980) found the nature of feedback given by supervisors was strongly affected by performance level when the attribution of performance was to effort, but no difference was found in the nature of feedback when the attribution was to ability. These studies indicate attributions of effort and ability interact with observed performance to affect feedback behaviors of supervisors and managers such that effort attributions result in more extreme responses than do ability attributions.

In addition to affecting attitudes and communication behaviors, attributions have been linked to a variety of leader/supervisory decisions and reactions to performance. Green and Liden (1980) found a supervisor's belief about the cause of a subordinate's poor performance affected the supervisor's reaction to that performance and the extent to which he or she used control policies (verbal warnings vs. docked pay). When the subordinate was seen as the causal factor of performance, control responses were directed more at the subordinate, more punitive, and included more change to his or her job than when external factors were seen as the cause of performance. Again, causal attributions were found to affect supervisory behaviors.

Knowlton and Mitchell (1980) examined the effects of a supervisor's attributions about the causes of a

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subordinate's poor performance on the evaluation of that subordinate. Forty undergraduate students were randomly assigned to one of four conditions in which they supervised three other students, actually confederates, working on a questionnaire coding task. One subordinate performed either well or poorly relative to the other two, and the leader was led to believe that this performance was due to either effort (behavioral cues) or ability (scores on an ability test). The supervisor then evaluated the "key" subordinate on his/her performance. Results indicated that attributions to effort led to more extreme evaluations than attributions to ability; this is consistent with the literature cited above. An attribution of effort as a cause of performance led to higher evaluations when performance was high and to lower evaluations when performance was low than when ability was seen as a cause of performance.

In an effort to explain how attributions can affect leader behaviors and decisions, Green and Mitchell (1979) proposed a two-stage process model in which the leader functions as an information processor. In the first stage, leaders engage in diagnosis or explanation of observed behaviors or performance (attributions). In the second stage, leaders respond to the behaviors or performance in a manner consistent with the attributions made. Green and Mitchell state that the attributions which the supervisor makes can affect leader behaviors such as 1) rewarding and punishing member performance; 2) closeness of supervision;

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3) expectancies about the member's future performance; and 4) aspirations the leader might hold for a member. Support for the model has been consistent (Dugan, 1989; Gioia & Sims, 1986; Mitchell & Kalb, 1982; Mitchell & Wood, 1980; Wood & Mitchell; 1981).

Taken together, the results of the studies cited above suggest three things. First, supervisors and managers make causal attributions for observed performance outcomes. Second, attributions affect supervisory reactions to performance such that perceived internal causes are more likely to result in responses directed at the subordinate than are perceived external causes. Third, effort attributions result in more extreme evaluations and responses to performance than do ability attributions; this is particularly true when supervisors are attempting to change subordinate behaviors. In other circumstances, like recruitment, ability may lead to stronger supervisory responses. For example, Nicholls (1976) found that people preferred working with people of high ability over working with people who put forth high effort, although they considered high effort to be a very positive characteristic. While many researchers have viewed the differential effects of ability and effort as a function of the stability dimension of attributions, recent work suggests that the strong effect of effort attributions as compared to ability attributions can be explained by the presence of a third dimension in the attributional framework.

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Controllability as an attributional dimension. In addition to locus of causation and stability, attribution researchers have hypothesized the existence of a third dimension of causation, termed controllability (Weiner, 1979, 1985). Controllability is not the same as locus of causation because a cause may be internal to a person but the cause still may not be considered intentional or controllable.

For example, attributions of beauty or ability, while internal and stable, are generally viewed as unmodifiable or uncontrollable because one cannot change one's innate characteristics. On the other hand, consistent effort may also be considered to be an internal and stable cause, but it will be considered to be more controllable than ability or beauty (Weiner, 1985, 1986).

Researchers have frequently interpreted locus of causality in a fashion similar to controllability. Mitchell and Wood (1980) stated: "When an internal attribution is made, we would expect the leader to direct the response toward the subordinate in an attempt to change the subordinate's behavior through feedback, punishment, or training" (p. 125, emphasis added). Ilgen and Knowlton (1980) used the following citation as an explanation for how attributions may affect the feedback process: "With regard to performance feedback, the primary attributional concerns are those related to internal factors. Since feedback is information directed at the subordinate in order to change

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or maintain his or her behavior, we can assume that the conveyor of the feedback believes that the individual to whom the feedback is directed can have some effect on performance." (Knowlton & Mitchell, Note 3, cited in Ilgen & Knowlton, 1980, emphasis added).

The notion that a subordinate can change or have an effect on his or her behavior or performance level suggests the subordinate can control the observed performance level or behavior to some degree. However, as noted above, the fact that a cause has an internal locus of causation does not mean the cause is within a person's control.

Weiner (1974, 1979, 1985) modified the original classification system of locus of causation and stability to include a third dimension, labeled intentionality, or controllability. Intentionality had been originally identified by Heider (1958) as an important causal attribution that people make, but more recently, Weiner (1979, 1985) has argued that a more appropriate name for it is controllability, although he acknowledges that the two concepts may not be identical.

Support for the existence of this third dimension has been provided by a number of studies (e.g., Anderson, 1983; Meyer, 1980; Weiner, 1986). Controllability has been variously labeled as the degree to which a cause is a factor that the person has control over (Weiner, 1979, 1986); the degree to which a cause reflects an intention (Weiner, 1974); or the degree to which the cause implies that the per

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person can change the factors that caused the outcome (Anderson, 1983).

Anderson (1983) investigated causal structures for each of four types of situations: interpersonal failure, noninterpersonal failure, interpersonal success, and noninterpersonal success. One group of subjects (n = 24) generated causes, another group (n = 22) clustered these causes into a variety of categories, and a third group (n = 21) rated these causes on the dimensions of changeability, locus, stability, intentionality, globality, and controllability. Anderson found that different types of causes were generated for different situations and these causes differed in dimensional location. He also found that changeability, controllability, and intentionality were highly intercorrelated (rs ranged from .81 to .93). The results suggest that causes which are spontaneously generated by subjects for diverse classes of events vary along the dimensions of locus of causality, stability, and controllability. Results also support the unidimensionality of intentionality, controllability, and changeability factors.

Meyer (1980) had 200 subjects judge how strongly each of nine different causes may have influenced the performance of hypothetical students on an exam. Results using a PARAFAC factor analysis procedure (Harshman, 1976, cited in Meyer, 1980) revealed three factors that corresponded to the stability, locus, and control dimensions proposed by Weiner.

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Again, based on the findings by Meyer, it appears that controllability should be included as a third dimension of causal attributions. Weiner (1979, 1986) recognized the existence of the controllability dimension and gave it the following definition:

Controllability: The degree to which a cause is a factor that the person has control over.

Unfortunately, until recently (Dugan, 1989; Ford, 1985; Gioia & Sims, 1986), most of the research on supervisory and leader decisions has only looked at the effects of locus of causation and stability. Little work has been done to integrate developments in attribution theory by using the controllability dimension in research on organizational behavior (Ilgen & Klein, 1988). While most of the findings cited earlier have been interpreted as supporting the idea that the internal/external dimension of causation is a primary determinant of supervisory reactions, the alternate explanation of controllability has been ignored in the interpretation of results. For example, Green and Mitchell (1979) only considered locus of causation and stability as causal dimensions, but they state that a leader's perception of responsibility is a crucial judgment which accompanies attributions which might be made. Ford (1985), building on Weiner's revised attributional framework, noted that perceived controllability of a performance downturn could affect a decision makers' responses to that downturn.

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In other domains of research, controllability has been related to the likelihood to compliment, date, or help others; interpersonal affect; and predictions made for future behaviors (Folkes & Marcoux, 1983; Weiner, 1985; Weiner, Perry, & Magnusson, 1988). Folkes and Marcoux (1983) manipulated the controllability and stability attributions of physical attractiveness, and examined the effects of those attributions on perceived attractiveness, likelihood to date, and likelihood to compliment.

The controllability of attractiveness was found to affect the likelihood to compliment, and the stability of attractiveness was found to affect the likelihood to date. It was hypothesized that controllability affected complimenting behaviors because it was related to the amount of credit or blame an individual received (Heider, 1958). In other words, if a person exercised volitional control over a change which occurred, then that person received corresponding amounts of credit or blame based on that control.

Stability was believed to affect the likelihood to date because it predicted and increased expectancies for future outcomes (Valle & Frieze, 1976). The prediction of future outcomes was important for affecting the likelihood to date a person, because dating a person implied a longer term relationship than complementing a person. Instability in behaviors was found to affect likelihood to compliment because complimenting unstable behaviors was more ins

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instrumental for changing future behaviors than complementing stable ones (Weiner, 1979). The findings of Folkes and Marcoux (1983) and Weiner and colleagues (Weiner, 1985, 1986; Weiner, Perry, & Magnusson, 1988) indicate that controllability has effects on behaviors, attitudes, and affect, separate from stability and locus of causation.

Integrating the controllability dimension into the attributional taxonomy by crossing controllability with locus of causation and stability yields eight cells (2 X 2 X 2). These eight cells are depicted in Figure 1, based on modifications of Weiner's (1979) original taxonomy by Gioia and Sims (1985) for the purposes of organizational research.

Support for the existence of the causal attributions defined by the eight cell taxonomy was found previously by Frieze (1976), who had subjects generate and classify causes for a variety of performance outcomes. Causes which were generated by one group of subjects were categorized by another group of raters into clusters of categories which were subsequently identified as ability, effort, stable effort, task, luck, mood, other person, and miscellaneous causes. A comparison of these categories with the 2 X 2 X 2 taxonomy depicted in Figure 1 reveals consistencies between the taxonomy and the categories. For example, both contain two types of effort, typical and specific, though they are not given the same labels. Also, both contain ability, luck, task difficulty, mood, and other person causes of observed outcomes. These categories also closely parallel

		Stable	Unstable
Internal	Controllable	Typical Effort	Specific Effort
	Uncontrollable	Ability	Mood
External	Controllable	Supervision	Coworkers
	Uncontrollable	Task Difficulty	Luck

Adapted from Gioia and Sims (1986)

Figure 1. Eight-Cell Taxonomy of Causal Attributions

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the causes spontaneously generated by the subjects in the research done by Anderson (1983). Thus, empirical work on spontaneously generated and classified causal attributions supports the integration of the controllability dimension into the attributional taxonomy.

However, when looking at how attributions might affect the evaluation of another's behavior, a conceptual difficulty occurs when including the controllability dimension in the attributional framework. When a cause is external to a person, it is, by definition, likely to be uncontrollable by that person. While that same cause may be controllable by people other than the actor, as implied in the above matrix, controllability of a cause by others often will have little or no bearing on how the actor is treated or evaluated. This is because controllability connotes the concept of moral responsibility. In many situations, and especially in leader/subordinate relationships, people will think it unreasonable to think of holding a person responsible for the outcomes of actions of others. Because of this problem, controllability is reconceptualized as a subdimension of locus of causation when one is evaluating a target actor. This taxonomy provides for three dimensions of responsibility: internal-controllable, internal-uncontrollable, external-uncontrollable.

Crossing stability with internal-controllable, internal-uncontrollable, and external-uncontrollable yields the six cells presented in Figure 2. Using this framework,

	Stable	Unstable
Internal Controllable	Typical Effort	Specific Effort
Internal Uncontrollable	Ability	Mood
External Uncontrollable	Task Difficulty	Luck/ Influence of Others

Figure 2. Six-Cell Taxonomy of Causal Attributions

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one can begin to integrate the controllability dimension into research on leader or managerial responses to subordinate performance.

Since locus of causality and stability have been found to be related to supervisory responses, and since controllability seems to be an important dimension of causal attributions, it follows that controllability will also have a strong effect on personnel decisions made by leaders or supervisors. Mitchell and O'Reilly (1990) note:

> "One crucial judgment which accompanies attributions is that of responsibility, referring principally to an evaluation of moral accountability. Judgement of responsibility is seen as moderating the leader's response to an attribution. The more an outcome is seen as caused by some aspect of the subordinate, the more likely the leader is to take action toward the subordinate" (p. 169).

In summary, the literature review on attribution theory has highlighted several important points. First, people seem to make spontaneous inferences of causes of performance outcomes. Second, these inferred causes vary on dimensions of locus of causality, stability, and controllability. Third, these dimensions of causation affect leader behaviors such that the more internal the cause of a performance outcome, the more the leader's response is directed at the subordinate; the more controllable the cause, the more extr

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extreme the response to the behavior; the more stable the cause, the more it affects expectancies for future outcomes.

Since attributions seem to play an important part in leader or supervisory behaviors and decisions, it is important to identify processes by which attributions are formed. As noted in the introduction, stereotypes can affect the way in which information is processed, encoded, retrieved, or interpreted. Consequently, one would expect that stereotypes will affect attributional formation.

Gender Effects on Attributions and Personnel Decisions

Gender stereotypes and attributions. Researchers have integrated stereotype and attribution theory by arguing that stereotypes, when activated, can bias subsequent information processing of causal attributions (Ilgen & Youtz, 1986; Feldman, 1990; Lord & Maher, 1991; Pazy, 1986), since knowledge structures serve as reference systems according to which new information is categorized (Wyer & Srull, 1986), and stereotypes are knowledge structures (Bierhoff, 1989).

Stereotypes serve to provide expectancies about traits and behavior (Bierhoff, 1989; Deaux, 1976) and stereotype consistent behavior is considered to be more stable, internal, and innate than stereotype inconsistent behavior (Bodenhausen & Wyer, 1985; Deaux & Emswiller, 1974; Deaux, 1976; Gordon, 1990; Hewstone, 1990). Predictions about the effects of stereotypes on controllability are nebulous because no research was identified which investigated the effects of stereotypes on the controllability dimension of

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attributions. However, as previously noted, good performance which is attributed to internal causes is rewarded more than good performance which is believed to be due to external causes; thus, gender stereotypes may affect personnel decisions through attributional processes.

In a widely cited study of the effects of gender on attributional processes, Deaux and Emswiller (1974) had 130 undergraduate students listen to confederates attempt to recognize common objects (lug wrenches, screwdrivers, irons, curlers, etc.) as part of their task. The performance of the confederates was manipulated (good or bad) and the subjects then made ratings of attributions to luck or skill for the performance of the confederate. When the task was masculine and performance high, male performance was attributed to ability, while an equivalent performance by a female on the same task was attributed to luck. These attributional biases occurred in spite of the fact that the subjects viewed the males and females as having performed equally well, as measured by a manipulation check.

The findings were explained by Deaux (1976), who argued that a woman's work success is ordinarily attributed to factors other than her capability because of sex-role expectations. Success for women is more likely to be attributed to luck (Deaux & Emswiller, 1974), ease of task (Feldman-Summers & Kiesler, 1974), or to hard work (Feldman-Summers & Kiesler, 1974) than to skill or ability.

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Another example of how gender stereotypes affected expectations and attributions was provided when Feldman-Summers and Kiesler (1974) were attempting to develop research materials for a gender stereotype study. They showed 84 male and female undergraduates descriptions of several people in different professional occupations. Subjects were asked to indicate how successful he or she expected a presented professional to be; half of the professionals were presented as male, half as female. There was not a single instance in which a woman was expected to be a more successful professional than a man. In the same study they found that male subjects provided more attributions to ability for a male physician, and effort and easy task attributions for female physicians. Female subjects did not attribute more ability to the male physician than the female physician, but they did see greater effort as a cause of the female doctor's success. Again, findings support the concept that gender stereotypes affect expectancies and attributions for performance; success for men was perceived to be due to ability while success for women was perceived to be due to effort, though this effect was diminished for female subjects.

In a study which attempted to directly measure gender stereotypes and effects of those stereotypes on attributions, Garland and Price (1977) had 123 male undergraduates read a description of a successful or unsuccessful female manager. They later made causal attr

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attributions for her success or failure; gender stereotypes were measured by the Women as Managers Scale (WAMS), developed by Terborg, Peters, Ilgen, and Smith (1977). Generalized attitudes toward women managers as measured by the WAMS were unaffected by success/failure descriptions of women managers, but WAMS scores were strongly related to attributions of female success in management. WAMS positively correlated with internal (ability and effort) attributions and negatively correlated with external (luck and easy job) attributions for subjects reading the female success descriptions. WAMS scores did not correlate with attributions for subjects who read female failure descriptions.

These results suggest that gender stereotypes affect attributions for successful performance of women managers but not for unsuccessful performance. When successful women managers were presented, positive attitudes toward women managers led to internal attributions of performance, and reduced external attributions of performance. Findings also suggest that gender stereotypes are not easily affected by presentations of successful or unsuccessful women managers.

Stevens and DeNisi (1980) replicated the Garland and Price findings when they investigated the effects of gender stereotypes on attributions made with regard to performance and subsequent personnel decisions. In study one, they used the responses of 102 undergraduate subjects to test the hypothesis that WAMS scores would not be affected by the

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presentation of a good or poor female employee. They found that scores on the WAMS scale were not affected by the success/failure manipulation. This supported the Garland and Price (1977) findings; gender stereotypes were not easily affected by presentation of a female employee's performance.

Study two was designed to test the hypothesis that WAMS scores would be related to the causal attributions of performance for a good or poor female employee. For this study, 124 subjects (80 males and 44 females) were used to test their hypotheses. For male subjects, they found WAMS scores were positively related to attributions of ability (r = .49), and effort (r = .33) for high performing female target employees and negatively related to ability (r = -.18) and effort (r = -.41) attributions for low performing female target employees. For female subjects, WAMS scores were not significantly related to any attributions in either condition, though all of the correlations were in directions consistent with the male subjects' findings. The authors suggest the lack of significant effects for the female WAMS scores on attributions may have been due to restriction in range on WAMS scores.

Findings from the Stevens and DeNisi (1980) study support the Garland and Price (1977) findings. They suggest the content of stereotypes were not easily affected by presentations of poor or good performing female managers and that stereotypes of women managers affected attributions of

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female performance. Positive attitudes toward women managers were positively related to internal attributions of successful performance and negatively related to internal attributions of unsuccessful performance. This relationship was found to be true for male subjects but not for female subjects; possibly because women were less likely to have negative stereotypes regarding female managers and this might produce restriction in range.

In conclusion, it appears that gender and gender stereotypes can have a significant impact on perceptions of causes of employee performance. People who have negative stereotypes of women are more likely to attribute successful performance of women to external causes than to internal causes, and more likely to attribute unsuccessful performance to internal causes than to external ones. The attributional biases which have been detected as a result of gender stereotypes may result in large effects on personnel decision making, because attributions affect leader responses to performance outcomes. Several researchers have hypothesized and found attributional biases to be especially strong for sex-typed tasks or jobs (Deaux, 1976; Deaux & Emswiller, 1974; Heilman, 1983). In accord with the logic stated above, if gender stereotypes are expected to affect managerial personnel decisions through attributional processes, it must be demonstrated that managers actually have gender stereotypes which may be biased against perceptions of females as managers.

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Gender stereotypes and female managers. Schein (1973, 1975), Brenner, Tomkiewicz, and Schein (1989), and Heilman, Block, Martell, and Simon (1989) found that men in general were perceived to be more similar to middle managers than were women in general. Schein (1973) had 300 male middle line managers rate women in general, men in general, and successful middle managers on a 92-item descriptive index. Using intraclass correlation coefficients, she found that men were perceived to be more similar to middle mangers (r' = .62) than were women (r' = .06). In a follow-up study, Schein (1975) had 300 male and 167 female managers complete the same ratings, and she found men and successful managers were perceived to have leadership, competitiveness, self-confidence, objectivity, and aggressiveness characteristics, but women were not. Again, managers perceived men in general to be more similar to managers in general than women in general; this was true for both male and female managers, but less so for female managers.

Two recent studies by Heilman et al. (1989) and Brenner et al. (1989) suggest attitudes toward women, men, and managers have changed very little since Schein (1973, 1975) conducted her work. Heilman et al. (1989) had 268 managers rate one of seven target groups using the 92-item inventory developed by Schein. These managers rated men (in general, managers, or successful managers), women (in general, managers, or successful managers), and successful managers. The results of the study closely replicated Schein's res

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results. Men in general were described as more similar to successful managers (*r'* = .54) than were women in general (*r'* = -.24). The correspondence between descriptions of women and successful managers increased dramatically when women were depicted as managers, but they continued to be seen as more different from successful managers than were men.

Furthermore, even when women were depicted as managers, perceived differences in many characteristics central to managerial performance still existed, and these differences dissipated only when women were clearly labeled as successful managers. These findings suggest people who are actually employed as managers still perceive women to be less similar to successful managers than men and these perceptions appear to be resistant to change.

Findings by Brenner et al. (1989) indicate male managers still have stereotypes about the fit between females in general and managers in general, but female managers seem to have changed in their perceptions about the similarity between women in general and managers in general. Brenner et al. (1989) conducted a study which involved 420 men and 173 women who were managers. They found gender of the subject affected perceptions of how similar women in general were to successful middle-managers. For male managers, the intraclass correlation coefficient for descriptions of men in general and managers was higher (*r'* = .72) than it was for women in general and managers

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($\underline{r'}$ = -.01). For female managers, there was little difference in how similar men and women in general were to successful managers ($\underline{r'}$ = .59 and .52, respectively).

Thus, it appears that attitudes regarding the fit between women and management positions have changed for female managers, but attitudes have changed little for male managers. Female managers seem to see little difference between how similar men and women in general are to successful managers, while male managers seem to see a large difference between how similar men and women in general are to successful managers.

The literature reviewed thus far has suggested several ideas. First, people make causal attributions about performance outcomes and these attributions affect leader and managerial decisions and behavior. Second, stereotypes affect attributions made about successful female performance, particularly for sex-typed occupations. Third, managers who are actually employed in businesses seem to have gender stereotypes which lead to differences in expected fit between women and men in general and successful managers. Since stereotypes affect expectancies, and expectancies affect attitudes and behavior, one would surmise that gender might affect personnel decision making, especially for strongly sex-typed occupations. Research findings support this logic.

<u>Gender stereotypes and personnel decisions</u>. Cohen and Bunker (1975) conducted a study using 150 job recruiters who

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made a series of recommendations and responses to job descriptions, application blanks, and interview transcripts. They found a high degree of sex discrimination among job recruiters at two university placement centers. Significantly more females than males were recommended for employment in an editorial assistant position (female-typed), while significantly more males than females were recommended for a personnel technician job (male-typed). These decisions appeared to be made on the basis of congruence of sex of the applicant to the sex-type of the job. Similarly, Terborg and Ilgen (1975) found that male students who were asked to allocate starting and second year salaries for engineering jobs to males or females with identical qualifications and performance records recommended higher levels of financial compensation for males than for females.

Heilman and Stopek (1985a, 1985b) hypothesized that attractiveness might exaggerate gender-related perceptions. An attractive male was expected to be perceived as more prototypically masculine, while an attractive female was expected to be perceived to be more prototypically feminine. If attractiveness affects perceptions of masculinity or femininity, then it should also affect gender-related bias in attributions and personnel decisions.

Their findings partially support their hypotheses. Attractiveness affected the perceived femininity of females, but attractiveness did not affect the perceived masculinity

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of males. For males, there were no differences in work-related evaluations nor in perceived appropriateness of personnel decisions for either attractive or unattractive males in either occupation. For females, promotions, pay raises, and merit pay in managerial jobs were deemed more appropriate for unattractive females than for attractive females; unattractive females in managerial jobs also received higher work-related evaluations. In contrast, promotions and pay raises for clerical jobs were perceived more appropriate for attractive females than for unattractive females; attractive females in clerical jobs also received higher work-related evaluations. These findings are quite consistent with studies cited earlier: personnel decisions can be affected by gender stereotypes.

If gender stereotypes affect personnel decisions and evaluations, they may do so through effects on causal attributions. In a study which examined the effects of male and female attractiveness on causal attributions and perceived masculinity and femininity, Heilman and Stopek (1985a) found evidence that perceived masculinity or femininity affected attributions made about the successful performance of male and female managers.

They presented 113 working men and women (52% men and 48% women) with information on a hypothetical managerial employee. They found that attractiveness of a manager was related to the causal attributions of successful performance for that manager. Success of unattractive female managers was

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was attributed more to ability than for attractive female managers, and luck was attributed more as a cause for attractive female success than unattractive female success. Attributions were the opposite for males; ability was attributed more as a cause for attractive male success than for unattractive males, and luck was attributed more to unattractive males than to attractive males. There was also an effect of attractiveness on ratings of masculinity and femininity such that attractive males were perceived to be more masculine than other employees and attractive females were perceived to be more feminine. Heilman and Stopek (1985a) conclude that being attractive can have negative consequences for women managers, even when they clearly have been successful and have reached the executive level. For attractive females, success was attributed less to ability, and they were consistently judged to be less capable than were unattractive managers.

The results of the work by Heilman and Stopek (1985a, 1985b) were consistent with other findings cited earlier: gender stereotypes (i.e. perceived masculinity or femininity) affected personnel decisions and attributions for successful performance of male and female managers. Successful managerial performance of individuals perceived to be more masculine was attributed to internal and stable causes (e.g., ability) and it was rewarded more highly than successful managerial performance of people perceived to be less masculine. Successful performance by less masculine

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managers was attributed to external and unstable causes (e.g., luck) and it was not rewarded as highly.

Pence, Pendleton, Dobbins, and Sgro (1982) did a study which examined the effects of sex of the evaluator, sex of the employee, and different causal explanations for employee failure upon ratings of the appropriateness of eleven supervisory actions. One hundred male and 100 female undergraduate subjects were presented with employee files which consisted of four males or four females whose performance in a management-trainee position was described as unsatisfactory. Causal attributions of ability, effort, task difficulty, or luck were each assigned to one of the four target employees. Subjects were then asked to indicate why they thought the employee failed and to rate the appropriateness of 11 corrective actions for each of the four employees.

Results indicated that gender and causal attributions influenced subject ratings of the appropriateness of various corrective actions such that coercive actions were considered most appropriate for failure due to lack of effort, and that in general, subjects considered it more appropriate to work with and encourage employees of the same sex. With regard to causal attributions, the authors state "that in addition to the internality of the cause for failure, subjects may concomitantly consider stability of the cause for failure". The authors go on to say, "coercive actions are considered most appropriate when failure is due

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to lack of effort which is internal and unstable". Their conclusion is that researchers must examine the stability of a causal factor and the intentionality or choice of the actions of the employee as dimensions underlying the causal schema used by subjects. It seems appropriate to interpret the conclusions drawn by these authors as support for the effects of the dimension of controllability on personnel decisions, though they only investigated locus of causality and stability of attributions. Thus, the earlier hypothesized distinction between internal-controllable, internal-uncontrollable, and external-uncontrollable dimensions has received partial support in the interpretation of findings by the authors of this study.

The findings regarding the effects of gender on personnel decisions and causal attributions have been explained by the "lack of fit" model proposed by Heilman (1983). In this model, she hypothesizes that perceived job requirements are "fitted" against the perceived attributes of an individual. This fitting process affects performance expectations such that poor fits lead to expectations of failure and good fits lead to expectations of success. Expectations are believed to affect the evaluation process, which in turn, affects selection decisions, performance appraisals, and reward allocation.

Interestingly, Heilman's (1983) model is consistent in several ways with Green and Mitchell's (1979) two-stage model of leader behavior. In Green and Mitchell's model, lea

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leaders make diagnoses or attributions, and these in turn affect leader behaviors. Heilman's model simply adds the idea that the person/job fit (i.e. gender stereotypes) can affect performance expectations, which will affect the evaluation or attributional process.

It is clear that stereotype-based processing is often affected by the perceived salient characteristics of others and they tend to result in some identification of group membership. For example, gender is an easily identified characteristic, and people often identify themselves in terms of whether they are a member of the male or female category, especially for gender salient environments. Some researchers postulate that we not only have stereotypes about other groups, but that we have stereotypes about the group to which we perceive ourselves as belonging, and that this may affect attributional processes (Taylor & Jaggi, 1979; Taylor & Moghaddam, 1987; Hewstone, 1990; Hewstone & Ward, 1985).

Effects of gender group membership. The theory that group membership affects attributional processes is built upon Heider's (1958) 'fundamental attribution error', which is the tendency to underestimate situational factors and overestimate personal factors as causes of an actor's behavior. Zuckerman (1979) found that perceivers often give relatively more internal attributions for their own success and relatively more external attributions for their own failure. Actor/observer differences and self-serving biases hav

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have also been found in leader-subordinate relationships (Brown, 1984; Gioia & Sims, 1985; Green & Mitchell, 1979).

Actors often attribute their failure to external causes and their success to internal causes, while observers exhibit the opposite pattern. Actor biases can be self-serving and can also be based on the fact that actors have much more information than observers about the particular context in which a behavior takes place. These actor/observer and self-serving attributional biases have been extended to the group context, though most of the work has been done on ingroup/outgroup differences in ethnicity, not gender.

Pettigrew (1979) extended self-serving attributional biases to the group context. He referred to an ultimate attribution error, which is a "systematic patterning of intergroup misattributions shaped in part by prejudice" (p. 464). He crossed controllability with locus of causation to yield four main attributional categories for ultimate attribution error:

1) the exceptional case (low control/internal)
2) luck or special advantage (low control/external)
3) high motivation and effort (high control/internal)
4) manipulable situational context (high control/external)

Pettigrew makes five predictions about the attributions one group member will make about another outgroup member's behavior:

1) Negative acts (antisocial or undesirable) by an outgroup member will be attributed to personal, dispositional causes. Often internal causes will be perceived as innate characteristics of that outgroup member.
2) Positive acts (prosocial or desirable) by an outgroup member will be attributed to an exceptional case, luck, special advantage (seen as unfair by the observer), situational context, or high motivation and effort.
3) Ultimate attributional error is likely to characterize the attributions of most people toward outgroup members, but this bias is likely to be stronger for prejudiced people.
4) Ultimate attributional error is likely to occur when perceivers are conscious of their own and the actor's group memberships.
5) The intensity of the ultimate attributional error will be greatest when the groups involved have histories of intense conflict, ethnic differences covary with national and socioeconomic differences, and when groups have negative stereotypes of each other.

Taylor and Jaggi (1974) did a study in India in which Hindu adults made attributions for desirable and undesirable acts made by another Hindu (ingroup) or another Muslim (outgroup). They found that for socially desirable

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behaviors, internal attributions were greater for ingroup than outgroup actors, and for socially undesirable behaviors, internal attributions were lower for ingroup than outgroup actors.

Hewstone (1990) reviewed 19 studies which examined perceptions of causal attributions for acts by ingroup and outgroup members, and reported that attributions made for the behavior of ingroup and outgroup members are often biased. For example, in a study involving Malay (majority) and Chinese (minority) groups in Malaysia, Malays made more internal attributions for a positive act by a Malay than a negative act. It was also found that Malays attributed a positive act by a Malay actor to more internal factors than the same act by a Chinese actor. There was clear evidence of attributional bias as a result of ethnic group membership, presumably as a result of the stereotypes each group had about the other. Positive acts by ingroup members were attributed more to internal factors than positive acts by outgroup members, while negative acts showed the opposite pattern.

Jackson, Sullivan, and Hodge (1993) also found support for ingroup/outgroup attributional biases. Subjects were presented with college applications which manipulated the ethnic orientation of the applicant and the strength of credentials (high vs. low). Pretesting indicated that strong credentials were considered less stereotype consistent for blacks than whites, whereas weak credentials

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were considered less stereotype consistent for whites than blacks. It was found that attributions and affect played an important role in the evaluation of black outgroup targets (e.g., probability of acceptance to the university), such that strong credentials were "explained away" by external factors.

Ingroup and outgroup effects can also occur in leader-member relations. In a study of ingroup/outgroup leader-member linkages and effects on attributional processes, Heneman, Greenberger, and Anonyuo (1989) hypothesized that attributions may be influenced by the nature of the leader-member relationship (Green & Mitchell, 1979; Mitchell, Green, & Wood, 1981). They had 188 supervisors assess the exchange relationship of a subordinate with whom they had the worst working relationship and with whom they had the best working relationship. The supervisors generated a critical incident for effective and poor performance for both the ingroup and outgroup members. They were then asked to indicate the extent to which ability, effort, luck, and task difficulty caused each of the critical incidents.

Significant differences were found between ingroups and outgroups for attributions to ability. Supervisors were found to attribute effective performance to ability more for ingroup members than for outgroup members. Supervisors also were more likely to attribute low effort and ability as causes of ineffective performance of outgroup members than for ingroup members.

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If gender affects leader-member relations such that an ingroup bias exists in the leader-member relationship, then gender may result in ingroup/outgroup attributional biases. In the Pence et al. (1982) study cited earlier, a significant sex of subject by sex of employee interaction was found. In general, subjects considered it more appropriate to work with and encourage employees of the same sex; thus, gender may affect ingroup/outgroup biases through leader/member linkages.

Medway and Lowe (1976) found that the success of liked others resulted in stronger internal attributions than attributions for disliked others. Liked others were seen as more responsible for success and less for failure. Similarly, Fontaine (1972, cited in Frieze, 1976, p. 100) found that outcomes shared with highly similar other people often led to ability attributions.

The studies cited above suggest that gender is a salient characteristic in masculine-typed jobs and people may consider themselves according to gender group category (Hewstone, 1990). If this is true, then it stands to reason that the interaction of the gender of the decision maker and the gender of the employee may affect attributional biases through group membership. Since outgroup members tend to receive external or effort attributions for success while ingroup members tend to receive internal or ability attributions and the reverse is true for failure conditions, ingroup/outgroup biases may affect reward and promotion

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decisions. Nicholls (1976) found although people admire and respect effort, they tend to prefer high ability as a trait for themselves.

In sum, evidence exists to suggest that attributional bias might occur as a function of gender ingroup and outgroup biases of the decision maker. Extrapolating from the research on ethnic groups and attributional biases, one might expect attributional processes to vary according to whether managers and employees are of the same or different gender. High performance by employees of same gender would be more likely to be attributed to internal and stable causes than high performance by employees of different gender. Conversely, low performance by employees of the same gender would be more likely to be attributed to external and unstable causes than low performance by employees of different gender. These attributions would then affect personnel decisions made by managers or supervisors.

While gender stereotypes have been fairly consistently linked with attributional biases and personnel decisions and group membership stereotypes have been linked with attributions, some research has found conflicting findings. Often, conflicting findings have been due to a lack of consideration for other important variables such as differences in the nature of the job or task or in the amount of information which has been provided to the decision maker.

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Effects of information availability. Stereotyping effects may be ameliorated by the presentation of information relevant to the job or to job performance (Deaux & Lewis, 1984; Heilman & Guzzo, 1978; Heilman, et al., 1988; Nieva & Gutek, 1980; Ruble, Cohen, & Ruble, 1984; Tosi & Einbender, 1985), or by the presentation of information which would reduce stereotype-based processing about women in general (Heilman, 1983; Heilman & Martell, 1986). Heilman (1983) stated that stereotypes about women in general are more likely to be used when ambiguity in the fit between the employee and the job exists. She further stated that gender is unlikely to be viewed as the ultimate source of information about an individual when more job-relevant information is available (Renwick & Tosi, 1978), when information is unambiguous and not subject to reinterpretation (Pheterson, Kiesler, & Goldberg, 1971), or when the causal basis of performance is known (Heilman & Guzzo, 1978).

In a meta-analysis of 21 studies, Tosi and Einbender (1985) found amount and type of information available was related to the amount of gender-related discrimination which occurred. According to the authors, there was a lower likelihood of discrimination when information that was not gender-salient was presented. On the other hand, Eagly, Makhijani, and Klonsky (1992) in a recent meta-analysis of 61 studies found no support for the hypothesis that bias against women weakens with increases in the amount of

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individuating information available, though they state that their conclusions should be interpreted carefully because there was little variance in the amount of information available across most studies.

Heilman and Guzzo (1978) conducted a study which is commonly cited as support for the idea that causal information regarding performance attenuates the effects of gender on attributions and personnel decision making. Heilman and Guzzo (1978) had 29 men and women enrolled in a MBA program rate the appropriateness of several personnel actions for successful employees. Different causal attributions (ability, effort, luck, task difficulty) were provided as explanations for the work success of four male or female target employees. No significant effects involving the sex of the stimulus person were found.

Results suggested that the causal attributions of luck, effort, and task difficulty resulted in fewer and less desirable organizational rewards when contrasted with attributions to ability. This was true whether the successful employee being considered was male or female. Many researchers have interpreted these findings as supportive of the idea that sex discrimination will not occur when enough performance relevant or causal information is presented, but this conclusion may be premature.

A closer inspection of the obtained cell means indicates the means for promotion and pay raises may have been affected by gender. With a sample size of 29, it is

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not surprising that the gender effect was not significant, though it appeared to be present, because the power of the test was extremely low. In fact, the Pence et al. (1982) study cited earlier was a conceptual replication of the Heilman and Guzzo study, and they found effects of gender on responses to poor employee performance in spite of the causal information provided. The interpretation is that gender-related bias may be diminished with increasing amounts of performance-related information, but they may still exist; gender bias may occur even when causal information is provided.

A study by Pazy (1986) which looked at the influence of causal information and gender on performance ratings found that a pro-male bias existed, even when identical information regarding performance was provided. Forty-eight middle-level managers (mean age 39 years) from a variety of organizations in Israel reviewed performance appraisal material of fictitious male and female employees whose work success was attributed to identical causes. For each fictitious employee, information on ability, effort, and task difficulty as causes of performance was presented. Although causal information and performance-related information influenced decisions, pro-male bias did not disappear. Males were consistently ranked higher than females, in spite of the fact that they both had identical performance levels and causal information.

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Pazy (1986) hypothesized that people can engage in input assimilation such that new information is likely to be integrated into an existing conceptual structure whenever possible. Pazy states that information input which is inconsistent with the conceptual structure one has must be overwhelming for it not to be disregarded, discounted, or distorted. Since sex-linked perceptions are related to a variety of contextual and perceptual factors, controlling attributional biases simply by presenting causal information may not be enough to overcome treatment and evaluation biases. Her findings support her hypotheses.

Martell (1991) examined the impact of attentional and memory demands on work performance ratings of male and female employees presented in traditionally male jobs. Two-hundred and two college students read a vignette depicting the work behavior of a male or female police officer and then rated the individual's work performance. Men were rated higher than women when attentional demands were imposed on subjects while reading the vignette and when time pressures were made salient. It was only when subjects were able to carefully allocate all of their attentional resources to the rating task that sex bias in work performance ratings subsided. Another finding was that subjects seemed to rely more heavily on positive stereotypes of men under heightened attentional demand conditions, since attentional demands inflated ratings of males, but no significant differences were found in female ratings between low

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low and high attentional demand conditions. The research findings cited above suggest gender-related bias can still occur in spite of unambiguous and specific performance-related information.

It appears that there is some disagreement as to how much impact information can have on stereotype-based processing. Under some conditions, sex stereotypes can operate in spite of large amounts of information regarding a target employee because encoding of information is affected by expectancies (Bierhoff, 1989; Bodenhausen & Wyer, 1985; Fiske & Neuberg, 1990; Hamilton, Sherman, & Ruvolo, 1990; Lord & Maher, 1991; Tversky & Kahneman, 1973, 1974), and stereotypes are a form of expectancies. The effect of stereotypes on information processing is further strengthened by the fact that people often engage in hypothesis confirmation in cognitive processing, especially when decisions are complex or when processing loads are placed on the decision maker (Bierhoff, 1989; Bodenhausen & Lichtenstein, 1987).

The hypothesis confirmation effect occurs because stereotypes can serve as simplifying heuristics which help us to quickly and economically organize and retrieve information (Bodenhausen & Wyer, 1985; Deaux, 1984; Martell, 1991; Taylor, 1981). Since stereotypes are a source of expectancies, and the sex-type of the job or task can elicit stereotype-based processing, it stands to reason that gender bias can occur in spite of clear performance information if

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the job is strongly sex-linked, and when information processing demands are placed upon the decision maker.

Some researchers have stated that it is reasonable to assume that such information processing demands may often be placed upon individuals functioning in organizations (Lord & Maher, 1991; Feldman, 1981). For example, Feldman (1981) notes that raters often have many competing demands on their time. Thus, it appears that stereotypes can affect attributional processes and personnel decisions even when large amounts of job or performance relevant information is provided. This is likely to occur when the decision maker is under cognitive load, the job or task is strongly sex-typed, and when the decision maker has strong gender relevant stereotypes.

Limitations of past research. A problem with previous research on stereotype based biases is few studies have examined the impact of gender stereotypes on attributional processes with only high performing or above average employees. It is likely personnel decision makers in organizations only consider above average performers for promotions and pay reward; overall performance level might have a large effect on personnel decisions, thus "washing" out the effect of gender.

For example, in a meta-analysis on the effects of applicant gender and qualifications on hiring recommendations, Olian, Schwab, and Haberfeld (1988) found that gender accounted for 4% of the variance in hiring dec

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decisions as compared with 35% of the variance accounted for by qualifications of the applicant. Investigating whether gender bias exists when only above average performers are considered for promotions or reward may result in different findings regarding stereotype-based biases than when employees at all performance levels are considered; competing hypotheses can be generated on the basis of previous research. Models of the effects of gender stereotypes on attributions and personnel decisions need to deal with processes which occur in the above average range of performance.

A second problem with previous work on gender stereotype based biases is researchers have often overlooked the controllability dimension of the attributional framework. Often, internal locus of causation has been interpreted in a fashion consistent with the controllability dimension, though Weiner and others provide strong evidence that locus of causation is not the same as controllability (e.g., Weiner, 1986). Green and Mitchell (1979) and Mitchell and O'Reilly (1990) have noted the importance of leader perceptions of subordinate responsibility (i.e. controllability) for performance, but most organizational research has failed to integrate this important dimension into the attributional framework.

A third limitation of past research is gender group membership effects on attributions of performance have rarely been directly investigated. A growing body of

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research (e.g., Hewstone, 1990; Jackson et al., 1993) suggests ingroup/outgroup stereotypes and perceptions may result in attributional biases. While some studies have looked at gender interactions, none of them have explicitly investigated gender group based attributional biases. If ingroup/outgroup perceptions affect attributions, and attributions affect personnel decisions, then it would follow that personnel decisions would be affected by ingroup/outgroup distinctions. Results found by Kraiger and Ford (1985) and Landy and Farr (1980) are consistent with this view. In quantitative and qualitative reviews of performance appraisal research, they found that blacks tended to rate black ratees higher than whites, and whites tended to rate white ratees higher than blacks. Future research should investigate whether these findings generalize to gender group membership perceptions.

Another problem is attributions have either been manipulated by providing causal information and not measured, or they have been measured but no contextual performance information has been provided. It is problematic to provide causal information and infer a particular attribution was made by the decision maker without further investigation because one cannot be sure individuals have the same perceptions of controllability, stability, and locus of a given cause. The formation of attributions is the outcome of an individual perceptual process, by definition. For example, for some decision

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makers, presentation of low ability as a cause of low performance may result in low perceived effort as a cause leading to low ability. Thus, decision makers may vary in the perceived controllability of the cause of the performance, depending on their interpretation of the observed cause. Tests of most attributional models have to occur within person, not between people.

On the other hand, doing research by measuring attributions while providing little or no performance relevant information may be a problem because people in organizations are likely to have access to larger quantities and more varied types of information about an employee than a one or two line description of whether someone is doing well or poorly.

A fifth problem with previous research on the impact of gender stereotypes is many studies have failed to measure whether or not a stereotype actually existed in the decision maker's frame of reference. Findings by Garland and Price (1977) and Stevens and DeNisi (1980) using the WAMS suggest the degree to which people have negative stereotypes regarding the fit between women and management positions will affect attributions and personnel decisions.

Research on gender stereotypes, attributions, and personnel decision making has also had methodological problems. For example, different personnel decisions and ratings have been summed and treated as a single dependent variable without any corresponding theoretical or empirical sup

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support for such analyses (e.g. Kinicki & Griffeth 1985). Also, attributions are often measured using single items (e.g. Deaux & Emswiller, 1974) or by using ipsative scales (e.g., Russell, 1982). The items themselves are often ambiguous and allow subjects to interpret the questions in a variety of ways.

A final problem with earlier research is that it is in the past. While gender-related bias has been found to occur in a wide variety of contexts, some researchers suggest that gender-related bias may be on the decline (e.g., Kinicki & Griffeth, 1985; Nieva & Gutek, 1980), though much work suggests this is not true (e.g., Heilman, et al. 1989; Pazy, 1986). Kinicki and Griffeth (1985) found no significant sex-related interaction effects on attributions and performance ratings, and they interpreted their findings as suggesting that sex-role stereotypes no longer affect perceptions of female performance. The authors state that their results are consistent with more recent studies which have found a lack of sex-related bias on causal attributions of performance, evaluations of performance effectiveness, and selection decisions. They suggest this recent pattern of results "might be interpreted optimistically as a trend toward increasing equity in evaluation" (Nieva & Gutek, 1980, p. 274, cited in Kinicki & Griffeth). Thus, researchers are drawing conflicting conclusions regarding the prevalence and effects of gender stereotypes for personnel decisions made in recent times.

Summary of the literature review. Women are underrepresented in many occupations which are stereotypically male and many of these occupations are of high status and pay (e.g., higher level managers). While women may be underrepresented partially as a function of choice, research has indicated that a major reason for the underrepresentation of females may be due to gender stereotyping processes and the resulting influences on causal attributions which might be made for observed performances (e.g., Cochran, 1993; Stevens & DeNisi, 1980).

Research in attribution theory suggests that leaders infer causes of observed performance outcomes and these causes vary on the dimensions of locus of causality, stability, and controllability. Research also suggests that attributions are linked to variety of leader cognitions and behaviors (e.g., Mitchell & O'Reilly, 1990). The more internal and controllable the attribution, the more extreme the leader's response and the more the response is directed toward the subordinate; the more stable the attribution, the more it affects the leader's expectancies for the future performance. Thus, causal attributions are expected to affect promotion and pay decisions.

Gender stereotypes can influence the attributions which are made regarding performance, and these attributions can affect personnel decisions made by leaders, managers, or supervisors (e.g., Garland & Price, 1977; Pence et al., 1982). For male-typed jobs, high performance by men tends to

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to elicit internal and stable attributions while high performance by women tends to elicit external and unstable attributions (e.g., Deaux, 1976; Stevens & DeNisi, 1980).

Research has indicated that ingroup/outgroup gender stereotyping processes may also contribute to attributional and personnel decision making bias (e.g., Hewstone, 1990). Successful performance by same-sex members is more likely to be attributed to internal and stable causes than successful performance by other-sex members. Studies have shown that findings regarding stereotype bias may be generalizable across sample types and across lab and field settings (Eagly et al., 1992; Murphy, Herr, Lockhart, & Maguire, 1986; Olian et al., 1988).

Some researchers suggest that performance-related information or reductions in ambiguity will ameliorate gender-related bias (e.g., Nieva & Gutek, 1980), but recent research has found that gender stereotypes can still affect personnel decision making under unambiguous performance information conditions (e.g., Martell, 1991; Pazy, 1986). This may occur when the job or task is highly sex-typed, gender is made salient, the decision maker has strong gender-related stereotypes, or when the decision maker is under cognitive load. Research suggests that many of these conditions are replicated in actual organizational settings. For example, Heilman et al. (1989) found that many managers in organizations had the perception that men in general were more like successful managers than women in general. This fi

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finding suggests that managerial positions are sex-typed and that many managers have stereotypes about women and their fit with managerial positions. Also, since women are still generally underrepresented in the managerial work force (especially at higher levels), gender is likely to be a salient characteristic of managerial employees and ingroup/outgroup bias can have important effects on perceptions of managerial performance.

Some important limitations in previous research were also identified. First, no studies were identified that expressly integrated the controllability dimension of attribution theory into studies of leader perceptions, gender stereotyping, and personnel decision making. Second, few studies examined gender bias and attributional processes in the context of only high performing or above average employees. Third, gender group membership effects on attributions of performance have rarely been directly addressed. Fourth, the effect of attributions on different leader responses has received inadequate treatment (e.g., pay versus promotion decisions). Fifth, most of the research cited has either manipulated attributions with performance-related information and failed to measure them, or it has measured attributions without providing performance-related information beyond overall performance level. Sixth, many studies on attribution have failed to measure the degree to which leaders or decision makers actually have or use gender-related stereotypes; they assume

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that such stereotypes exist in the minds of the decision makers. Also, most of the studies used single-item, ipsative, or ambiguous scales to measure attributions.

Finally, research conducted in the present may produce findings different from research conducted in the past. It appears that social values may be changing and some researchers suggest that gender stereotypes may be on the wane (Kinicki & Griffeth, 1985; Nieva & Gutek, 1980). On the other hand, the meta-analysis by Eagly et al. (1992) found the tendency for male leaders to receive more favorable evaluations than female leaders is larger in more recently published studies. This finding contrasts with the assumption that equality of opportunity for women has increased and prejudice and stereotyping have declined.

Given the conflicting conclusions, problems with previous methodologies, and lack of integration with current attribution theory, it seems that an integrative conceptual model would be helpful for future research endeavors.

Integration and Conceptual Model

The model presented in Figure 3 was developed to integrate various research efforts and address some of the problems noted in previous studies. First, it deals with gender stereotypes and attributional processes within a performance level by explaining how performance trends or histories might affect leader perceptions and decisions, even when performance level is constant. This will be explained below. Second, it integrates the controllability

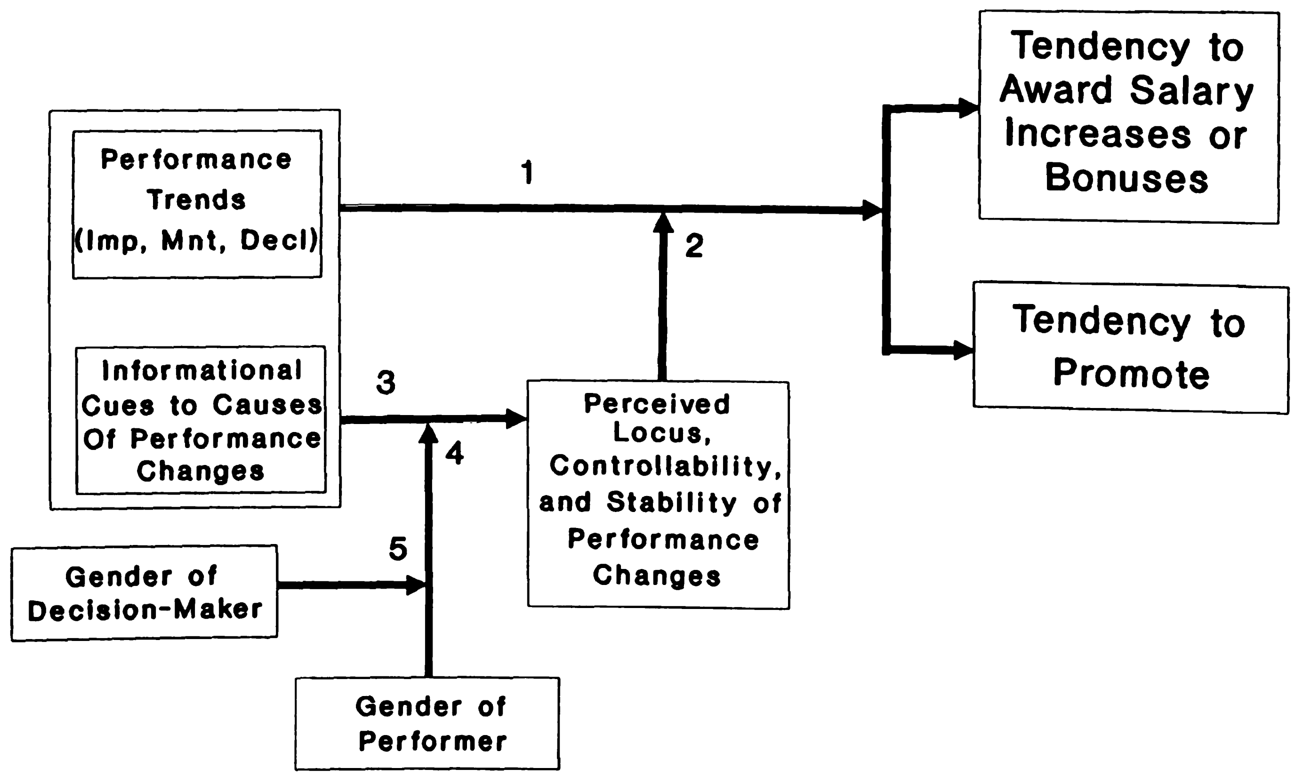

Figure 3. Integrative Conceptual Model of Gender Stereotyping Effects on Attributions and Personnel Decision Making

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dimension of attribution theory into its framework, and it models the effects of locus, controllability, and stability of perceived causes of performance on personnel decisions. Third, it relates the effect of gender and gender group membership to perceptions of locus of causality, controllability, stability, and personnel decisions. Specifically, personnel decisions refer to promotion and pay decisions.

<u>Promotion decisions</u>: The willingness to promote an employee to a higher managerial position (may imply a commensurate pay increase).

<u>Pay decisions</u>: The willingness to allocate merit pay, bonus, or a general salary increase to an employee.

<u>Performance trends</u>. The following two limitations of previous research were mentioned earlier: 1) leaders in organizations typically consider only above average performers for promotions and pay; and 2) leaders generally have more performance-related information than has typically been supplied in stereotype research studies. The conceptual model deals with these two problems by modeling how performance trends affect personnel decision making. A decision maker may only consider above average performers for promotions or pay raises, but he or she can still be affected by performance history or trends. A decision maker in an organization receives more performance-related information than just the overall performance level of an

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employee; information about past performance or causes of observed performance is likely to be available when making a personnel decision.

As mentioned earlier, most of the work done with gender stereotypes and causal attributions has dealt with the good or poor credentials of a job applicant, or the good or poor performance of a particular employee. This is problematic because decision makers may only consider above average employees for pay rewards or promotions. In other words, the decision making context is such that only a specific subset of employees are considered for a particular reward (promotion or pay); not all employees are eligible or likely to be considered for such rewards. In such a context only above average employees are likely to be considered for pay or promotion rewards.

However, even when one only considers performers within a particular performance level, performance patterns within that level can still vary (Hofmann, Jacobs, & Baratta, 1993). An individual employee can randomly deviate around a mean, he/she can improve, or he/she can decline and still exhibit the same mean performance. There is evidence to support the idea that knowledge about prior performance or performance trends will affect later performance evaluation and reactions, even when the current performance level is held constant across conditions (DeNisi & Stevens, 1981; Gully & Rodin, 1990; Jones, Rock, Shaver, Goethals, & Ward, 1968; Scott & Hamner, 1975).

Performance Trend: Given an overall performance level, performance can vary over time and yield the same overall average. Performance trend indicates the way in which the performance can vary over time.

Improving: Performance begins below the overall performance level mean and ends above the overall performance level mean.

Maintaining: Performance shows minor random shifts around the overall performance level mean.

Declining: Performance begins above the overall performance level mean and ends below the overall performance level mean.

Jones et al. (1968) found a primacy effect such that a worker whose initial performance was high and declined over time was rated as more able and more likely to do well in the future than a worker whose performance was initially low and improved over time, even though the overall performance was the same for the two workers. Although overall performance ratings were not collected in their study, the results suggested workers who start high and decline receive more positive ratings than workers who start low and improve.

A study by Scott and Hamner (1975) found results which were opposite to the Jones et al. study. They presented subjects with employees whose performance was either stable or variable around improving, declining, or random patterns

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of performance, but they all showed equal overall performance levels. Findings indicated that subjects thought the stable worker was more motivated than the variable worker, but not as highly motivated as the improving worker. Thus, the results of Scott and Hammer (1975) suggest employees who start low and improve receive more positive ratings than employees who start high and decline.

DeNisi and Stevens (1981) conducted a study to try to resolve the conflicting findings of Jones et al. (1968) and Scott and Hamner (1975). They used performance profiles as stimuli to assess decision processes associated with the use of appraisal information. One hundred and forty-seven students (67 female, 80 male) were given data representing hypothetical subordinates whose performance was stable or variable and at high, medium, or low average levels. They also looked at two other conditions: an ascending or descending trend in performance.

DeNisi and Stevens (1981) reported the overall average level of performance was the most important determinant of evaluations and other personnel decisions (e.g., salary decisions), while stability of the performance was less important. Improving performance received higher ratings on personnel decisions than declining performance, and stronger attributions to effort and lower attributions to ability were made. The authors measured a variety of attributions but were disappointed not to find stronger effects on

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attributions. They suggested future research should provide raters with the contextual cues they need to make meaningful attributions. An important point the authors make is raters seemed to equate improving performance with high performance, and declining performance with low performance.

Gully and Rodin (1990) provided 56 subjects with employee performance profiles which depicted improving, maintaining, and declining performance trends for above average employees. They also presented subjects with information which would allow them to infer the cause of the observed performance trends, and then measured the perceived controllability and stability of those trends. When compared with the other trends, it was found the maintaining performance trend was perceived to be the most stable trend, while the improving and maintaining performance trends were rated as more controllable than the declining trend. These findings occurred in spite of the fact that the average performance level presented was identical across conditions.

Based on the above findings, it is hypothesized that performance trends will affect personnel decision making. Since improving or ascending performance is equated with high performance and declining or descending performance is equated with low performance (DeNisi & Stevens, 1981) the following hypotheses can be made. They are represented in link number one of the conceptual model.

H1: Employees who show improving performance trends will be more likely to be promoted or to receive monetary increases than those showing declining trends.

H2: Employees who show maintaining performance trends will be more likely to be promoted or to receive monetary increases than those showing declining trends.

Because it is not clear how improving and maintaining trends might differ in their effects on personnel decisions, specific hypotheses regarding this issue are not stated.

Effect of attributions and performance trends. For ease of comprehension, promotion and pay decisions will simply be referred to as personnel decisions until specific hypotheses regarding each of them are made. Based on previous research, the main effect of performance trend on personnel decisions will be qualified by the attribution and performance trend interaction. This is represented by link number two in the conceptual model.

For example, although good performance is rewarded more than poor performance in general, researchers have consistently found that good-internally caused performance is rewarded more than good-externally caused performance, while poor-internally caused performance is rewarded less than poor-externally caused performance (e.g., Green & Mitchell, 1979; Knowlton & Mitchell, 1980). This is because an employee is more likely to be considered responsible for the observed performance if the cause is internal (Mitchell & O'Reilly, 1990).

If an employee is responsible for improving or maintaining performance, then he or she will be considered to be more deserving of positive personnel decisions. If an employee is responsible for declining performance, then he or she will be considered to be less deserving of positive personnel decisions. Since the maintaining trend is likely to be considered stable, by definition, and the improving and declining trends are considered to be unstable, by definition, any variance within a trend in their effects on personnel decisions can be attributed to the effects of perceived controllability and locus of causality of the observed performances. This suggests that trend will interact with perceived controllability and locus of causation in their effects of personnel decisions. Hypothesis three is represented by link two in the conceptual model and it is depicted graphically in Figure 4.

H3: The effect of performance trends on personnel decisions will be moderated by the decision maker's perceptions of locus of causality.

H3a: Those employees who show improving or maintaining performance trends which are perceived by the decision maker as due to causes which are internal will receive more positive personnel decisions than employees who show improving or maintaining performance trends which are due to causes

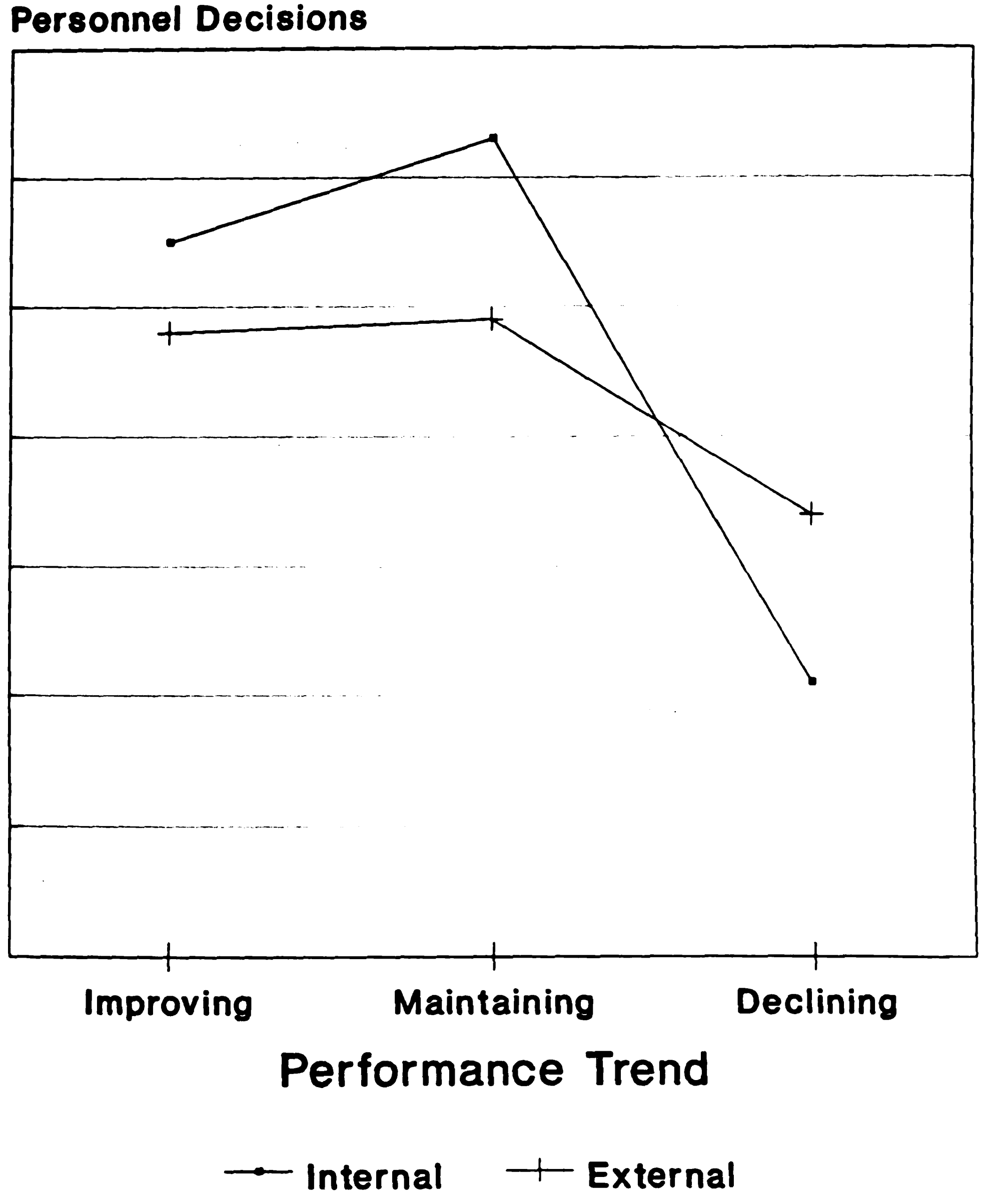

Figure 4. Hypothesized Effects of Locus of Causality and Performance Trends on Personnel Decisions

perceived to be external, when mean performance among employees is held constant.

H3b: Those employees who show declining performance trends which are perceived by the decision maker as due to causes which are internal will be <u>less</u> likely to receive positive personnel decisions than employees who show declining performance trends which are due to causes perceived to be external, when mean performance among employees is held constant.

Hypotheses made with regard to the dimension of controllability will closely parallel the hypotheses made with regard to the locus of causality dimension because the controllability dimension is a subdimension of the locus of causality dimension. Work by Mitchell and O'Reilly (1990) and others has consistently noted the parallel between locus of control and controllability. As mentioned above, if a decision maker perceives an employee to be responsible for improving performance, then he or she is more likely to reward that behavior than if he or she were not perceived to be responsible for the improving performance. Conversely, if a decision maker perceives an employee to be responsible for declining performance, then he or she will be less likely to reward that behavior than if he or she were not perceived to be responsible for the declining performance. These hypotheses are represented by link number two in the conceptual model and they are depicted in Figure 5.

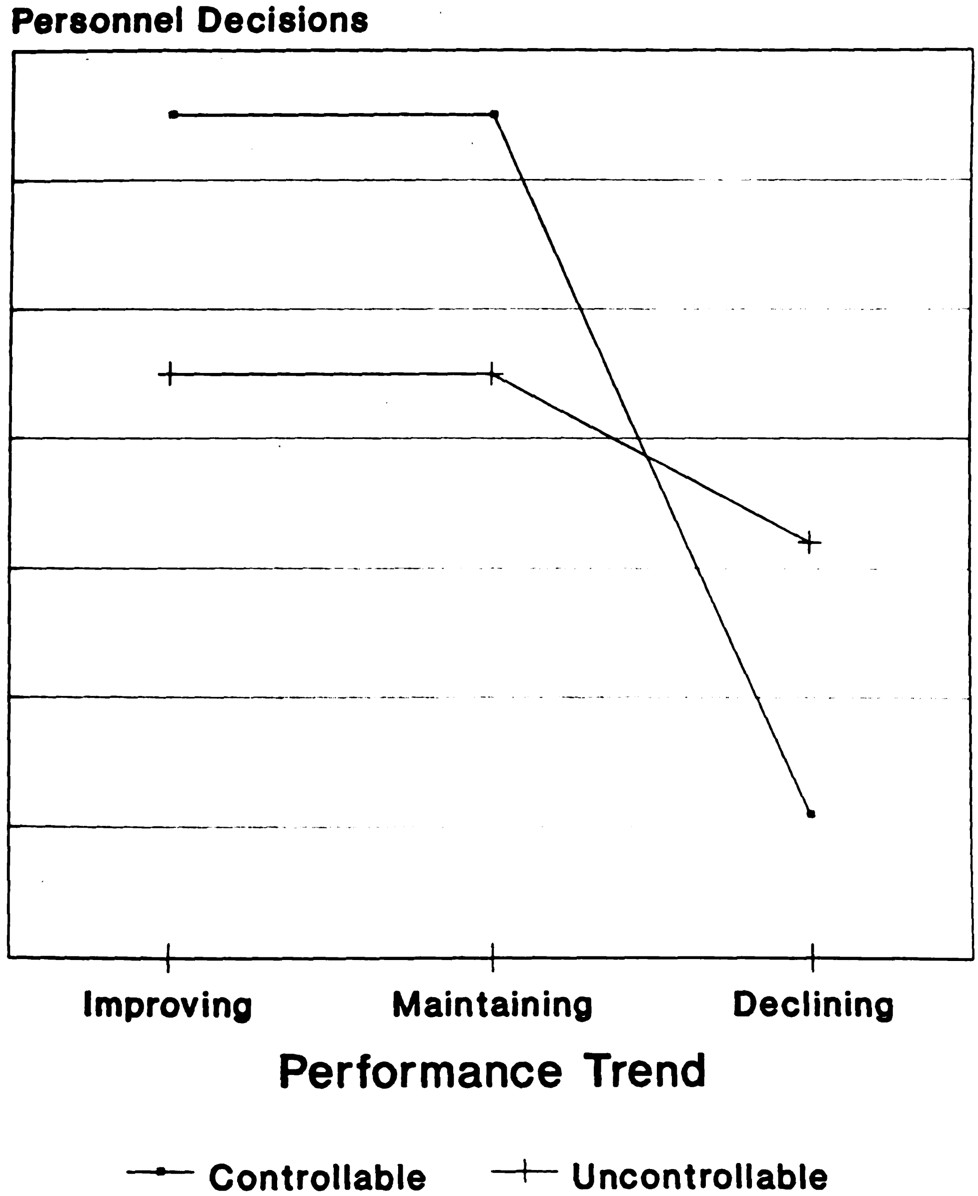

Figure 5. Hypothesized Effects of Controllability and Performance Trends on Personnel Decisions

H4: The effect of performance trends on personnel decisions will be moderated by the decision maker's perceptions of controllability.

H4a: Those employees who show improving or maintaining performance trends which are perceived by the decision maker as due to causes which are controllable will receive more positive personnel decisions than employees who show improving or maintaining performance trends which are due to causes perceived to be uncontrollable, when mean performance among employees is held constant.

H4b: Those employees who show declining performance trends which are perceived by the decision maker as due to causes which are controllable will be <u>less</u> likely to receive positive personnel decisions than employees who show declining performance trends which are due to causes perceived to be uncontrollable, when mean performance among employees is held constant.

No interactions between perceptions of stability and performance trend are expected because perceptions of stability of causation cannot be separated from performance trends. By definition, maintaining trends are more stable and less variable than improving or declining trends. Therefore, stability perceptions are actually perceptions of performance trend. Improving and declining performance will be considered less stable than maintaining trends and

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personnel decisions which are strongly affected by stability will also be strongly affected by performance trend.

Gully and Rodin (1990) found that maintaining trends were considered more stable than improving or declining trends. Since maintaining performance trends show less variability than improving or declining performance trends, by definition, it is reasonable to expect perceptions of causes of maintaining trends to be more stable.

H5: Causes of maintaining performance trends for employees will be perceived by the decision maker to be more stable than improving or declining performance trends, when mean performance among employees is held constant.

This is represented by link three in the conceptual model. It is possible that performance trends will strongly affect promotion decisions because of differences in perceived stability hypothesized above. Folkes and Marcoux (1984) found stability was related to the likelihood to date a person of the other sex. This was explained because stability could affect future expectancies, and the decision to date someone depends in some sense on expected future outcomes. If one considers promotions to be related to expectancies for future performance, then one might expect promotion decisions to be related to performance trend and attributions of stability. This hypothesis is presented in Figure 6.

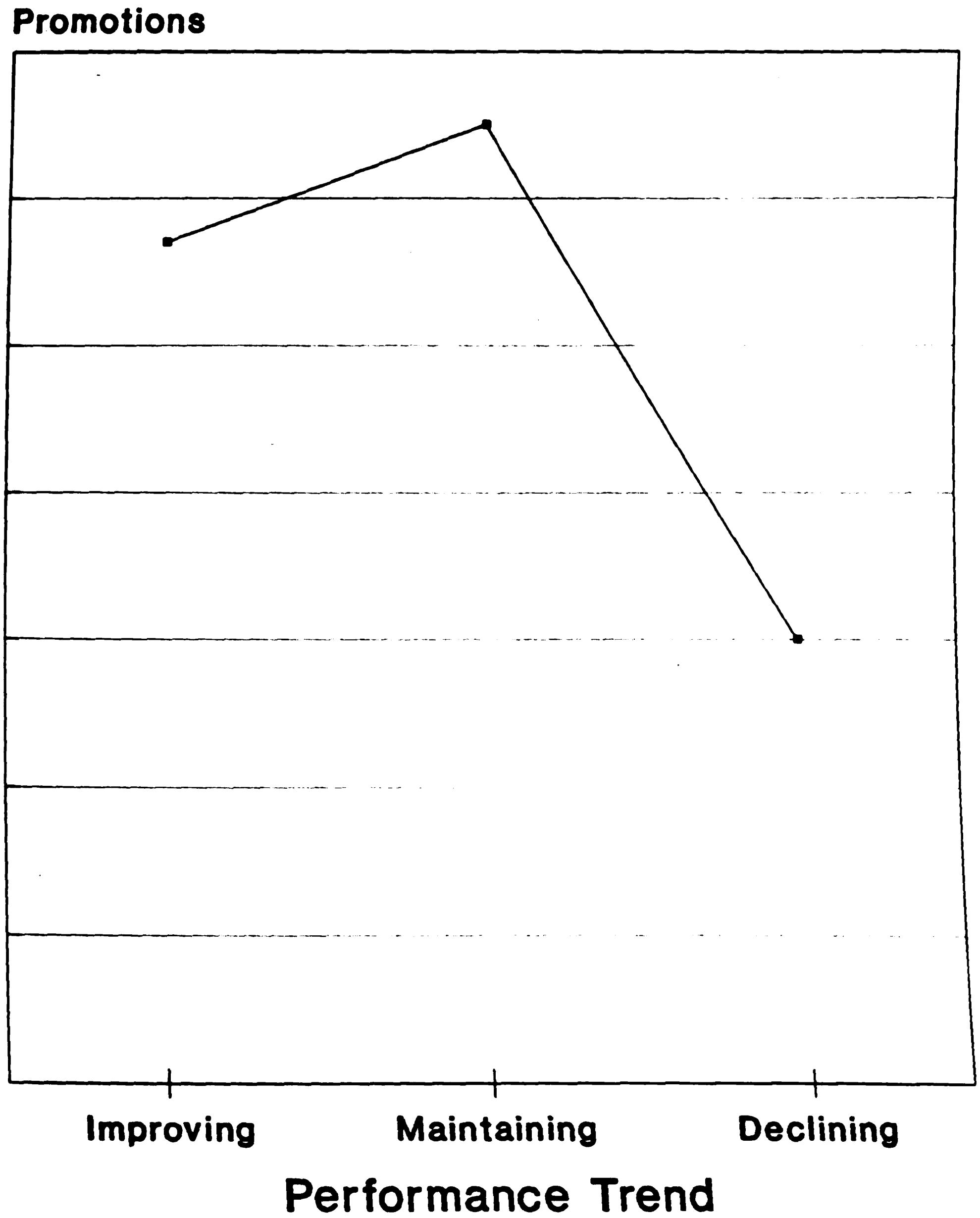

Figure 6. Hypothesized Effects of Performance Trends on Promotion Decisions

H6: Employees who show maintaining performance trends will be more likely to receive positive promotion decisions than employees who show improving or declining performance trends, when perceived controllability or locus of causality is held constant.

In sum, performance trends are expected to affect personnel decisions in a manner consistent with performance level. Improving performance is expected to be perceived in a fashion similar to high performance levels, while declining performance is expected to be perceived in a fashion similar to low performance levels, while hypotheses regarding maintaining performance are more equivocal. Also, performance trend is expected to interact with perceptions of controllability and locus such that the more internal or controllable the improving performance trend, the more positive the personnel decisions. The more internal or controllable the declining performance trend, the less positive the personnel decisions. No interactions between stability and performance trend are expected because performance trend is, by definition, the representation of stability.

Attributions of informational cues. One of the limitations of previous research was most decision makers have access to more information with regard to observed performance outcomes of an employee and the causes of that performance than is typically provided in research designs.

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Much of the research conducted on stereotypes, attribution theory and personnel decision making has simply provided a one or two line description of a good or poor employee and then asked subjects to infer the cause of that employee's performance with no additional information. This is not likely to occur in the actual decision making context. The conceptual model being presented takes these factors into account. Martell (1991) and Pazy (1986) found attributions can affect performance ratings and personnel decisions even under high information circumstances, given that some degree of cognitive work load is place upon the decision maker.

Attribution theory states people will spontaneously generate or infer causes of observed events and these causes can vary along the dimensions of internal/external locus of causality, controllability, and stability. Green and Mitchell (1979) state leaders attempt to diagnose the cause of a performance outcome in the first stage of their model. In order to do this, leaders have to act as information processors and they must integrate informational or contextual cues into their cognitive framework. Informational cues are forms of information which would allow a decision maker to more effectively infer the cause of an employee's observed performance. If informational cues allow a decision maker to infer the cause of an observed performance, then they should also influence attributional processes and the attributions should vary along the three dimensions identified earlier.

H7: Informational cues regarding causes of observed performance trends will result in variability of perceptions along the controllability and locus of control dimensions of attributions.

As noted earlier, stability perceptions are inextricably linked to performance trends. For example, one would have a difficult time finding an unstable cause of a maintaining performance trend. Therefore, informational cues are not expected to affect stability perceptions separate from the effect of performance trend; informational cues regarding stability are tied to performance trends while perceptions of locus of causation and controllability are not. Reconceptualizing locus and controllability dimensions as part of the same dimension yields three factors (internal-controllable, internal-uncontrollable, and external-uncontrollable) which can then be crossed with stability of performance.

Since the current work is exploratory and relatively complex, hypotheses will only be stated about a subset of the 2 X 3 taxonomy depicted earlier (see Figure 2). The specific subset of causes includes effort, ability, and task difficulty attributions, as depicted in the stable column of the 2 X 3 taxonomy. Ability refers to cognitive traits or skills which allow a person to accomplish a particular job or task. Effort is the exertion of energy or work level to accomplish a job or a task. Task difficulty refers to how hard or easy a particular task or job is for people in ge

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general. For the purposes of this research, task difficulty will be termed "ease of job". Using the taxonomy presented in Figure 2, the following hypotheses can be made regarding expected variations along the dimensions of controllability, stability, and locus of causation for effort, ability, and ease of job cues.

H7a: Informational cues of effort will be perceived to be more controllable than will ability or ease of job cues.

H7b: Informational cues of ability will be perceived to be less controllable than effort cues, but more controllable than ease of job cues.

H7c: Informational cues of ability and effort will be perceived to be more internal than ease of job cues.

H7d: Informational cues of effort, ability, and ease of job will be perceived to be more stable when associated with a maintaining trend than when associated with an improving or declining trend.

Hypotheses H7a through H7d are derived from crossing the first column of the 2 X 3 taxonomy presented in Figure 2 with the three types of performance trend (improving, maintaining, declining).

<u>Employee gender effects on attributional perceptions</u>. The gender of the managerial employee is expected to affect perceptions and attributions of informational cues made by the personnel decision maker through stereotype based

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processing. Gender stereotypes lead to expectancies and these expectancies can bias processing of information with regard to causes of observed performance (e.g., Heilman, 1983; Heilman & Stopek, 1985a; Martell, 1991).

H8: Performance trends will interact with gender of the managerial employee to affect attributions of stability and locus of causality made by the decision maker.

Gender stereotypes result in high expectations of good male performance for management jobs and low expectations of good female performance for the same jobs (e.g. Deaux, 1976; Heilman, 1983; Heilman et al., 1989). Improving performance trends by male managerial employees will be considered by the decision maker to be more internal and stable than will improving performance trends by female managerial employees. Conversely, declining performance trends by male managerial employees will be considered by the decision maker to be more unstable and external than will declining performance trends by female managerial employees. Hypotheses regarding the interaction effect of employee gender and performance trend on perceived stability are presented below and in Figure 7.

H8a: Improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more stable than will the same performance trends for female managerial employees.

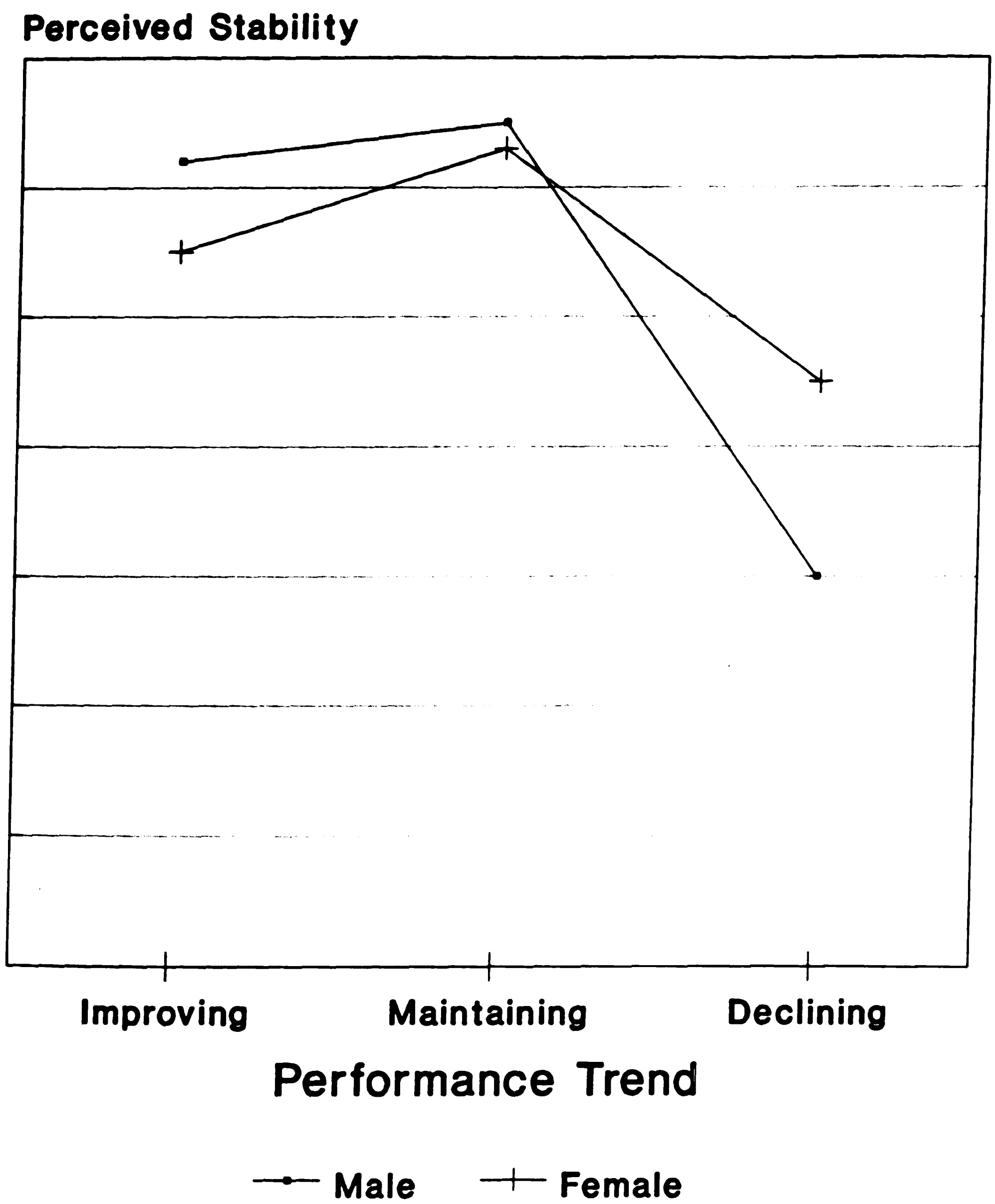

Figure 7. Hypothesized Effect of Employee Gender and Performance Trend on Perceived Stability

H8b: Declining performance trends for male managerial employees will be perceived by the decision maker to be more unstable than will the same performance trends for female managerial employees.

Hypotheses regarding the interaction effect of employee gender and performance trend on perceived locus of causation are presented below and in Figure 8.

H8c: Improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more internal than will the same performance trends for female managerial employees.

H8d: Declining performance trends for male managerial employees will be perceived by the decision maker to be more external than will the same performance trends for female managerial employees.

Because controllability is a sub-dimension of locus of causality, predictions similar to those for the interactive effect of employee gender and performance trend on perceptions of locus of causality are made for perceived controllability. These hypotheses are stated below and graphically represented in Figure 9.

H9: Performance trends will interact with the gender of the managerial employee to affect attributions of controllability made by the decision maker.

H9a: Improving or maintaining performance trends for male managerial employees will be perceived by the

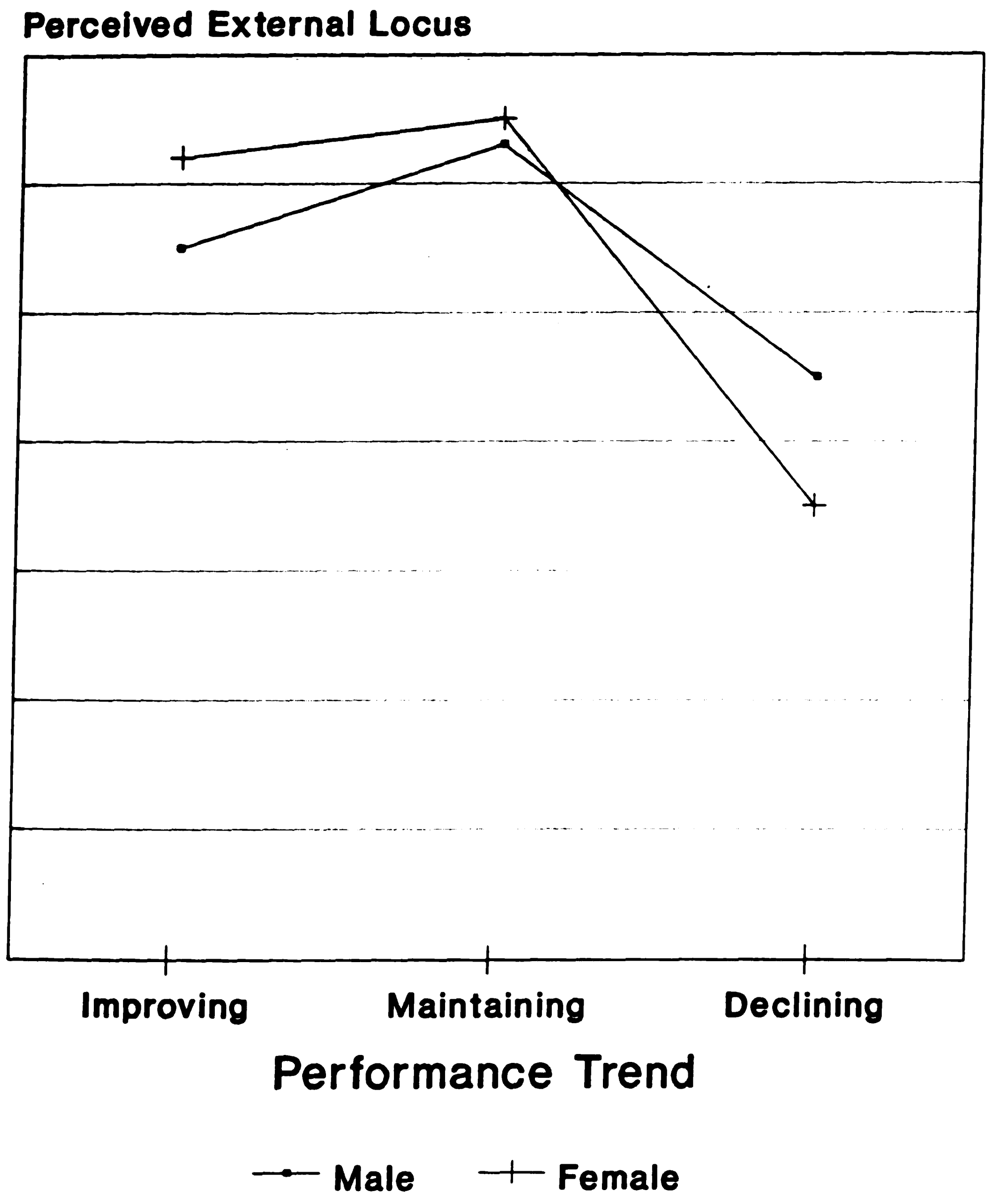

Figure 8. Hypothesized Effect of Employee Gender and Performance Trend on Perceived Locus of Causality

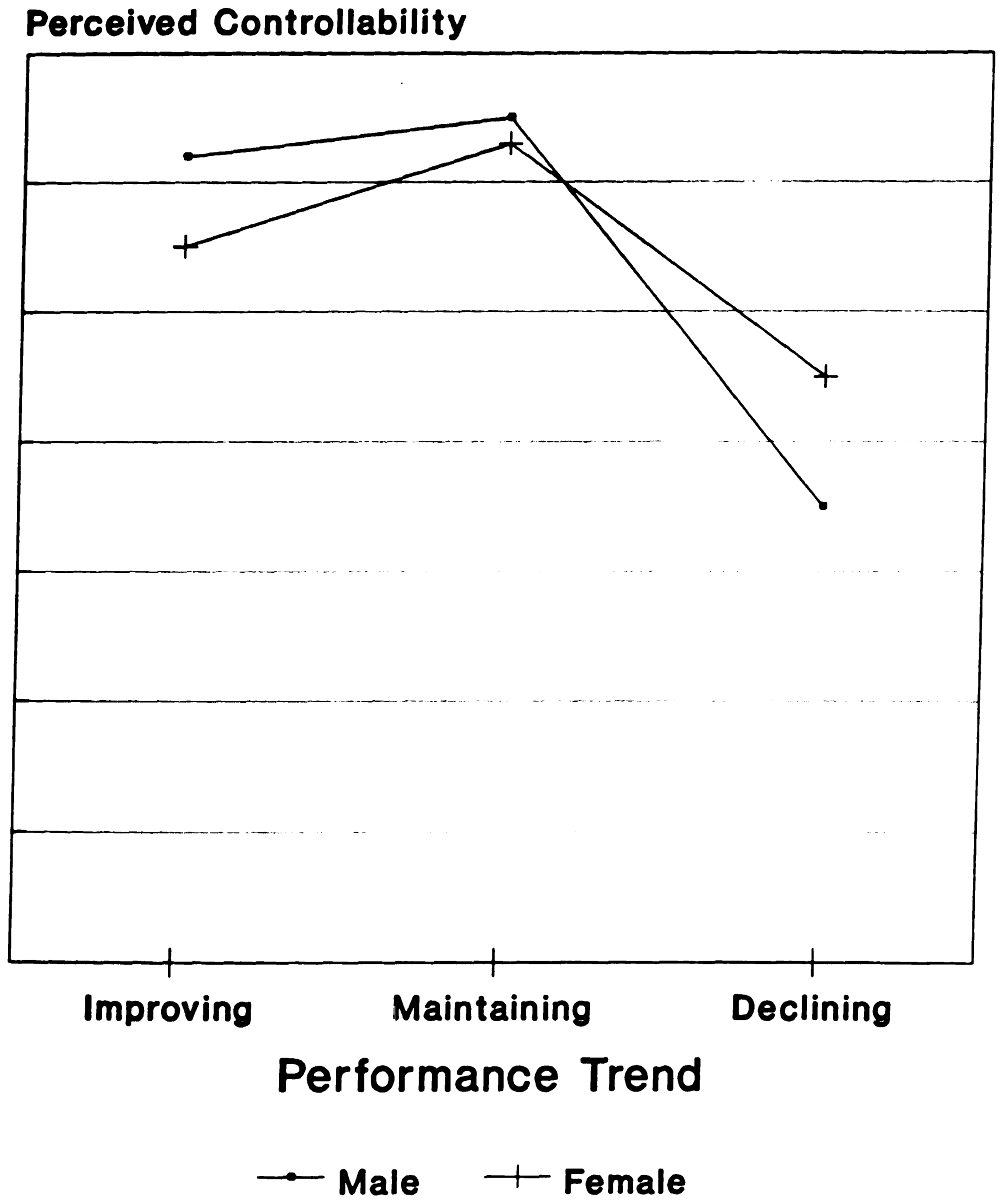

Figure 9. Hypothesized Effect of Employee Gender and Performance Trend on Perceived Controllability

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decision maker to be more controllable than will the same performance trends for female managerial employees.

H9b: Declining performance trends for male managerial employees will be perceived by the decision maker to be more uncontrollable than will the same performance trends for female managerial employees.

The interaction effects of employee gender and performance trend on perceived locus of causality, controllability, and stability are expected to be qualified by the effects of specific informational cues. Gender stereotypes usually result in perceptions that good male performance is due to high ability, while good female performance is due to high effort or ease of job. As stated earlier, many researchers have found that people engage in hypothesis confirmation processing when evaluating information relevant to a stereotype.

H10: Informational cues will interact with gender of the employee and performance trend to affect attributions of controllability and locus of causality made by the decision maker.

Since ability is an uncontrollable-internal trait, high ability cues which are associated with improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will high ability informational cues

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associated with improving or maintaining performance trends for female managerial employees. On the other hand, since female managerial employees are expected to be low in ability, low ability cues which are associated with declining performance trends for female managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will low ability informational cues associated with declining performance trends for male managerial employees. These hypotheses are represented below:

H10a: Informational cues which indicate high ability attributions for improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will improving or maintaining performance trends and high ability informational cues for female managerial employees.

H10b: Informational cues which indicate low ability attributions for declining performance trends for female managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will declining performance trends and low ability informational cues for male managerial employees.

Since effort is a controllable and internal trait, high effort cues associated with improving or maintaining performance trends for female managerial employees will be perceived by the decision maker to be more internal and controllable than will high effort informational cues associated with improving or maintaining performance trends for male managerial employees. Conversely, since male managerial employees are expected to exert less effort (due to their high ability), low effort cues associated with declining performance trends for male managerial employees will be perceived by the decision maker to be more internal and controllable than will low effort informational cues associated with declining performance trends for female managerial employees. These hypotheses are represented below:

H10c: Informational cues which indicate high effort attributions for improving or maintaining performance trends for female managerial employees will be perceived by the decision maker to be more internal and controllable than will improving or maintaining performance trends and high effort informational cues for male managerial employees.

H10d: Informational cues which indicate low effort attributions for declining performance trends for male managerial employees will be perceived by the decision maker to be more internal and controllable than will declining performance trends and low effort informational cues for female managerial employees.

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Since female managerial employee performances (good or poor) are more likely to be attributed to ease of the job (or to its difficulty) than will the same performances by male managerial employees, and since ease of job attributions are uncontrollable and external in locus of causality, the following hypothesis can be stated:

H10e: Informational cues which indicate high or low ease of job attributions for improving, maintaining, or declining performance trends for female managerial employees will be perceived by the decision maker to be more external and uncontrollable than will the same performance trends and informational cues for male managerial employees.

Employee gender effects on personnel decisions. Since employee gender is expected to affect causal attributions of performance, and since causal attributions of performance are expected to affect personnel decisions, employee gender is expected to interact with performance trends and informational cues to affect personnel decision making.

As noted in Hypotheses 3-3b and 4-4b, controllable or internal maintaining and improving performance trends are expected to be rewarded more than uncontrollable or external maintaining and improving performance trends. In contrast, controllable or internal declining performance trends are expected to be rewarded less than uncontrollable or external declining performance trends.

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As stated earlier, improving and maintaining performance trends for male managerial employees are hypothesized to be perceived by the decision maker to be more internal, controllable, and stable than the same performance trends for female managerial employees. Conversely, declining performance trends by female managerial employees are hypothesized to be perceived by the decision maker to be more internal, controllable, and stable than the same performance trends for male managerial employees.

If both sets of hypotheses stated above hold true, then employee gender should interact with observed performance trends to affect perceived attributions and personnel decisions. Since improving and maintaining performance trends are hypothesized to be perceived by the decision maker to be more internal and controllable for male managerial employees than for female managerial employees, male employees should receive more reward than female employees for improving and maintaining performance trends. Conversely, since declining performance trends are hypothesized to be perceived by the decision maker to be more internal and controllable for female managerial employees than for male managerial employees, female employees should receive less reward than male employees for declining performance trends. These hypotheses are presented below and depicted graphically in Figure 10.

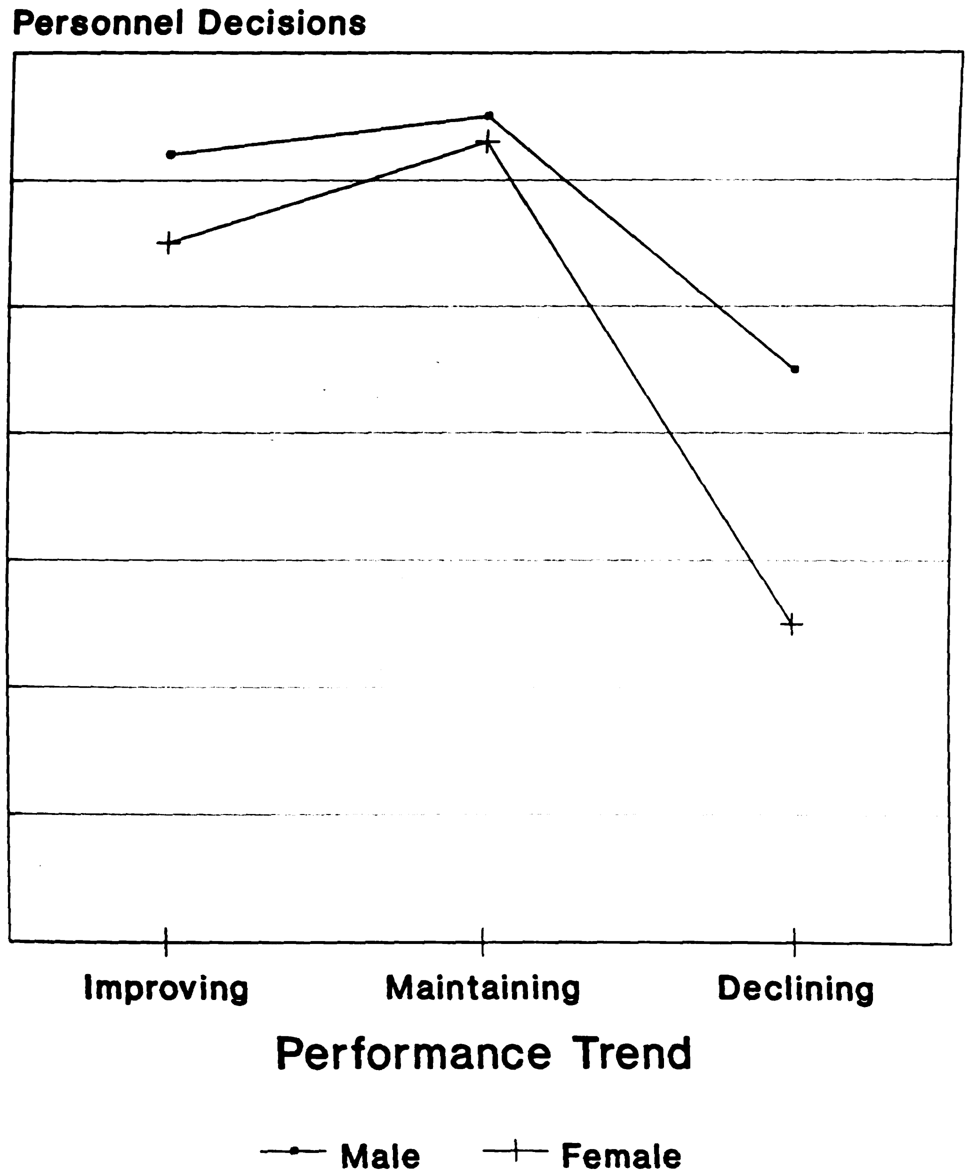

Figure 10. Hypothesized Effect of Employee Gender and Performance Trend on Personnel Decisions

H11: Performance trends will interact with gender of the managerial employee to affect personnel decisions made by the decision maker.

H11a: Improving or maintaining performance trends for male managerial employees will be rewarded more by the decision maker than will the same performance trends for female managerial employees.

H11b: Declining performance trends for female managerial employees will be rewarded less by the decision maker than will the same performance trends for male managerial employees.

The interaction between performance trend and gender of the managerial employee is expected to be qualified by the interaction effect between informational cues, performance trend and employee gender. This interaction effect will result in variability in perceptions of stability, locus of causation, and controllability, depending on the employee gender, performance trend, and the specific informational cues provided. These attributional perceptions, in turn, are hypothesized to affect pay and promotion decisions. Specific hypotheses regarding the effects of interactions involving each of the informational cues on personnel decisions are not presented since conflicting predictions can be made depending on whether the primary determinant of personnel decisions are perceptions of locus of causation, controllability, or stability.

Gender group membership effects on attributional perceptions. It is expected that improving performance of managerial employees who are of the same gender as the decision maker will be attributed more to internal and stable factors than improving performance of managerial employees who are of the opposite gender (Hewstone, 1990; Pettigrew, 1979). However, hypotheses regarding declining performance for people who are from the same gender group are more equivocal. If the person being evaluated is from an ingroup and doing poorly then one might "penalize" or downgrade that person in order to maintain one's self-image. On the other hand, if stereotypes bias information encoding, one may still perceive the ingroup performer to be more competent, relatively speaking, than the outgroup performer (Jackson et al., 1993; Hewstone, 1990).

Based on the "hypothesis confirmation" theory (Bodenhausen & Wyer, 1985), it is hypothesized that gender group membership will affect attributional processes (e.g., Hewstone, 1990) such that successful performance by someone of the same gender will be perceived to be due to internal and stable factors while successful performance by someone of the opposite gender will be perceived to be due to external and unstable factors. The converse should be true for declining performance. These hypotheses are depicted graphically in Figures 11 and 12.

H12: Performance trends will interact with gender ingroup/outgroup membership of the managerial

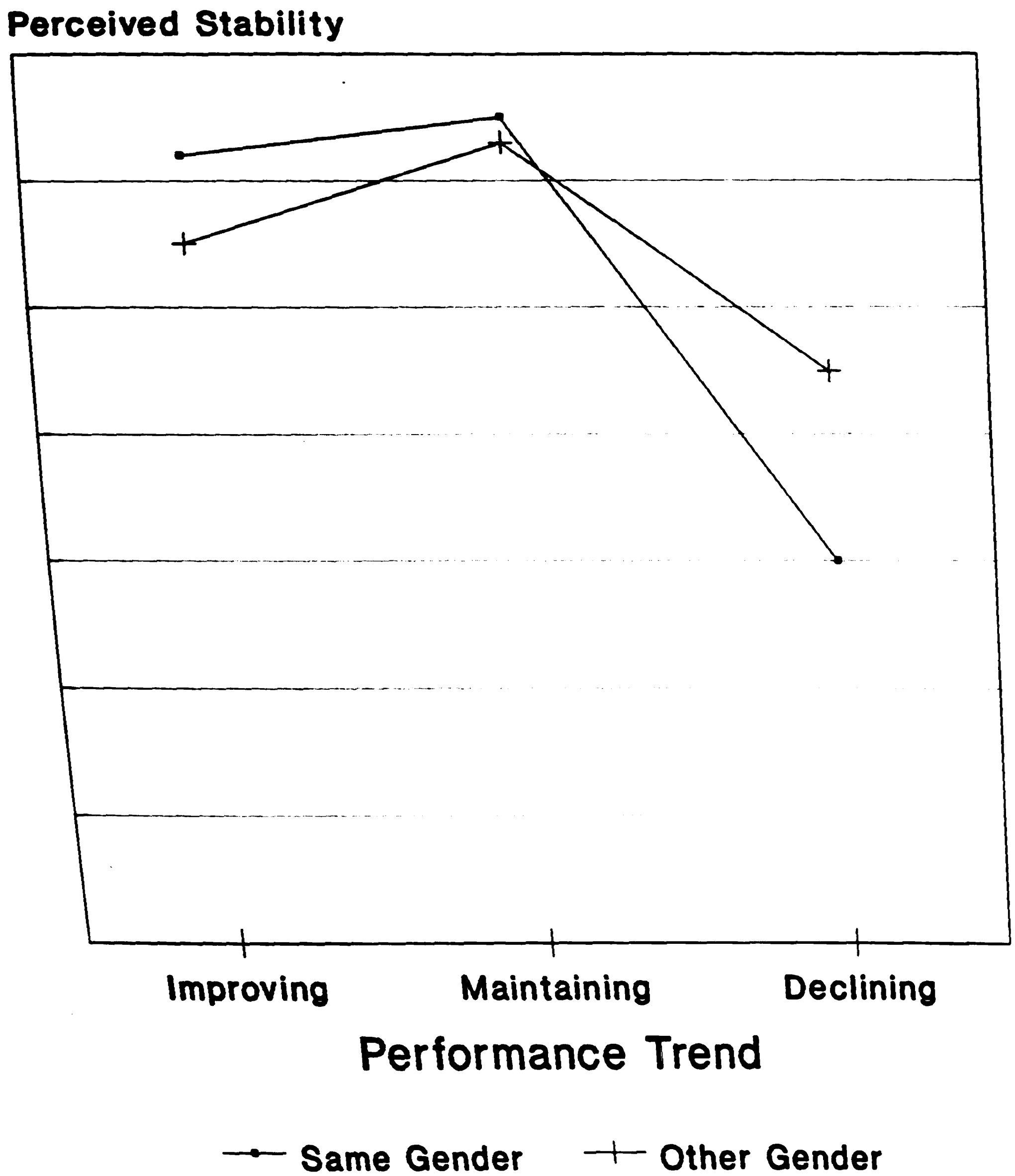

Figure 11. Hypothesized Effect of Gender Group Membership and Performance Trend on Perceived Stability

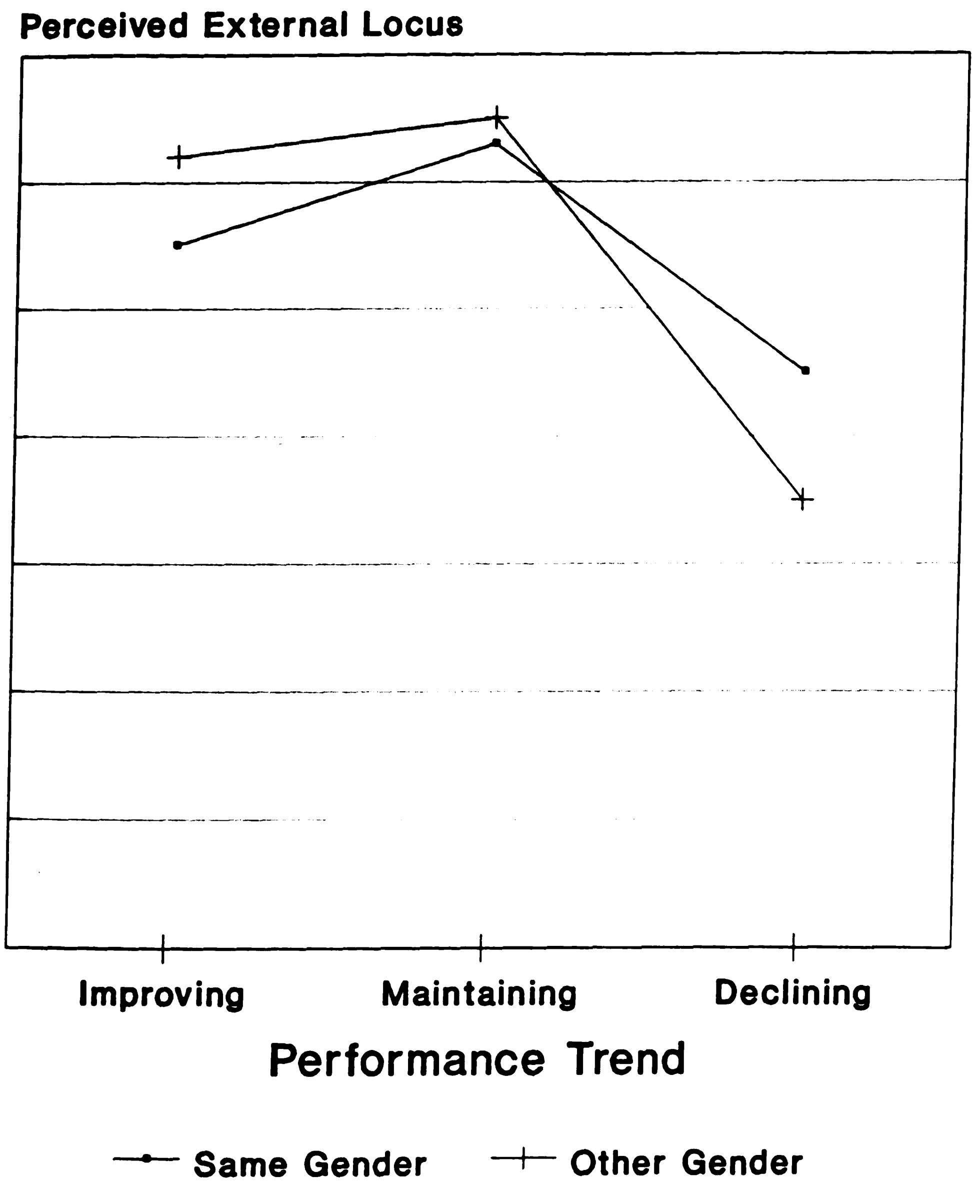

Figure 12. Hypothesized Effect of Gender Group Membership and Performance Trend on Perceived Locus of Causality

employee to affect attributions of stability and locus of causality made by the decision maker.

H12a: Improving or maintaining performance trends for an employee of the same gender as the decision maker will be perceived to be more stable than will the same performance trends for an employee of the opposite gender.

H12b: Declining performance trends for employees of the same gender as the decision maker will be perceived to be more unstable than will the same performance trends for employees of the opposite gender.

H12c: Improving or maintaining performance trends for employees of the same gender as the decision maker will be perceived to be more internal than will the same performance trends for employees of the opposite gender.

H12d: Declining performance trends for employees of the same gender as the decision maker will be perceived to be more external than will the same performance trends for employees of the opposite gender.

Because controllability is a sub-dimension of locus of causality, predictions similar to those for the interactive effect of employee gender ingroup/outgroup membership and performance trend on perceptions of locus of causality are ma

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made for perceived controllability. These hypotheses are stated below and graphically represented in Figure 13.

H13: Performance trends will interact with gender ingroup/outgroup membership of the managerial employee to affect attributions of controllability made by the decision maker.

H13a: Improving or maintaining performance trends for employees of the same gender as the decision maker will be perceived to be more controllable than will the same performance trends for employees of the opposite gender.

H13b: Declining performance trends for employees of the same gender as the decision maker will be perceived to be more uncontrollable than will the same performance trends for employees of the opposite gender.

The interactions of employee gender ingroup/outgroup membership and performance trend on perceived locus of causality, controllability, and stability are expected to be qualified by the effects of specific informational cues. Ingroup/outgroup stereotypes result in perceptions that good ingroup performance is due to high ability, while good outgroup performance is due to high effort or ease of job. As stated earlier, many researchers have found that people engage in hypothesis confirmation processing when evaluating information relevant to a stereotype.

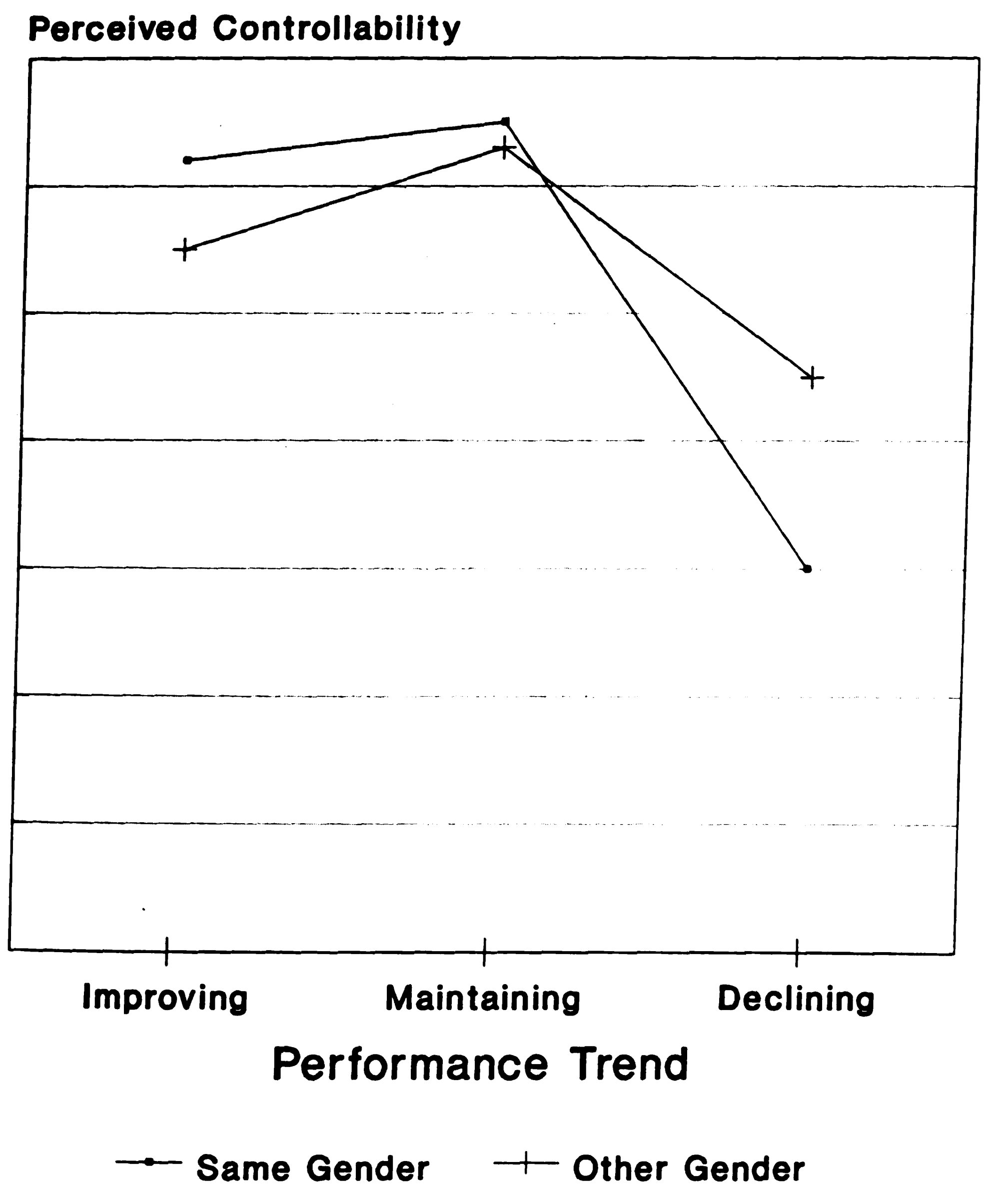

Figure 13. Hypothesized Effect of Gender Group Membership and Performance Trend on Perceived Controllability

H14: Informational cues will interact with performance trend and gender ingroup/outgroup membership of the employee to affect attributions of controllability and locus of causality made by the decision maker.

Since ability is an uncontrollable-internal trait, high ability cues which are associated with improving or maintaining performance trends for gender ingroup managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will high ability informational cues associated with improving or maintaining performance trends for gender outgroup managerial employees. On the other hand, since outgroup managerial employees are expected to be low in ability, low ability cues associated with declining performance trends for gender outgroup managerial employees will be more likely to be perceived by the decision maker to be due to internal and uncontrollable causes than will low ability informational cues associated with declining performance trends for gender ingroup managerial employees. These hypotheses are represented below:

H14a: Informational cues which indicate high ability attributions for improving or maintaining performance trends for gender ingroup managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will improving or maintaining performance trends and high ability informational cues for gender outgroup managerial employees.

H14b: Informational cues which indicate low ability attributions for declining performance trends for gender outgroup managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will declining performance trends and low ability informational cues for gender ingroup managerial employees.

Since effort is a controllable and internal trait, and since effort is attributed to the successful performance of outgroup employees, high effort cues associated with improving or maintaining performance trends for gender outgroup managerial employees will be perceived by the decision maker to be more internal and controllable than will high effort informational cues associated with improving or maintaining performance trends for ingroup managerial employees. Conversely, since ingroup managerial employees are expected to exert less effort (due to their high ability), low effort cues which are associated with declining performance trends for gender ingroup managerial employees will be more likely to be perceived by the decision maker to be due to internal and controllable causes than will low effort informational cues associated with declining performance trends for gender outgroup managerial employees. These hypotheses are represented below:

H14c: Informational cues which indicate high effort attributions for improving or maintaining performance trends for gender outgroup managerial employees will be perceived by the decision maker to be more internal and controllable than will improving or maintaining performance trends and high effort informational cues for gender ingroup managerial employees.

H14d: Informational cues which indicate low effort attributions for declining performance trends for gender ingroup managerial employees will be perceived by the decision maker to be more internal and controllable than will declining performance trends and low effort informational cues for gender outgroup managerial employees.

Since gender outgroup managerial employee performances (good or poor) are more likely to be attributed to ease of the job (or to its difficulty) than will the same performances by gender ingroup managerial employees, and since ease of job attributions are uncontrollable and external in locus of causality, the following hypothesis can be stated:

H14e: Informational cues which indicate high or low ease of job attributions for improving, maintaining, or declining performance trends for gender outgroup managerial employees will be perceived by the decision maker to be more external and uncontrollable than will the same performance trends and informational cues for gender ingroup managerial employees.

Gender group membership effects on personnel decisions. Since employee gender ingroup/outgroup membership is expected to affect causal attributions of performance, and since causal attributions of performance are expected to affect personnel decisions, employee gender group membership is expected to interact with performance trends and informational cues to affect personnel decision making.

As noted earlier, controllable or internal maintaining and improving performance trends are expected to be rewarded more than uncontrollable or external maintaining and improving performance trends. In contrast, controllable or internal declining performance trends are expected to be rewarded less than uncontrollable or external declining performance trends.

Additionally, improving and maintaining performance trends for gender ingroup managerial employees are hypothesized to be perceived by the decision maker to be more internal, controllable, and stable than the same performance trends for gender outgroup managerial employees. Conversely, declining performance trends by gender outgroup managerial employees are hypothesized to be perceived by the decision maker to be more internal, controllable, and stable than the same performance trends for gender ingroup managerial employees.

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If both sets of hypotheses stated above hold true, then employee gender group membership should interact with observed performance trends to affect perceived attributions and personnel decisions. Since improving and maintaining performance trends are hypothesized to be perceived by the decision maker to be more internal and controllable for gender ingroup managerial employees than for gender outgroup managerial employees, ingroup employees should receive more reward than outgroup employees for improving and maintaining performance trends. Conversely, since declining performance trends are hypothesized to be perceived by the decision maker to be more internal and controllable for gender outgroup managerial employees than for gender ingroup managerial employees, outgroup employees should receive less reward than ingroup employees for declining performance trends. These hypotheses are presented below and they are depicted graphically in Figure 14.

H15: Performance trends will interact with gender group membership of the managerial employee to affect personnel decisions made by the decision maker.

H15a: Improving or maintaining performance trends for gender ingroup managerial employees will be rewarded more by the decision maker than will the same performance trends for gender outgroup managerial employees.

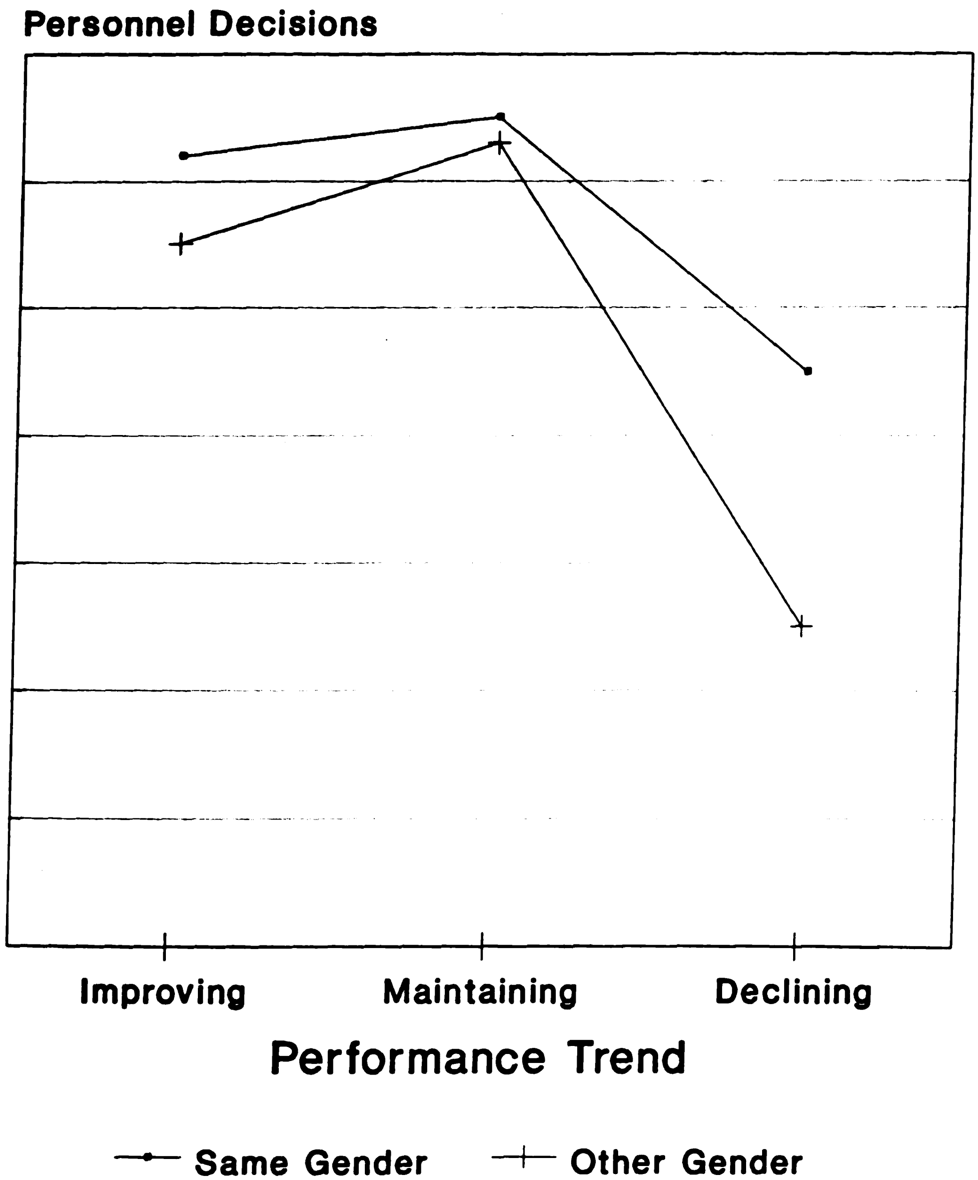

Figure 14. Hypothesized Effect of Gender Group Membership and Performance Trend on Personnel Decisions

H15b: Declining performance trends for gender outgroup managerial employees will be rewarded less by the decision maker than will the same performance trends for gender ingroup managerial employees.

The interaction between performance trend and gender group membership of the managerial employee is expected to be qualified by the interaction effect between informational cues, performance trend and employee group membership. This interaction effect will result in variability in perceptions of stability, locus of causation, and controllability, depending on the employee gender group membership, performance trend, and the specific informational cues provided. These attributional perceptions, in turn, are hypothesized to affect pay and promotion decisions. Specific hypotheses regarding the effects of interactions involving each of the informational cues on personnel decisions are not presented since conflicting predictions can be made depending on whether the primary determinant of personnel decisions are perceptions of locus of causation, controllability, or stability.

Conclusion

If a decision maker does not have stereotyped attitudes toward women as managers, then stereotype based biases are not likely to occur because gender is not a salient characteristic to the decision maker. Therefore, all of the hypotheses regarding gender and gender group membership are only expected to occur for people who have negative stereotypes toward women managers. The hypotheses which were presented were derived from the literature review and conclusions which are briefly reviewed below. A complete listing of the hypotheses is in Appendix A.

Leaders are expected to engage in attributional search whenever making personnel decisions. Attributions can vary on the dimensions of controllability, locus of causation, and stability and they are expected to interact with observed performance trends to affect personnel decisions. Improving performance which is due to internal or controllable causes is expected to be more highly rewarded than declining performance which is due to internal or controllable causes. Perceptions of stability are expected to be directly linked to performance trends and they are expected to affect promotion decisions in a manner which is different from pay or salary decisions. These effects are expected to occur in spite of constant overall performance levels.

Gender and gender group membership is expected to affect the perceived locus of causation, stability, and controllability of observed performance trends. Improving or maintaining trends for male or same gender employees are expected to be perceived by the decision maker to be more internal, controllable, and stable than improving or maintaining trends for female or opposite gender employees. These effects will be qualified by interactions involving specific informational cues. Furthermore, the attributions which decision makers make as a function of gender and gender group membership are hypothesized to affect subsequent decision making, such that male or same gender employees will tend to receive higher reward than female or opposite gender employees.

The conceptual model presented thus explains how gender and group membership stereotypes might affect personnel decisions in spite of the presence of specific information regarding performance causation and even when all performers are considered at the same performance level. It also provides an integration and extension of previous work on the effects of stereotypes on attributional processes.

Since males are dominant in upper level management positions, the model also helps to explain why women have a difficult time moving into higher levels of management. Males are frequently in high status positions and are responsible for making many personnel decisions, and since personnel decision making is hypothesized to be influenced by the gender of the decision maker and evaluatee, it is easy to see how these processes can operate to maintain a "glass ceiling" effect for women. The purpose of the current research effort is to test the conceptual model presented above.

METHOD

Participants

Two hundred and eighty-nine participants were recruited from the psychology department participant pool at Michigan State University for involvement in this research project. Each participant spent approximately 1 and 1/2 hours reading fictional employee files and providing responses to various questions (these will be described in a later section). All participants were treated in accord with the ethical standards of the American Psychological Association (APA, 1992).

Of the 289 participants, 256 provided responses which were usable; the other 33 participants did not follow instructions properly, which rendered their responses unsuitable. Of the 256 participants who provided usable responses, 115 (45%) were male and 141 (55%) were female. Participants ranged in ages from 18 to 29 years old.

The choice of sample size was based on a power analysis of the effects of gender on personnel decisions. The power analysis is presented in Appendix B. This sample of participants was selected for ease of accessibility, large sample size, and because testing of the conceptual model presented earlier needed to occur within a laboratory setting.

Design

The study was conducted in a lab setting for several reasons. First, the purpose of the study was simply to discover if gender related biases could affect evaluations and responses to variations in performance trends and performance-related information. The model presented was a new and untested model, so it was reasonable to conduct this test in a lab setting prior to attempting its validation in a field setting (Ilgen, 1986).

Second, the nature of the hypotheses were such that perfect similarity in performance level, performance trend variability, and informational cues had to occur between different employee performance profiles. This was not likely to occur in a field context. Generalizability issues regarding findings involving this sample and research design will be reviewed in the Discussion section.

The completely crossed factorial design consisted of three conditions of informational cues (effort, ability, ease of job), three conditions of performance trend (improving, maintaining, declining), two conditions of gender of target employee (male or female), and two conditions of gender of decision maker (male or female). Thirty-six cells (3 X 3 X 2 X 2) were included in the complete design.

Performance trend (improving, maintaining, declining), gender of target employee, and gender of decision maker were between-subjects variables, whereas type of informational cue was a within-subjects variable. Scores on attitudes toward women as managers (WAMS) were collected as a separate independent variable, since they were expected to influence the effect of target employee gender on attributions and personnel decisions.

There were three sets of dependent variables measured as part of this study. The first set of dependent variables measured included some of the manipulation checks used in the study. Specifically, participants provided responses to whether they perceived the target employee as exhibiting low or high effort and low or high ability. They also provided responses to whether they perceived the job in question to be low or high in ease of accomplishment.

The second set of dependent variables measured included perceived locus of causality, controllability, and stability of the causes of the observed performance trends. These were the attributions hypothesized to vary in response to informational cues, and they were expected to affect personnel decision making.

The third and final set of dependent variables measured included promotion, salary, and merit pay bonus decisions. This third set of dependent variables also included likability and expected future performance of the target employee. Research has indicated that these two variables pl

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play a role in making personnel decisions, though specific hypotheses regarding these last variables were not presented earlier. The specific analyses used to test hypotheses regarding attributions and personnel decisions will be discussed later.

Pilot Studies

Two separate pilot studies were conducted to ensure: 1) manipulations using fictional employee files would be effective; 2) participant attitudes, perceptions and decisions could be reliably measured; 3) the instructions for the study were clear and unbiased; and 4) demand effects regarding gender were minimized. The exact nature of the manipulations and questionnaires used in the complete study which were derived from the results of the pilot studies will be described later.

First pilot study. The first of the two pilot studies investigated whether research instructions were clear and unbiased and whether fictional employee files created for use in the complete study would effectively manipulate the perceived causes of managerial employee performance. The perceived causes of observed performance (ability, specific and typical effort, mood, ease of job, and other person causes) were manipulated in combination with the different performance trends and target employee gender. The selection of manipulated causes was based on the six-cell matrix presented in Figure 2.

Factor analyses and reliability analyses were conducted on the responses given by the 250 participants in the pilot study to questions about perceived causes of performance, attributions, and personnel decisions. Results of factor analyses and reliability analyses of the pilot study are presented in Appendix C. A repeated measures MANOVA indicated that the fictional employee files did manipulate perceived causes of performance, but factor analyses indicated that participant perceptions involving certain causes of performance tended to covary. For example, perceptions of typical or long-term effort and ability formed one factor, perceptions of specific or short-term effort and mood formed another factor, and perceptions of ease of job, other person, and luck formed a third factor.

These results suggested that causes within each of the cells in the six-cell matrix presented in Figure 2 could not be reliably measured separate from perceptions involving other cells, and that people look at patterns of causes when making attributional inferences, not single causes. The results also suggested that these patterns of causes tended to fall into three main areas: consistent or trait-like qualities (ability or consistent effort), short-term or motivated qualities (mood, attitude, or specific effort), and external causes (others, luck, ease of job). These findings are consistent with previous work which has identified ability, effort, and task difficulty as the three primary attributions which affect behavior. Thus, the results of the first pilot study suggested that several areas of the complete study needed further improvement: 1) the manipulations in the personnel files needed to be rewritten to suggest patterns of causation; 2) these patterns had to correspond to stable or trait-like causes, temporary or motivational causes, and external causes of performance; and 3) items in the scales needed to be rewritten to maximally discriminate between locus of causation and perceived controllability.

In response to these findings, the fictional employee files were revised to include only those causes of performance which tended to create separate factors in the first pilot study. The three causes of performance manipulated in the new set of fictional employee files included ability, effort, and ease of job informational cues. Also, since perceptions regarding the different causes of performance could influence perceptions about other causes, an effort was made to provide informational cues which would eliminate other causes as reasons for the observed performance trends. Specific characteristics of these manipulations will be discussed in the following section on manipulations.

Participants in the first pilot study also provided responses to a questionnaire about the clarity of the research instructions. Participants indicated that more time was needed to complete the questionnaires and that certain instructions were unclear. As a result, the research instructions were clarified in response to participant feedback, and time to complete the questionnaires was increased from one hour to one and one-half hours.

Participants also answered open-ended questions regarding their beliefs about the topic of interest in the research being conducted. Fifty-two participants were unable to finish these questions due to time constraints. Of the remaining 198 participants who did answer the questions, 100 (51 %) indicated that the purpose of the research was to investigate personnel decision making or the process of evaluating the work of others. Thirty-six (18%) of the 198 participants indicated that the purpose of the research was to evaluate their ability to answer questions consistently or accurately, while 44 (22%) indicated that they had no idea what the research was about. Only 18 (9%) of the 198 participants indicated that gender was a topic of consideration for this research. These results suggest that experimenter demand effects regarding gender were minimized using the current experimental procedure.

Second pilot study. As noted above, the fictional employee files and measurement scales used in the first pilot study were revised and a second pilot study was conducted. There were 60 participants in this second pilot study. The purpose of this study was to ensure that perceptions regarding causes of performance, attributions, and personnel decisions were distinguishable and that they could be reliably measured. This pilot study also tested revisions in the research instructions and ensured that experimenter demand effects were minimized.

The results of the factor analyses and reliability analyses were similar to those obtained in the complete study. For this reason, only the results of the complete study will be presented. The obtained results of the complete study are presented in the Results section. Manipulation checks indicated that the fictional employee files affected perceived causes of performance, and that these could be reliably measured.

Twenty participants were randomly selected for a five-minute interview immediately following the completion of their questionnaires. All 20 stated that the research instructions were clear and easy to follow. Nineteen of the 20 participants indicated that the purpose of the research was to investigate personnel evaluation or decision making. Only one participant suggested that gender of the employee was an important variable in the research.

The results of the pilot studies yielded fictional employee files which were effective in manipulating performance trends, perceived causes of observed performance, and employee gender. Furthermore, the research instructions were clear and easy to follow and participants were rarely aware that gender of the target employee was manipulated or important to the study. The nature of the specific manipulations are described below.

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<u>Manipulations</u>

A set of fictional employee files were developed for presentation to each of the participants who took part in the study. Attributions and personnel decisions were made in response to the fictional employee files presented as part of the study. The fictional employee files consisted of biographical data, current and past performance history for the year, and a written statement by the target employee's hypothetical manager reviewing the cause of that employee's performance for the year.

The variables which were manipulated in the employee files were: 1) the gender of the target employee; 2) the observed performance trend; and 3) informational cues of the causes of the observed performance. The 2 (gender of target employee) X 3 (performance trend) X 3 (informational cues) matrix yielded 18 different employee files needed for the purposes of the study. Each file was identical in content with several exceptions.

First, names and pronouns were changed to reflect the gender of the target employee. The names of the male and female target employees were matched on perceived attractiveness and competence to remove effects which might be due to stereotypes which were associated with specific names (Kasof, 1993).

Second, performance trend information was changed according to whether the manipulated performance trend was improving, maintaining, or declining. The performance trend information was presented in graphical and tabular form with the overall average performance of each employee for the year clearly marked.

Third, informational cues were changed to reflect the presentation of different possible causes of the observed performance trends. These informational cues were manipulated as displayed in Table 1. Some examples of the 18 fictional employee files are presented in Appendix D, along with an outline for creating the employee files.

Each of the participants were presented with three of the 18 possible employee files. These three files were identical in the gender of the target employee and the observed performance trend. The ability, effort, and ease of job informational cues were the only manipulations which varied among the three files presented to each participant. Thus, informational cues was a within-subjects variable while performance trend and gender of the target employee were between-subjects variables.

Participants were asked to answer a variety of questions regarding the causes of the observed performance of the employees presented in the fictional files, perceived attributions, and personnel decisions. They were also asked to provide data regarding their gender, age, other demographics, and their attitudes toward women as managers. The following section discusses the exact nature of the two questionnaires used in the complete study to measure independent and dependent variables of interest.

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Table 1

Manipulations of Informational Cues

	IMPROVING	MAINTAINING	DECLINING
EFFORT	**High effort**	**High effort**	**Low effort**
Observed performance in spite of:	Hard job Low ability	Hard job Low ability	Easy job High ability
ABILITY	**High ability**	**High ability**	**Low ability**
Observed performance in spite of:	Hard job Low effort	Hard job Low effort	Easy job High effort
EASE OF JOB	**Easy job**	**Easy job**	**Hard job**
Observed performance in spite of:	Low effort Low ability	Low effort Low ability	High effort High ability

<u>Measures</u>

<u>First questionnaire</u>. The perceived causes, attributions and personnel decisions questionnaire measured several sets of constructs: 1) perceived causes of observed performance trends; 2) perceived controllability, locus, and stability of the causes; and 3) promotion decisions, pay decisions, expectations for future performance, and likability. It also contained three questions which functioned as manipulation checks. A total of 55 block randomized five-point Likert scale items were presented in the first questionnaire. The 55 items will be discussed in four blocks which correspond with the above three sets of constructs, plus manipulation checks.

The first block of questions measured perceptions of ability, effort, and ease of job as possible causes of performance. Three items were written for each of the seven identified causes and this yielded a total of 9 questions for the first block.

The items were developed by modifying and adapting instruments used by previous researchers for the current study. For example, Deaux and Emswiller (1974) used a question to ask whether participants thought observed performance was due to ability or luck. Unfortunately, their procedure resulted in an ipsative scale, and it was ambiguous in interpretation. The Deaux and Emswiller question was modified and adapted for use in the current study; it became two questions in the first questionnaire.

An example of one of these questions is provided below (see Appendix E for the full set of scales):

Ability

I believe the observed performance of the store was due to the Store Manager's high ability.

1=Strongly Disagree

2=Disagree

3=Neither Disagree Nor Agree

4=Agree

5=Strongly Agree

The 9 questions, which were written through the process described above, were block randomized and presented in the early part of the perceived causes, attributions, and personnel decisions questionnaire. These items were used in a manipulation check of the effectiveness of the informational cues contained in the employee files read by the participants.

The next block of the first questionnaire dealt with perceptions of controllability, locus of causation, and stability of the causes of observed performance. These items were derived from the Causal Dimension Scale (CDS) developed by Russell (1982). The items in the CDS are ipsative; thus, they were rewritten and adapted for use in the current research effort.

A total of 18 items were generated for the three dimensions of causation identified by attribution theory (eight controllability, five locus of causation, and five stability items). These eighteen items were in five-point Likert scale format and they comprised the second block of the first questionnaire. A sample of one of the questions is provided below (see Appendix E for the full set of scales):

Controllability

The CAUSE of the observed performance of this Store Manager was something which the Store Manager could directly control.

1=Strongly Disagree

2=Disagree

3=Neither Disagree Nor Agree

4=Agree

5=Strongly Agree

The 18 questions which were generated by adapting and modifying the CDS to the current study were block randomized and they were presented in the second part of the first questionnaire. These items were used as dependent and independent variables in the analyses to be discussed later.

The third block of the first questionnaire consisted of items designed to measure expectations for future performance and general positive or negative affect toward the employee in question. Items also measured the likelihood of making a decision to promote the employee, to increase the employee's wage or salary, or to provide a merit pay bonus for that employee's performance. Some of the items were derived from previous research efforts (e.g.

Pazy, 1986) though most were specifically written for the purposes of the current study.

Five items were generated for promotion and salary decisions, five more were generated for expectations for future performance, four items were generated for merit pay decisions, and six items were generated for affect toward the employee, yielding a total of 25 items. These items were randomized and placed at the end of the third block of the first questionnaire. A sample of one of the questions is provided below (see Appendix E for the full set of scales):

Promotion

I would recommend this person for permanent promotion to Division Manager.

1=Strongly Disagree

2=Disagree

3=Neither Disagree Nor Agree

4=Agree

5=Strongly Agree

The three manipulation check items which were in the first questionnaire asked questions regarding the average profit level of the target employee, the average profit level of all employees in the region, and whether the target employee was average, above average, or below average in profit level.

Second questionnaire. After participants had completed the perceived causes, attributions and personnel decisions questionnaire for all three employee files, they were asked to complete the WAMS (second) questionnaire. The WAMS questionnaire consisted of 21 questions which comprise the WAMS (Terborg, et al., 1977), several demographic variables, and manipulation checks. There were a total of 32 questions in the second questionnaire.

The first 21 items of the second questionnaire came from the WAMS (Terborg, et al., 1977). The WAMS is a 21-item scale which is designed to measure the extent to which people have negative stereotypes of women as managers. It has a split-half reliability of .92, and views toward women's rights have been positively correlated with WAMS scores for both men and women (Terborg et al., 1977). WAMS scores appear to be resistant to experimental manipulations and it has been successfully used in research relating gender stereotypes with personnel decisions and attributions of performance (Garland & Price, 1977; Stevens & DeNisi, 1980).

The last eleven questions of the WAMS questionnaire consisted of manipulation checks and demographic variables. The first six of the last eleven questions asked whether participants based promotion, pay raise, and merit pay bonus decisions on expected future performance or perceptions of deservedness or reward.

The last five questions of the WAMS questionnaire were included at the end of the study to avoid biasing the responses of participants. If these questions had been included earlier in the study, participants might have become sensitized to the nature of the manipulations. The first of these last five remaining questions was designed to determine whether or not participants noticed the gender of the target employee. The next two questions provided data about the gender of the participant and age of the participant. The final two questions were about the supervisory work experience of the participant.

Table 2 is a summary of variables which were measured by each of the two questionnaires and the number of items used for each variable. Table 3 summarizes the major independent and dependent variables of interest, along with manipulation checks.

Procedure

Each participant read a scenario which described a specific personnel decision making context. Participants were asked to imagine themselves as managers of a rapidly growing computer products company. The descriptive scenario provided allowed participants to better understand the exact characteristics of the presented computer company and the context within which the personnel decisions were to be made. The specific scenarios participants read are presented in Appendix D.

After reading the scenario which described the decision making context, participants were then asked to read one of three fictional employee files. These files presented information which described the performance of various

Table 2

Summary of Questionnaires

Perceived Causes, Attributions, and Personnel Decisions Questionnaire (First Questionnaire)

First Block: Perceived Causes of Performance (Man. Checks)	
Effort:	3 items
Ability:	3 items
Ease of job:	3 items
Second Block: Perceived Locus, Controllability, Stability	
Locus of Causation:	5 items
Controllability:	8 items
Stability:	5 items
Third Block: Expectations, Affect, and Personnel Decisions	
Expectations future performance:	5 items
Affect toward employee:	6 items
Promotion decisions:	5 items
Salary decisions:	5 items
Merit pay bonus decisions:	4 items
Fourth Block: Manipulation checks of perceptions	
Profit level for target employee:	1 item
Profit level for all employees:	1 item
Above average target employees:	1 item

Total number of items in first questionnaire = 55

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Table 2 (cont'd)

<u>WAMS, Demographics, and Manipulation Checks Questionnaire</u>

(Second Questionnaire)

First block: WAMS

Attitudes toward women as managers:	21 items

Second block: Demographics, Manipulation Checks, and Other

Promotion based on future performance:	1 item
Promotion based on reward:	1 item
Pay raise based on future performance:	1 item
Pay raise based on reward:	1 item
Merit pay based on future performance:	1 item
Merit pay based on reward:	1 item
Perceived gender of target employees:	1 item
Gender of participant:	1 item
Age of participant:	1 item
Supervisory work experience:	1 item
Length of supervisory experience:	1 item

Total number of items in second questionnaire = 32

Table 3

Independent and Dependent Variables of Interest

Independent Variables

1) Gender of target person: male or female

2) Ingroup/outgroup gender: same or different

3) Performance trend: improving, maintaining, or declining (all performances above average)

4) Informational cues:

   a. controllable-internal: effort

   b. uncontrollable-internal: ability

   c. uncontrollable-external: ease of job

5) Women as Managers Scale (WAMS)

Dependent variables:

1) Attributions formed for controllability, stability, and locus of causation.

2) Promotion decisions

3) Monetary reward decisions

4) Affect toward employee

5) Expectations for future performance

Manipulation checks:

1) Target employee gender recognition

2) Dependent variables of perceived causes (effort, ability, ease of job)

3) Performance level recognition for target employee

managers over the course of the past year. The files described managers who were exactly equal in overall performance level, but who exhibited different performance trends. Participants also received information which allowed them to infer causes of the observed performance trends of the managers for the past year. This information was expected to affect perceptions of locus of causality (internal/external) and controllability of the observed performance trends.

Participants answered a variety of questions after each presentation of a fictional employee file. These questions included items which measured perceived causality, attributions, and decisions regarding promotions, salary increases, and merit pay bonuses for lower level managers.

Data was collected in groups of 20 to 30 people at a time. Participants received three fictional target employee personnel files when they entered the experiment, plus they received a sample employee file for instructional and familiarization purposes.

Participants first opened the sample file and they read a description of the fictional company and the context within which they were to make their personnel decisions. The researcher then entertained questions regarding the description of the company and the nature of the personnel decision making task.

Next, participants were asked to review a sample of an employee's performance history. The purpose of the sample file was to ensure that participants understood how to read and use graphs, rating forms, and managerial comments which were related to an employee's work history. Again, the researcher entertained questions regarding the use of the employee files for making personnel decisions.

Participants then read one of the three employee files which had been preselected to counterbalance order of presentation of the files. As noted above, these files differed on information regarding the cause of the presented performance trend variable, but they did not differ on gender of the target employee nor on the observed performance trend itself.

After reading through the first of the three employee files, participants answered the first questionnaire in response to that file. The questionnaire consisted of 55 five-point Likert scale questions regarding perceptions of possible causes of the observed performance trend, controllability of causes, stability of causes, locus of causation, expectations for future performance, affect, and personnel decisions. After the questionnaire was completed for the first employee, participants read the next of the remaining employee files which had been preselected for counterbalancing, and answered the same 55 questions for the second employee. This process was repeated for the final remaining employee file.

Answers to questionnaires were recorded on optical scan forms for scoring convenience, and these answers provided data on independent and dependent variables of interest. Certain answers to the questionnaires also functioned as manipulation checks for the experiment.

Once all of the information on the three employee files was collected, participants were asked to answer a second questionnaire. This questionnaire was only answered once since it was not specifically related to the employee files.

The second questionnaire contained 32 questions. Twenty-one of the questions were from the WAMS developed by Terborg et al. (1977), and the last eleven questions consisted of manipulation checks and demographic information.

Participants were asked to answer a total of 165 questions (3 * 55) about the three employee files and another 32 on the second questionnaire. Once the participants completed the questionnaires, they were appropriately debriefed. The debriefing form and the experimental protocol for the instruction and administration of the experimental procedure are presented in Appendix F.

RESULTS

Overview

Results from the study were analyzed in several ways. First, the measurement model for the various scales was established. An exploratory factor analysis was performed on each of the three blocks in the first questionnaire and on the entire second questionnaire. Next reliability analyses were conducted on each of the scales within the questionnaires. Various items were dropped from their respective scales as a result of the factor analyses and reliability analyses. This process was repeated in an iterative fashion until maximally reliable scales were developed which effectively measured the constructs of interest. Once the measurement model was established, analyses of manipulation checks were conducted.

The manipulation checks included participant perceptions regarding the overall level of target employee performance, the perceived gender of the target employee, and perceived causes of performance. Most of the manipulation checks were descriptive, though the perceived causes of performance manipulation check was tested using a doubly multivariate repeated measures MANOVA. The dependent variables for this MANOVA were perceived effort, ability, and ease of job as causes of the observed performance trends. The independent variables were type of performance trend and informational cues presented.

Once the measurement model was established and the manipulation checks proved effective, a variety of analytical techniques were used to test the hypotheses presented earlier. These analyses were done in six steps. First, the effects of performance trend, informational cues, and gender of target employee on personnel decisions were analyzed. Second, the effects of performance trend, informational cues, and gender of target employee on perceived external locus of causation, controllability, and stability were analyzed. Third, the effects of performance trend, informational cues, and gender group membership (same/different) on personnel decisions were analyzed. Fourth, the effects of performance trend, informational cues, and gender group membership (same/different) on perceived external locus of causation, controllability, and stability were analyzed. Fifth, the effects of performance trend and perceived controllability, stability, and external locus on personnel decisions were established using repeated measures regression analyses. Finally, a set of analyses were conducted to investigate the effect of WAMS on attributions and personnel decisions, though specific hypotheses for these analyses were not presented. Hypotheses, relevant constructs, and methods of analysis are presented in Table 4.

Table 4

Hypotheses, Relevant Constructs, and Analyses

Hypothesis	IVs	DVs	Analysis
1 & 2	Performance Trnd	Promotion Pay	MANOVA, ANOVAs, Regression
3-3b	Performance Trnd ExtLocus Causality	Promotion Pay	Regression
4-4b	Performance Trnd Controllability	Promotion Pay	Regression
5	Performance Trnd	Stability	ANOVA, Regression
6	Performance Trnd	Promotion	ANOVA, Regression
7-7d	Informational Cues	Cntrllablty ExtLcs Cslty Stability	MANOVA, ANOVAs
8a-9b	Performance Trnd Gender of Employee	Cntrllablty ExtLcs Cslty Stability	MANOVA, ANOVAs
10-10e	Performance Trnd Gender of Employee Informational Cues	Cntrllablty ExtLcs Cslty Stability	MANOVA, ANOVAs
11-11b	Performance Trnd Gender of Employee	Promotion Pay	MANOVA, ANOVAs
12-13b	Performance Trnd Gender Grp Mmbrship	Cntrllablty ExtLcs Cslty Stability	MANOVA, ANOVAs
14-14e	Performance Trnd Gender Grp Mmbrship Informational Cues	Cntrllablty ExtLcs Cslty Stability	MANOVA, ANOVAs
15-15b	Performance Trnd Gender Grp Mmbrship	Promotion Pay	MANOVA, ANOVAs

Three types of analyses were used to test hypotheses. These included MANOVAs, ANOVAs, and repeated measures regressions. Each of these will be briefly described below, and a more detailed discussion of the repeated measures regression analysis will follow later.

A doubly-multivariate repeated measures MANOVA was performed, using each of the last two sets of dependent variables measured in the first questionnaire. The two sets of dependent variables included 1) attributions (perceived controllability, external locus of causality, and stability); and 2) personnel decisions (expectations for future performance, affect toward target employee, and promotion and pay decisions). The independent variables used in various MANOVAs included participant gender, target employee gender, gender ingroup/outgroup status, performance trend, and informational cues presented. The MANOVA procedure was used to minimize Type I error associated with conducting repeated tests on multiple dependent variables and to take into consideration interrelationships between the dependent variables of interest.

It should be noted, however, that findings involving the specific effects of the independent variables on the dependent variables of interest have to be interpreted with caution when using the MANOVA procedure (Hunter, 1987). In the first step of the MANOVA procedure, independent variables are regressed on the dependent variables; that is to say, the causal direction of the analysis is reversed.

Linear combinations of the dependent variables which predict the independent variables become the dependent variables which are analyzed in subsequent procedures.

This procedure often leads to uninterpretable results, particularly when it is used with intercorrelated dependent variables (Hunter, 1987). For example, $\underline{F}$ tests and effect sizes for each of the dependent variables are influenced by suppressor effects, error of measurement, and problems of collinearity in the dependent variables, much like problems which can occur in discriminant analyses (Hunter, 1987; SPSS, 1988, p. 214, 223). A more appropriate method of analysis is to conduct specific univariate ANOVAs or regressions for each of the dependent variables of interest, particularly when hypotheses suggest specific relations should exist (Hunter, 1987). This was the primary method of analysis for testing most of the hypotheses.

Once the MANOVAs and ANOVAs were conducted, repeated measures regression analyses were employed to support the findings of the MANOVAs and ANOVAs and to test other hypotheses which were untestable using those procedures (Cohen & Cohen, 1983; Hollenbeck, Ilgen, & Sego, in press).

In a repeated measures regression analysis, the variance in the dependent variable is partitioned into between and within-subjects effects. The resulting $\underline{F}$ and $\underline{t}$ tests for the regressions and beta weights are then adjusted to reflect the increment in R^2 as a function of whether the effect is a between or within-subjects variable. The results of these analyses also provide specific tests for differences between cell means.

Some advantages of the repeated measures regression approach are that it effectively uses the degrees of freedom available in a within-subjects design, the power of the $\underline{F}$ test is increased by the method of calculating the $\underline{F}$ ratio, and it provides opportunities to use continuous independent variables without dichotomizing measures. Especially important for this study, repeated measures regression analysis allows one to regress personnel decisions on the actual perceptions of controllability, stability, and external locus of causality provided by the participants in the study. This analysis is similar to a policy capturing study, but in this case, the attributions are the cues which are weighted by the participants in the decision making process. The strength of this approach will become more apparent as the specific analyses are described.

The combination of MANOVAs, ANOVAs, and repeated measures regressions provided reasonable methods for testing the hypotheses presented earlier using the data collected in this study. Each step of the analyses and the results obtained are discussed in the following sections.

In summary, the results of the full study were analyzed in several steps. First, measurements of the constructs of interest were evaluated using exploratory factor analyses and reliability analyses. Second, manipulations were checked using various items and by performing a MANOVA using the nine employee files (collapsed across gender of employee) as independent variables and by using the three dependent variables of perceived causes of performance (effort, ability, ease of job) as manipulation checks. Third, MANOVAs were conducted to test for overall effects in attributions and personnel decisions while controlling for Type I error and intercorrelations in dependent variables, and univariate ANOVAs were conducted to test for specific hypothesized effects. Finally, repeated measures regression analyses were conducted to test all remaining linkages in the model and to provide further tests of various hypotheses.

Establishment of the Measurement Model

The evaluation of the measurement model was conducted using factor analyses, calculation of reliabilities, examination of scale intercorrelations, and examination of parallelism of items within scales with constructs external to the scales.

Analyses of the measurement model included one independent variable scale, and three blocks of dependent variable scales. The independent variable scale was the Women As Managers Scale (WAMS). All other independent variables were either manipulated (e.g. performance trend) or were demographic variables (e.g. gender of participant), so they were not evaluated using factor analyses or reliabilities. The three blocks of dependent variable scales analyzed were: 1) manipulation checks of perceived causes of performance (effort, ability, ease of job), 2) perceived attributions (controllability, stability, and external locus of causation), and 3) personnel decisions (promotion, salary/pay increases, merit pay, positive/negative affect, expectations for future performance). Analyses for the WAMS and each of the dependent variable blocks will be described separately.

WAMS. An examination of the means and standard deviations of the 21 items comprising the WAMS scale indicated that they were within normal ranges for a questionnaire in five point Likert scale format, though some ceiling and floor effects were noted. Participant responses (n = 252) to WAMS items were factor analyzed using a principal components analysis with a varimax rotation. The results of this factor analysis are presented in Table 5.

The factor analysis yielded a three factor solution and the first factor accounted for 52.4% of the variance with an eigenvalue of 10.99. The next two factors had eigenvalues less than 1.5 and each of the factors accounted for less than 7% of the variance. The cross-loadings of each of the items across factors were positive and most were fairly high. Use of eigenvalues greater than one as the extraction criteria for factors has been shown to be too liberal and to result in overfactoring. For this reason, a scree test was employed as the criteria for determining the number of factors in the analysis. The large break in eigenvalues and

Table 5

Factor Analysis on the WAMS

PRINCIPAL-COMPONENTS ANALYSIS (PC)
FINAL STATISTICS:

VAR	COMMUNALITY	*	FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
V1	.67631	*	1	10.99924	52.4	52.4
V2	.56782	*	2	1.31895	6.3	58.7
V3	.48392	*	3	1.08466	5.2	63.8
V4	.76846	*				
V5	.72339	*				
V6	.71610	*				
V7	.49307	*				
V8	.81475	*				
V9	.78947	*				
V10	.69687	*				
V11	.66066	*				
V12	.60298	*				
V13	.62267	*				
V14	.44065	*				
V15	.27170	*				
V16	.63098	*				
V17	.63359	*				
V18	.71826	*				
V19	.62057	*				
V20	.72081	*				
V21	.74983	*				

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3
V16	.76215	.18913	.11973
V6	.74174	.33311	.23443
V17	.71859	.33904	.04760
V18	.71221	.38468	.25108
V21	.70766	.44528	.22530
V1	.69177	.22700	.38241
V20	.67228	.42203	.30124
V3	.65869	.13311	.17982
V2	.51005	.44806	.32696
V15	.42187	.20077	.23111
V9	.37229	.79429	.14136
V4	.32587	.79415	.17776
V8	.38656	.77613	.25089
V5	.37247	.73684	.20427
V10	.06131	.69572	.45725
V19	.46732	.58362	.24813
V14	.42676	.42752	.27524

Table 5 (cont'd)

	FACTOR 1	FACTOR 2	FACTOR 3
V11	.10484	.27359	.75816
V12	.31988	.10047	.70040
V7	.23100	.21903	.62589
V13	.46513	.40760	.49009

FACTOR TRANSFORMATION MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3
FACTOR 1	.67873	.60728	.41297
FACTOR 2	-.73395	.54149	.41001
FACTOR 3	.02537	-.58139	.81323

the high cross-loadings suggested that the WAMS was comprised of a single underlying factor.

An examination of correlations of the items within the WAMS with various external scales and constructs (e.g. gender, attributions, etc.), indicated that they had a high degree of parallelism, also supporting the presence of a single factor solution.

Reliabilities and intercorrelations for each of the three sub-factors identified in the factor analysis were computed. The intercorrelations and reliabilities of these subscales are presented in Table 6. After correction for attenuation, the sub-scale intercorrelations ranged from .819 to .869, again supporting the use of the WAMS as a unidimensional scale.

Item-total correlations, and coefficient alphas were calculated and the results are presented in Table 7. The overall reliability for the scale was high (.95) and only three items would slightly increase the obtained reliability if they were removed, again suggesting a single factor solution. Given that the WAMS was designed to measure a unidimensional construct, and based on the results of the above analyses, it was determined that the WAMS scale measured a single construct with high reliability.

These findings support previous research using the WAMS as a measure of stereotypical attitudes toward women as managers (e.g. Peters, et al., 1973). All items were

Table 6

Intercorrelations of WAMS Sub-scales

WAMS1 = Items V1-V3, V6, V15-V18, V20-V21

(alpha=.917, 10 items)

WAMS2 = Items V4-V5, V8-V10, V14, V19

(alpha=.905, 7 items)

WAMS3 = Items V7, V11-V13

(alpha=.752, 4 items)

Sub-scale Intercorrelations

	WAMS1	WAMS2	WAMS3
WAMS1	1.0000	.7919**	.6980**
WAMS2	.8693[a]	1.0000	.6753**
WAMS3	.8405[a]	.8186[a]	1.0000

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

Note: [a] indicates the correlations reported below the diagonal are corrected for attenuation due unreliability in measurement.

Table 7

Reliability Analysis for the WAMS

	ITEM	MEAN	STD DEV	CASES
1.	V1	4.3611	.9983	252.0
2.	V2	4.1786	.9168	252.0
3.	V3	4.1746	1.0301	252.0
4.	V4	4.5595	.7524	252.0
5.	V5	4.5040	.7548	252.0
6.	V6	4.4008	.8666	252.0
7.	V7	4.1349	1.1594	252.0
8.	V8	4.4841	.7386	252.0
9.	V9	4.5437	.7211	252.0
10.	V10	4.4484	.8042	252.0
11.	V11	3.6349	1.2408	252.0
12.	V12	3.6429	1.1704	252.0
13.	V13	4.2262	.9862	252.0
14.	V14	4.1706	1.0705	252.0
15.	V15	3.8492	1.1745	252.0
16.	V16	4.2857	.9685	252.0
17.	V17	4.4683	.8626	252.0
18.	V18	4.4127	.8950	252.0
19.	V19	4.2897	.9273	252.0
20.	V20	4.3929	.8794	252.0
21.	V21	4.4127	.8304	252.0

OF CASES = 252.0

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
WAMS	89.5754	193.6955	13.9175	21

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V1	85.2143	173.2447	.7403	.6352	.9429
V2	85.3968	175.4515	.7166	.6174	.9434
V3	85.4008	177.2531	.5608	.4177	.9458
V4	85.0159	178.4778	.7288	.7178	.9436
V5	85.0714	178.2499	.7381	.7215	.9435
V6	85.1746	175.3001	.7689	.6983	.9427
V7	85.4405	176.3431	.5199	.3887	.9469*
V8	85.0913	177.4458	.7980	.7967	.9428
V9	85.0317	178.8675	.7418	.7212	.9436
V10	85.1270	179.7766	.6154	.5676	.9448
V11	85.9405	174.9168	.5253	.4299	.9472*
V12	85.9325	175.5532	.5408	.4289	.9466
V13	85.3492	173.4314	.7427	.6208	.9429
V14	85.4048	174.9271	.6223	.4626	.9449

Table 7 (cont'd)

V15	85.7262	177.6658	.4679	.3041	.9479*
V16	85.2897	176.2305	.6427	.5544	.9444
V17	85.1071	177.6259	.6666	.6127	.9441
V18	85.1627	174.2882	.7873	.7401	.9424
V19	85.2857	174.9220	.7303	.6505	.9431
V20	85.1825	174.1418	.8092	.7483	.9421
V21	85.1627	175.1567	.8121	.7919	.9423

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENT 21 ITEMS
ALPHA = .9467 STANDARDIZED ITEM ALPHA = .9526

retained and composite scores based on the sum of participant responses across all 21 items were computed. The means, standard deviations, and reliabilities of all final scales used in subsequent analyses will be presented later.

Perceived causes of performance scales. The perceived causes of performance scales were designed to determine if the information in the fictional employee files effectively manipulated the perceived causes of performance. These scales included measurements of whether the participants perceived a target employee's performance to be due to the high or low ability of the employee, high or low effort of the employee, or high or low ease of the job for the employee.

Since the study was a repeated measures design, each participant rated three different target employees on the different perceived causes of performance. Thus, three separate factor analyses could be conducted, one for each set of ratings provided by participants. The selection of participant responses for factor analyses were based upon the order in which they provided their answers. The responses of the participants to the first target employee presented were the first set of items which were factor analyzed.

Similarly, participant responses to the second and third target employees presented were the second and third sets of items which were factor analyzed. Some participants failed to properly note the order of their responses, so the usable sample size varied by analysis (n = 208, 195, and 192 for the first, second, and third sets of ratings, respectively). The item means and variances across all three sets of ratings were within acceptable ranges for scales presented in 5-point Likert format. The results of all three factor analyses were highly similar. For presentational purposes, only the results of the first factor analyses will be presented.

When using eigenvalues greater than one as the factor extraction criteria, the factor analysis for the first set of responses yielded a two-factor solution, with most of the ability and ease of job items loading on one factor and mostly effort items loading on the second factor. These results are presented in Table 8. In the second and third factor analyses, similar results were obtained, though the patterns of loadings for the ease of job items differed slightly. Because each of the perceived causes of performance were simultaneously manipulated in the study, it is not particularly surprising that items within each of the scales tended to covary with one another.

When a factor analysis with a three factor solution was computed, every item loaded on the factor which corresponded to the scale for which that item was written. This was true for all three sets of factor analyses computed with a three factor solution. The results of the three factor solution

Table 8

Factor Analysis on the Perceived Causes of Performance

PRINCIPAL-COMPONENTS ANALYSIS (PC)
FINAL STATISTICS:

VAR	COMMUNALITY*		FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
V1	.74432	*	1	4.08919	45.4	45.4
V2	.69245	*	2	2.51976	28.0	73.4
V3	.77987	*				
V4	.59919	*				
V5	.74661	*				
V6	.84405	*				
V7	.75980	*				
V8	.70116	*				
V9	.74150	*				

ROTATED FACTOR MATRIX:

E = Perceived high or low effort as a cause of observed performance
A = Perceived high or low ability as a cause of observed performance
JE = Perceived high or low ease of job as a cause of observed performance

	FACTOR 1	FACTOR 2
V6(E)	.91717	-.05346
V3(E)	.88197	-.04458
V7(E)	.87164	-.00665
V9(JE)	-.68445	-.52252
V5(A)	-.05619	.86224
V1(A)	-.22466	.83298
V8(A)	.11955	.82878
V2(JE)	-.55862	-.61677
V4(JE)	-.49616	-.59416

FACTOR TRANSFORMATION MATRIX:

	FACTOR 1	FACTOR 2
FACTOR 1	.77952	.62637
FACTOR 2	-.62637	.77952

with the first set of responses are presented in Table 9. The three factors obtained corresponded to effort, ability, and ease of job scales.

Computation of reliabilities for the three sets of participant responses were conducted in a fashion similar to the way the factor analyses were done. Participant responses to the first, second, or third target employee were selected separately and reliabilities were then calculated. Alphas for each of the scales (effort, ability, ease of job) ranged from .86 to .96 across all three sets of analyses. There were only two cases in which reliabilities might be slightly improved if an item was deleted, but this pattern was inconsistent across the three sets of participant responses analyzed. The content of the items in combination with the high reliabilities suggest that three different perceived causes of performance were being measured and manipulated. Further support was found by examining the parallelism of the items in their correlations with other scales.

Scale scores were computed on the basis of the three factor solution and intercorrelations were calculated. This was done three times, once for each set of participant responses. Similar findings were obtained across all three sets of participant responses and only the results of the first set will be presented in Table 10. After correction for unreliability, the correlations between ability, effort, and ease of job scales ranged from -.044 to -.590 for the

Table 9

Three Factor Solution for Perceived Causes of Performance

PRINCIPAL-COMPONENTS ANALYSIS (PC)
FINAL STATISTICS:

VAR	COMMUNALITY*		FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
V1	.74820	*	1	4.08919	45.4	45.4
V2	.72678	*	2	2.51976	28.0	73.4
V3	.81733	*	3	.70744	7.9	81.3
V4	.84869	*				
V5	.85533	*				
V6	.90387	*				
V7	.79176	*				
V8	.79449	*				
V9	.82993	*				

ROTATED FACTOR MATRIX:

E = Perceived high or low effort as a cause of observed performance
A = Perceived high or low ability as a cause of observed performance
JE = Perceived high or low ease of job as a cause of observed performance

	EFFORT	ABILITY	EASEJOB
V6(E)	.93030	-.03313	-.19314
V3(E)	.87555	-.04638	-.22045
V7(E)	.85504	-.01965	-.24554
V5(A)	-.01628	.91293	-.14704
V8(A)	.13388	.85167	-.22634
V1(A)	-.27941	.77611	-.26034
V4(JE)	-.14751	-.21035	.88470
V9(JE)	-.41263	-.22567	.78022
V2(JE)	-.33751	-.37670	.68627

FACTOR TRANSFORMATION MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3
FACTOR 1	.61392	.45012	-.64846
FACTOR 2	-.65743	.74625	-.10442
FACTOR 3	.43691	.49042	.75406

Table 10

Intercorrelations of the Perceived Causes of Performance

EASEJOB = Items V2, V4, V9 (alpha=.853, 3 items)

ABILITY = Items V1, V5, V8 (alpha=.855, 3 items)

EFFORT = Items V3, V6, V7 (alpha=.914, 3 items)

	EFFORT	ABILITY	EASEJOB
EFFORT	1.0000	-.0388	-.5210**
ABILITY	-.0439[a]	1.0000	-.4850**
EASEJOB	-.5900[a]	-.5679[a]	1.0000

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

Note: [a] indicates the correlations reported below the diagonal are corrected for attenuation due unreliability in measurement.

first set of responses. The moderate correlations suggest that it is appropriate to use the different scales to measure different perceived causes of performance.

These scales function primarily as manipulation checks to ensure the employee files effectively manipulated perceived causation in the desired manner. Three sets of scores were computed for each of the perceived causes by summing across items comprising each of the scales. Thus, each participant had nine total composite scores for perceived cause of performance: effort (first, second, third target employee); ability (first, second, third target employee); and job ease (first, second, third target employee). The means, standard deviations, and reliabilities of these scales will be presented later.

Perceived attributions scales. The perceived attributions scales were designed to measure whether the causes of observed performances were perceived to be high or low in controllability, high or low in stability, and internally or externally caused.

As noted earlier, the study was a repeated measures design, so each participant rated three different target employees on the different attributions for performance. Thus, three separate factor analyses were computed, one for each set of attribution ratings provided by participants. The selection of participant responses for factor analyses were based upon the order in which they provided their answers. Also noted above, some participants failed to properly note the order of their responses, so the usable sample size varied by analysis (n = 208, 195, and 192 for the first, second, and third sets of ratings, respectively). The item means and variances across all three sets of ratings were within acceptable ranges for scales presented in 5-point Likert format. The results of all three factor analyses were highly similar. As before, only the results of the first factor analyses will be presented.

The factor analyses for the first set of participant responses yielded a four-factor solution, with most of the items loading on the factor for which they were written to measure. These results are presented in Table 11. In the second and third factor analyses, similar results were obtained, though the patterns of loadings for some of the items differed slightly. In all three analyses, items V16, V10, and V19 (reverse worded controllability items) tended to create a factor separate from the main controllability dimension for which they were written to measure. The four factors obtained corresponded to the external locus, controllability, stability attributions, with the problematic controllability items creating the fourth factor.

Computation of reliabilities were done in a fashion similar to the method used to conduct factor analyses. Participant responses to the first, second, or third target employee were selected separately and reliabilities were then calculated. Alphas for each of the scales (perceived

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Table 11

<u>Factor Analysis on the Attributions of Causes of Performance</u>

PRINCIPAL-COMPONENTS ANALYSIS (PC)
FINAL STATISTICS:

VAR	COMMUNALITY*		FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
V10	.32050	*	1	4.98546	27.7	27.7
V11	.47552	*	2	2.09665	11.6	39.3
V12	.57327	*	3	1.82477	10.1	49.5
V13	.53280	*	4	1.21787	6.8	56.2
V14	.56166	*				
V15	.42985	*				
V16	.62548	*				
V17	.60198	*				
V18	.51839	*				
V19	.72723	*				
V20	.58492	*				
V21	.51277	*				
V22	.62613	*				
V23	.53124	*				
V24	.67761	*				
V25	.56061	*				
V26	.65693	*				
V27	.60786	*				

ROTATED FACTOR MATRIX:

EL = Perceived external or internal locus of causation for observed performance
C = Perceived high or low controllability of causation for observed performance
S = Perceived high or low stability of causation for observed performance

	EXTLOCUS	CONTROL	STABILITY	CONTROL2
V12(EL)	.74579	-.05404	.11658	.02362
V20(EL)	.74526	-.16755	-.03052	.02244
V22(EL)	.74367	-.26565	-.05002	-.00166
V14(EL)	.71677	-.15058	.03026	.15590
V25(EL)	.67563	-.27258	-.15674	.07260
V17(C)	-.58256	.49314	-.07093	.11988

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Table 11 (cont'd)

	EXTLOCUS	CONTROL	STABILITY	CONTROL2
V13(C)	-.08946	.72117	-.05147	.04535
V24(C)	-.39485	.72052	-.03352	.03783
V27(C)	-.32579	.68705	-.15016	-.08447
V21(C)	-.45282	.54586	-.05439	.08242
V26(S)	-.20054	-.31381	.65385	.30119
V23(S)	.21599	-.13622	.65321	.19834
V18(S)	-.06401	.14741	.63928	-.28962
V15(S)	-.20227	-.10949	.60906	-.07745
V11(S)	.36884	.04644	.57871	-.04908
V19(C)	.05519	-.09922	-.06508	.84268
V16(C)	.07504	.07874	.02842	.78284
V10(C)	-.01337	.35680	.01462	.43909

FACTOR TRANSFORMATION MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
FACT 1	.80446	-.58073	.11704	.04359
FACT 2	-.27801	-.20529	.93223	-.10735
FACT 3	.05950	.18923	.17056	.96517
FACT 4	.52155	.76472	.29693	-.23455

controllability, perceived stability, and perceived external locus of causation) ranged from .64 to .93 across all three sets of analyses.

Table 12 presents the results of the reliability analyses conducted on the first set of participant responses to items designed to measure attributions. Results across the three sets of participant responses indicated that removal of items V10, V16, and V19 consistently tended to improve the reliabilities of the perceived controllability scale. These were the same items which created their own factor in the factor analyses. Almost all the other items improved the reliabilities of the scale for which they were written.

Based on the results of the reliability and factor analyses, Items V10, V16, and V19 were removed from all further analyses. Scale scores were computed for the three attributions (controllability, stability, and external locus of causation) and intercorrelations were calculated. This was done three times, once for each set of participant responses. Similar findings were obtained across all three sets of participant responses and only the results of the first set will be presented in Table 13.

After correction for unreliability, the correlations between perceived controllability, external locus of causation, and stability ranged from .073 to -.751 for the first set of responses. While the corrected correlation

Table 12

Reliability Analyses for the Attribution Scales

Perceived Controllability of Cause of Performance Scale

	ITEM	MEAN	STD DEV	CASES
1.	V10	3.1731	.9524	208.0
2.	V13	2.7885	.9395	208.0
3.	V16	3.4135	.8525	208.0
4.	V17	3.0192	1.0855	208.0
5.	V19	3.2837	.9122	208.0
6.	V21	2.9760	.9900	208.0
7.	V24	2.9952	1.0745	208.0
8.	V27	3.1971	1.0743	208.0

OF CASES = 208.0

STATISTICS FOR CONTROL	MEAN	VARIANCE	STD DEV	# OF VARIABLES
	24.8462	21.0004	4.5826	8

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V10	21.6731	17.8250	.2821	.1360	.7145
V13	22.0577	16.7020	.4448	.2488	.6824
V16	21.4327	18.9037	.1848	.2860	.7292*
V17	21.8269	14.9651	.5783	.4490	.6492
V19	21.5625	19.2618	.1132	.3189	.7437*
V21	21.8702	15.9106	.5204	.3687	.6654
V24	21.8510	14.7071	.6235	.5532	.6382
V27	21.6490	15.5429	.5080	.4740	.6666

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENTS 8 ITEMS
ALPHA = .7175 STANDARDIZED ITEM ALPHA = .7048

Perceived External Locus of Causation of Performance Scale

	ITEM	MEAN	STD DEV	CASES
1.	V12	2.7692	.9950	208.0
2.	V14	3.0288	1.0211	208.0
3.	V20	2.8606	1.1483	208.0
4.	V22	3.0000	1.1207	208.0
5.	V25	2.9135	1.1886	208.0

OF CASES = 208.0

Table 12 (cont'd)

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
EXTLOCUS	14.5721	17.8788	4.2283	5

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V12	11.8029	12.7387	.5843	.3950	.8068
V14	11.5433	12.5972	.5848	.3874	.8065
V20	11.7115	11.4913	.6511	.4498	.7878
V22	11.5721	11.4151	.6877	.5112	.7769
V25	11.6587	11.4143	.6290	.4355	.7951

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENTS 5 ITEMS
ALPHA = .8291 STANDARDIZED ITEM ALPHA = .8294

Perceived Stability of Cause of Performance Scale

	ITEM	MEAN	STD DEV	CASES
1.	V11	2.8606	1.0332	208.0
2.	V15	3.4087	.9384	208.0
3.	V18	2.8894	.9285	208.0
4.	V23	3.2933	.9758	208.0
5.	V26	3.2163	.9663	208.0

OF CASES = 208.0

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	# OF ALPHA IF ITEM DELETED
V11	12.8077	6.7648	.3226	.1209	.6182
V15	12.2596	6.8791	.3669	.1819	.5938
V18	12.7788	6.9364	.3614	.1625	.5964
V23	12.3750	6.4094	.4461	.2512	.5545
V26	12.4519	6.4035	.4557	.2512	.5500

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENTS 5 ITEMS
ALPHA = .6364 STANDARDIZED ITEM ALPHA = .6376

Table 13

Intercorrelations of the Attributions Scales

CONTROL = Items V13, V17, V21, V24, V27

(alpha=.816, 5 items)

EXTLOCUS= Items V12, V14, V20, V22, V25

(alpha=.829, 5 items)

STABLE = Items V11, V15, V18, V23, V26

(alpha=.636, 5 items)

	CONTROL	EXTLOCUS	STABLE
CONTROL	1.0000	-.6176**	-.2013**
EXTLOCUS	-.7509[a]	1.0000	.0532
STABLE	-.2794[a]	.0733[a]	1.0000

* - Signif. LE .05   ** - Signif. LE .01   (2-tailed)

Note: [a] indicates the correlations reported below the diagonal are corrected for attenuation due unreliability in measurement.

between external locus and controllability was fairly high, this would be expected since by definition, external causes of performance are also uncontrollable. Also, the correlation between controllability and external locus of causation was smaller in the second and third sets of participant responses (-.598, -.643, corrected for unreliability).

The factor analyses, reliabilities, and intercorrelations between the scales support the notion that the different scales measure conceptually distinct attributions. Thus, all three attributional dimensions were retained for further analyses. Three sets of participant scores were computed for each of the three perceived attributions by summing across items comprising each of the attributional scales. Each participant had nine total composite scores for perceived attributions for causes of performance: perceived controllability (first, second, third target employee); perceived stability (first, second, third target employee); and perceived external locus of causation (first, second, third target employee). The means, standard deviations, and reliabilities of these scales will be presented later.

Personnel decisions scales. The personnel decisions scales were designed to measure whether the participants would be willing to award promotions, pay increases, or merit pay bonuses to a target employee. They were also designed to measure positive or negative affect toward the target employees, and expectations for the future performance of those employees.

As before, each participant rated three different target employees on the different personnel decisions they might make based on the observed performance and the observed causes of performance. Three separate factor analyses were conducted, one for each set of personnel decisions provided by participants. As before, the selection of participant responses for factor analyses were based upon the order in which they provided their answers, and the usable sample size varied by analysis ($\underline{n}$ = 208, 195, and 192). The results of all three factor analyses were highly similar. For presentational purposes, only the results of the first factor analyses will be presented.

The factor analyses on the first set of participant decisions yielded a four-factor solution. Most of the items loaded on the factor for which they were written to measure, with the exception of the pay raise and merit pay items, which tended to load onto the same factor. These results are presented in Table 14. The obtained factors corresponded to affect, promotion, pay, and expected future performance personnel decisions.

Computation of reliabilities was done by selecting participant responses to the first, second, or third target employee. Alphas for each of the scales (promotion, pay raise, merit pay, affect, expectation) ranged from .82 to .94 across all three sets of analyses.

Table 14

Factor Analysis on the Personnel Decisions Scales

PRINCIPAL-COMPONENTS ANALYSIS (PC)
FINAL STATISTICS:

VAR	COMMUNALITY*		FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
V28	.72622	*	1	11.53886	46.2	46.2
V29	.52665	*	2	2.12779	8.5	54.7
V30	.48206	*	3	1.64898	6.6	61.3
V31	.73667	*	4	1.08887	4.4	65.6
V32	.71579	*				
V33	.76906	*				
V34	.71369	*				
V35	.50533	*				
V36	.75448	*				
V37	.61678	*				
V38	.64511	*				
V39	.55653	*				
V40	.70320	*				
V41	.70455	*				
V42	.74265	*				
V43	.56970	*				
V44	.62049	*				
V45	.62489	*				
V46	.77090	*				
V47	.63602	*				
V48	.70873	*				
V49	.71897	*				
V50	.65377	*				
V51	.64396	*				
V52	.55830	*				

ROTATED FACTOR MATRIX:

A = Positive affect toward the target employee
E = Positive expectations of future performance of the target employee
PR = Positive pay raise decisions for the target employee
PM = Positive promotion decisions for the target employee
MP = Positive merit pay decisions for the target employee

	AFFECT	PROMOTION	PAY	EXPECT
V51(A)	.71869	.14651	.18556	.26746
V40(A)	.69844	.30340	.29264	.19414
V47(A)	.69415	.35327	.17010	.02107
V37(A)	.68122	.15178	.32177	.16169
V35(A)	.66742	.17724	-.01790	.16778
V45(A)	.61537	.21040	.33811	.29600

Table 14 (cont'd)

	AFFECT	PROMOTION	PAY	EXPECT
V48(P)	.58669	.42352	.39700	.16597
V52(E)	.55324	.22422	.31598	.31955
V50(MP)	.53474	.25442	.51978	.18144
V43(MP)	.53005	.20019	.48630	.11039
V33(PM)	.13852	.85850	.10058	.05228
V28(PM)	.22585	.78782	.13251	.19233
V46(PM)	.30004	.76972	.08591	.28465
V49(PM)	.25136	.74514	.19126	.25293
V42(PM)	.29345	.74164	.10729	.30820
V31(PR)	.12962	.01140	.72754	.43638
V32(PR)	.22317	.04312	.71267	.39525
V30(MP)	.13155	.16498	.65960	-.04966
V38(PR)	.32159	.07994	.62680	.37739
V36(MP)	.55022	.27857	.60971	.04887
V29(PR)	.35756	.43046	.45595	-.07496
V34(E)	.05941	.21203	.07992	.81168
V41(E)	.26269	.26349	.12610	.74177
V44(E)	.23813	.22902	.20620	.68470
V39(E)	.42297	.12863	.26283	.54038

FACTOR TRANSFORMATION MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4
FACT 1	.62001	.48250	.47633	.39483
FACT 2	-.14849	.81160	-.55865	-.08468
FACT 3	-.41878	-.07032	-.12673	.89645
FACT 4	-.64666	.32180	.66705	-.18254

Table 15 presents the results of the reliability analyses conducted on the first set of participant responses to items designed to personnel decisions, affect, and expectations. Results indicated that removal of various items would improve the reliabilities of various scales, but these results were inconsistent across the different sets of participant responses.

Scale scores were computed for the five different scales (promotion, pay raise, merit pay, affect, and expectations) and intercorrelations were calculated. This was done three times, once for each set of participant responses. Similar findings were obtained across all three sets of participant responses and only the results of the first set will be presented in Table 16. The correlation between merit pay and pay raise decisions was .932 after correction for unreliability, which was consistent with the results of the factor analyses. The correlations between affect and pay raise and merit pay decisions were high, but the results of the factor analyses suggested they were measuring different constructs. Furthermore, while affect might be expected to be strongly related to various personnel decisions, this does not imply that affect and pay decisions are the same construct.

The factor analyses, reliabilities, and intercorrelations between the scales support the notion that the different scales measure conceptually distinct personnel decisions and responses, with the exception of merit pay and

Table 15

Reliability Analyses for the Personnel Decisions Scales

Positive Promotion Decisions Scale

	ITEM	MEAN	STD DEV	CASES
1.	V28	2.6827	1.1273	208.0
2.	V33	2.4375	1.0839	208.0
3.	V42	2.5962	1.0404	208.0
4.	V46	2.7212	1.0628	208.0
5.	V49	2.8125	1.2427	208.0

 # OF CASES = 208.0

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
PROMOTE	13.2500	23.0193	4.7978	5

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V28	10.5673	14.8650	.7919	.6404	.8910
V33	10.8125	15.4768	.7467	.5864	.9002
V42	10.6538	15.5318	.7810	.6175	.8938
V46	10.5288	15.1586	.8133	.6768	.8872
V49	10.4375	14.2280	.7730	.6238	.8968

*** These are items in which alpha would get higher if they were removed from the scale.**

RELIABILITY COEFFICIENTS 5 ITEMS
ALPHA = .9132 STANDARDIZED ITEM ALPHA = .9146

Positive Pay Raise Decisions Scale

	ITEM	MEAN	STD DEV	CASES
1.	V29	3.3125	1.2291	208.0
2.	V31	4.2019	.8091	208.0
3.	V32	4.2356	.8149	208.0
4.	V38	4.2019	.7340	208.0
5.	V48	3.2740	1.2106	208.0

 # OF CASES = 208.0

Table 15 (cont'd)

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V29	15.9135	8.6591	.5271	.4319	.8216*
V31	15.0240	10.0043	.6493	.7336	.7764
V32	14.9904	9.8550	.6770	.7328	.7692
V38	15.0240	10.4390	.6335	.4956	.7848
V48	15.9519	7.8238	.6930	.5652	.7594

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENTS 5 ITEMS
ALPHA = .8179 STANDARDIZED ITEM ALPHA = .8415

Positive Merit Pay Decisions Scale

	ITEM	MEAN	STD DEV	CASES
1.	V30	3.7019	.9568	208.0
2.	V36	3.5048	1.1378	208.0
3.	V43	3.6731	1.0672	208.0
4.	V50	3.7788	1.0809	208.0

OF CASES = 208.0

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
MERIT PAY	14.6587	11.9747	3.4604	4

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V30	10.9567	8.4087	.4776	.2511	.8575*
V36	11.1538	6.2274	.7841	.6314	.7237
V43	10.9856	6.9998	.6793	.5314	.7760
V50	10.8798	6.8309	.7037	.5112	.7645

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENTS 4 ITEMS
ALPHA = .8303 STANDARDIZED ITEM ALPHA = .8265

Table 15 (cont'd)

Positive Expectations for Future Performance Scale

	ITEM	MEAN	STD DEV	CASES
1.	V34	3.4615	1.0302	208.0
2.	V39	3.8029	.9297	208.0
3.	V41	3.4615	1.0488	208.0
4.	V44	3.4087	.9836	208.0
5.	V52	3.5577	.9959	208.0

OF CASES = 208.0

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
EXPECT	17.6923	15.0740	3.8825	5

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V34	14.2308	9.9948	.6168	.4961	.8099
V39	13.8894	10.4177	.6318	.4123	.8060
V41	14.2308	9.4151	.7083	.5338	.7832
V44	14.2837	9.8080	.6977	.4899	.7872
V52	14.1346	10.5712	.5421	.3770	.8297

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENTS 5 ITEMS
ALPHA = .8366 STANDARDIZED ITEM ALPHA = .8369

Positive Affect Toward for Future Performance Scale

	ITEM	MEAN	STD DEV	CASES
1.	V35	3.6731	.8840	208.0
2.	V37	3.5625	1.1060	208.0
3.	V40	3.3942	1.0625	208.0
4.	V45	3.7981	1.0061	208.0
5.	V47	2.8990	1.1482	208.0
6.	V51	3.5962	1.0074	208.0

OF CASES = 208.0

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
AFFECT	20.9231	23.9457	4.8934	6

Table 15 (cont'd)

ITEM	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM-TOTAL CORRLTN	SQUARED MULTIPLE CORRLTN	ALPHA IF ITEM DELETED
V35	17.2500	18.7585	.5754	.3666	.8704
V37	17.3606	16.4636	.6974	.5161	.8510
V40	17.5288	16.3180	.7571	.5863	.8402
V45	17.1250	17.3370	.6680	.4679	.8559
V47	18.0240	16.2458	.6895	.5002	.8529
V51	17.3269	17.1390	.6944	.4895	.8515

* These are items in which alpha would get higher if they were removed from the scale.

RELIABILITY COEFFICIENTS 6 ITEMS
ALPHA = .8753 STANDARDIZED ITEM ALPHA = .8753

Table 16

Intercorrelations of Personnel Decisions Scales

PROMOTE = Items V28, V33, V42, V46, V49

(alpha=.913, 5 items)

PAY RAISE= Items V29, V31, V32, V38, V48

(alpha=.818, 5 items)

MERIT PAY= Items V30, V36, V43, V50

(alpha=.830, 5 items)

EXPECT = Items V34, V39, V41, V44, V52

(alpha=.837, 5 items)

AFFECT = Items V35, V37, V40, V45, V47, V51

(alpha=.875, 6 items)

	PROMOTE	PAY	MERIT	EXPECT	AFFECT
PROMOTE	1.0000	.5605**	.5173**	.5668**	.6107**
PAY	.6486[a]	1.0000	.7676**	.6463**	.7367**
MERIT	.5942[a]	.9316[a]	1.0000	.5715**	.7369**
EXPECT	.6484[a]	.7811[a]	.6857[a]	1.0000	.6395**
AFFECT	.6833[a]	.8708[a]	.8647[a]	.7473[a]	1.0000

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

Note: [a] indicates the correlations reported below the diagonal are corrected for attenuation due unreliability in measurement.

pay raise decisions. The merit pay and pay raise decisions appear to be tapping into the same construct, as evidenced by the results of the factor analyses and scale intercorrelations. Thus, four major personnel decision scales were retained for further analyses, and these scales corresponded with the factors obtained in the factor analyses. Three sets of participant scores were computed for each of the four personnel decision scales by summing across items comprising those scales. Each participant had twelve total composite scores for personnel decisions: positive promotion decisions (first, second, third target employee); positive pay decisions (first, second, third target employee); positive affect (first, second, third target employee) and positive expectations for future performance (first, second, third target employee).

The means, standard deviations, and reliabilities of all scales are presented in Table 17. The reliabilities of the scales are all very high, with the exception of the perceived stability of the cause of performance scale, which has alphas which ranged from .64 to .73.

Since the original data set was configured in the order of participant responses, participant scores had to be reordered to reflect the manipulation of informational cues to run the MANOVA and ANOVA analyses. Table 18 contains the descriptions of the variables used in the MANOVA and ANOVA analyses. These are the variables which were obtained by reconfiguring the data set based upon informational cues.

Table 17

Means, Standard Deviations and Reliabilities of All Scales

SCALE	MEAN	STDDEV	ALPHA	No. of ITEMS
WAMS	89.58	13.92	.947	21
Set 1 - First Presented Target Employee				
Effort	9.29	3.77	.914	3
Ability	8.92	3.07	.855	3
Easejob	7.47	3.24	.853	3
Control	14.98	3.92	.816	5
ExtLocus	14.57	4.23	.829	5
Stability	15.67	3.09	.636	5
Promotion	13.25	4.80	.913	5
Pay	33.88	6.77	.895	9
Expect	17.69	3.88	.837	5
Affect	20.92	4.89	.875	6
Set 2 - Second Presented Target Employee				
Effort	9.31	3.96	.951	3
Ability	8.93	3.34	.875	3
Easejob	7.72	3.46	.918	3
Control	15.50	4.00	.811	5
ExtLocus	14.05	4.61	.882	5
Stability	16.57	3.03	.659	5
Promotion	14.37	5.54	.941	5
Pay	33.43	7.22	.919	9
Expect	17.98	4.04	.863	5
Affect	21.16	5.11	.898	6
Set 3 - Third Presented Target Employee				
Effort	8.20	3.97	.963	3
Ability	8.33	3.59	.923	3
Easejob	8.70	3.94	.920	3
Control	14.24	4.65	.874	5
ExtLocus	14.82	5.46	.934	5
Stability	16.66	3.40	.731	5
Promotion	13.75	5.73	.940	5
Pay	31.97	9.05	.951	9
Expect	17.07	4.61	.899	5
Affect	20.31	6.20	.939	6

Table 18

Descriptions of Measured Variables Used in MANOVA and ANOVA

1. Tgender = Gender of fictional target employee (0=male, 1=female)
2. Gendprt = Gender of participant providing responses (0=male, 1=female)
3. Samediff = Ingroup/outgroup gender (0=different gender, 1=same gender)
4. WAMS = Attitudes toward women as managers (higher number indicates more positive attitudes)
5. Ability1 = Perceived ability in response to ability information provided
6. Effort1 = Perceived effort in response to ability information provided
7. Easejob1 = Perceived ease of job in response to ability information provided
8. ExtLocs1 = Perceived external locus of causality in response to ability information provided
9. Control1 = Perceived controllability in response to ability information provided
10. Stable1 = Perceived stability in response to ability information provided
11. Affect1 = Positive affect in response to ability information provided
12. Expect1 = Positive expectations for future performance in response to ability information provided
13. Promote1 = Positive promotion decisions made in response to ability information provided
14. Pay1 = Positive pay decisions made in response to ability information provided
15. Ability2 = Perceived ability in response to effort information provided
16. Effort2 = Perceived effort in response to effort information provided
17. Easejob2 = Perceived ease of job in response to effort information provided
18. ExtLocs2 = Perceived external locus of causality in response to effort information provided
19. Control2 = Perceived controllability in response to effort information provided
20. Stable2 = Perceived stability in response to effort information provided
21. Affect2 = Positive affect in response to effort information provided
22. Expect2 = Positive expectations for future performance in response to effort information provided
23. Promote2 = Positive promotion decisions made in response to effort information provided

Table 18 (cont'd)

24. Pay2 = Positive pay decisions made in response to effort information provided
25. Ability3 = Perceived ability in response to ease of job information provided
26. Effort3 = Perceived effort in response to ease of job information provided
27. Easejob3 = Perceived ease of job in response to ease of job information provided
28. ExtLocs3 = Perceived external locus of causality in response to ease of job information provided
29. Control3 = Perceived controllability in response to ease of job information provided
30. Stable3 = Perceived stability in response to ease of job information provided
31. Affect3 = Positive affect in response to ease of job information provided
32. Expect3 = Positive expectations for future performance in response to ease of job information provided
33. Promote3 = Positive promotion decisions made in response to ease of job information provided
34. Pay3 = Positive pay decisions made in response to ease of job information provided

Table 19 contains the means, standard deviations, and intercorrelations of all measured variables used in those analyses. The sample size for each correlation ranged from 252 to 256.

Many of the correlations were significant, but they carry little interpretive substance without further analyses because many are the result of the manipulations provided in the study. For example, the fact that Effort1 is negatively correlated with Effort2 (-.68) and positively correlated with Effort3 (.68) is a product of the informational cues provided in the employee files (see Table 1).

Also, the correlations between the personnel decisions and attributions, and between perceived causes and attributions are uninterpretable without further analyses because they too are the product of manipulations. Furthermore, the effects of hypothesized interactions are masked when viewing the zero-order correlations.

For example, the correlation between Effort1 and Control1 was -.17. This correlation suggests the more effort the employee was perceived as exerting, the less controllable the cause of observed performance. This finding would be puzzling, but when one realizes that both, high AND low effort can be related to perceived controllability, simple explanations become possible. For example, a group of participants might view low effort which leads to declining performance as highly controllable. In this case, the correlation between effort and perceived

Table 19

Means, Standard Deviations and Intercorrelations of All Measured Variables, Configured by Informational Cues Provided

	Scale	Mean	StdDev	1	2	3	4
1.	Tgender	.504	.501	.-			
2.	Gendprt	.551	.498	.05	.-		
3.	Samediff	.523	.500	.10	.00	.-	
4.	WAMS	89.575	13.918	.05	$.56^{b}$	.00	.-
5.	Ability1	10.160	3.410	.04	.04	-.04	$.13^{a}$
6.	Effort1	8.180	3.215	-.02	-.02	.00	-.03
7.	Easejob1	7.379	2.867	.01	-.09	.03	$-.23^{b}$
8.	ExtLocs1	12.867	3.886	-.03	-.08	.01	$-.19^{b}$
9.	Control1	14.867	3.738	-.04	.03	-.09	.04
10.	Stable1	16.807	3.226	.03	.09	.01	.01
11.	Affect1	21.451	4.421	-.07	.00	-.01	$.21^{b}$
12.	Expect1	17.808	3.992	.04	.05	-.05	$.31^{b}$
13.	Promote1	14.475	5.031	-.03	-.05	-.08	.06
14.	Pay1	34.180	6.510	-.02	.06	-.00	$.34^{b}$
15.	Ability2	8.119	2.643	-.07	.01	.02	-.10
16.	Effort2	10.555	3.981	-.02	.02	-.05	$.14^{a}$
17.	Easejob2	7.098	3.163	.01	-.07	.05	$-.23^{b}$
18.	ExtLocs2	12.718	3.981	$-.14^{a}$	.05	.00	$-.15^{a}$
19.	Control2	17.320	3.605	$.13^{a}$	.12	-.06	$.19^{b}$
20.	Stable2	15.824	3.090	.08	.09	.01	$.21^{b}$
21.	Affect2	21.110	5.305	-.04	-.01	.05	$.12^{a}$
22.	Expect2	17.922	4.086	-.06	.02	-.05	$.17^{b}$
23.	Promote2	14.086	5.128	-.08	-.09	.02	.03
24.	Pay2	34.008	7.841	-.04	-.00	.00	$.20^{b}$
25.	Ability3	8.028	3.576	.05	-.01	-.03	-.12
26.	Effort3	8.000	3.919	.02	.01	.03	-.08
27.	Easejob3	9.632	4.095	-.02	-.04	-.00	.02
28.	ExtLocs3	18.020	4.388	.09	.05	-.03	$.13^{a}$
29.	Control3	12.439	3.953	-.06	-.00	-.04	-.07
30.	Stable3	16.094	3.403	.03	-.08	-.02	-.03
31.	Affect3	19.606	6.185	.01	-.03	-.01	.01
32.	Expect3	16.742	4.443	.09	.05	-.12	.08
33.	Promote3	12.723	5.809	.02	-.07	-.04	-.09
34.	Pay3	30.757	8.370	$.13^{a}$	-.01	.04	.04

Note: ^{a} indicates $p \leq .05$
Note: ^{b} indicates $p \leq .01$
Note: n = 252 to 256

Table 19 (cont'd)

	Scale	5	6	7	8	9	10	11
1.	Tgender							
2.	Gendprt							
3.	Samediff							
4.	WAMS							
5.	Ability1	.-						
6.	Effort1	$-.60^b$	.-					
7.	Easejob1	$-.74^b$	$.40^b$	.-				
8.	ExtLocs1	$-.41^b$	$.27^b$	$.46^b$	.-			
9.	Control1	$.34^b$	$-.17^b$	$-.32^b$	$-.22^b$	.-		
10.	Stable1	$.19^b$	$-.17^b$	$-.12^a$	$-.35^b$	$-.20^b$	.-	
11.	Affect1	$.23^b$	.10	$-.33^b$	$-.22^b$	.07	$.14^a$	.-
12.	Expect1	$.56^b$	$-.20^b$	$-.53^b$	$-.33^b$	$.25^b$	$.20^b$	$.61^b$
13.	Promote1	$.56^b$	$-.16^b$	$-.45^b$	$-.32^b$	$.22^b$	$.17^b$	$.47^b$
14.	Pay1	$.31^b$	-.01	$-.43^b$	$-.25^b$	$.15^a$	$.15^a$	$.72^b$
15.	Ability2	$-.53^b$	$.50^b$	$.40^b$	$.23^b$	-.11	$-.18^b$	$-.14^a$
16.	Effort2	$.76^b$	$-.68^b$	$-.59^b$	$-.34^b$	$.29^b$	$.18^b$	.11
17.	Easejob2	$-.70^b$	$.57^b$	$.65^b$	$.39^b$	$-.24^b$	$-.14^a$	$-.19^b$
18.	ExtLocs2	$-.28^b$	$.31^b$	$.27^b$	$.50^b$	-.01	$-.20^b$	-.11
19.	Control2	-.02	-.00	.00	$-.19^b$	$-.13^a$	$.16^b$	-.02
20.	Stable2	$.18^b$	-.10	$-.16^a$	-.05	.01	$.19^b$	.07
21.	Affect2	$.63^b$	$-.59^b$	$-.47^b$	$-.24^b$	$.24^b$	.10	$.18^b$
22.	Expect2	$.59^b$	$-.55^b$	$-.44^b$	$-.29^b$	$.25^b$	.11	.09
23.	Promote2	$.48^b$	$-.43^b$	$-.33^b$	$-.15^a$	$.16^b$	-.02	.04
24.	Pay2	$.67^b$	$-.57^b$	$-.49^b$	$-.24^b$	$.23^b$	$.13^a$	$.17^b$
25.	Ability3	$-.78^b$	$.65^b$	$.64^b$	$.35^b$	$-.30^b$	-.11	$-.22^b$
26.	Effort3	$-.74^b$	$.68^b$	$.58^b$	$.31^b$	$-.24^b$	$-.14^a$	$-.15^a$
27.	Easejob3	$.78^b$	$-.65^b$	$-.59^b$	$-.32^b$	$.33^b$	.09	$.15^a$
28.	ExtLocs3	$.40^b$	$-.26^b$	$-.33^b$	$-.38^b$	.09	$.15^a$	.07
29.	Control3	$-.18^b$	.10	$.21^b$	$.27^b$	.08	$-.19^b$	$-.12^a$
30.	Stable3	-.08	.04	-.03	-.04	.07	-.06	.03
31.	Affect3	$-.65^b$	$.55^b$	$.48^b$	$.25^b$	$-.24^b$	-.07	.02
32.	Expect3	$-.40^b$	$.39^b$	$.29^b$	$.17^b$	$-.16^a$	.02	.02
33.	Promote3	$-.72^b$	$.63^b$	$.58^b$	$.37^b$	$-.30^b$	-.06	$-.16^a$
34.	Pay3	$-.57^b$	$.53^b$	$.40^b$	$.27^b$	$-.20^b$	-.03	.04

Note: ^{a} indicates $p \leq .05$
Note: ^{b} indicates $p \leq .01$
Note: n = 252 to 256

Table 19 (cont'd)

	Scale	12	13	14	15	16	17	18
1.	Tgender							
2.	Gendprt							
3.	Samediff							
4.	WAMS							
5.	Ability1							
6.	Effort1							
7.	Easejob1							
8.	ExtLocs1							
9.	Control1							
10.	Stable1							
11.	Affect1							
12.	Expect1	.-						
13.	Promote1	.63[b]	.-					
14.	Pay1	.62[b]	.41[b]	.-				
15.	Ability2	-.35[b]	-.21[b]	-.18[b]	.-			
16.	Effort2	.41[b]	.42[b]	.21[b]	-.50[b]	.-		
17.	Easejob2	-.42[b]	-.41[b]	-.30[b]	.47[b]	-.84[b]	.-	
18.	ExtLocs2	-.21[b]	-.13[a]	-.14[a]	.37[b]	-.35[b]	.37[b]	.-
19.	Control2	-.03	-.07	.02	-.05	.03	-.06	-.49[b]
20.	Stable2	.15[a]	.10	.11	-.09	.20[b]	-.15[a]	-.05
21.	Affect2	.35[b]	.34[b]	.19[b]	-.29[b]	.73[b]	-.65[b]	-.25[b]
22.	Expect2	.39[b]	.31[b]	.20[b]	-.26[b]	.67[b]	-.60[b]	-.26[b]
23.	Promote2	.21[b]	.34[b]	.10	-.10	.57[b]	-.51[b]	-.17[b]
24.	Pay2	.42[b]	.40[b]	.27[b]	-.30[b]	.76[b]	-.67[b]	-.24[b]
25.	Ability3	-.50[b]	-.43[b]	-.29[b]	.57[b]	-.78[b]	.74[b]	.30[b]
26.	Effort3	-.43[b]	-.39[b]	-.19[b]	.55[b]	-.79[b]	.72[b]	.32[b]
27.	Easejob3	.45[b]	.45[b]	.19[b]	-.55[b]	.80[b]	-.72[b]	-.27[b]
28.	ExtLocs3	.15[a]	.12	.14[a]	-.29[b]	.36[b]	-.37[b]	-.40[b]
29.	Control3	-.09	-.04	-.13[a]	.19[b]	-.14[a]	.14[a]	.31[b]
30.	Stable3	-.03	-.13[a]	.05	.06	-.04	.04	-.16[a]
31.	Affect3	-.32[b]	-.36[b]	-.10	.41[b]	-.67[b]	.62[b]	.16[a]
32.	Expect3	-.09	-.16[b]	-.00	.28[b]	-.46[b]	.41[b]	.11
33.	Promote3	-.43[b]	-.36[b]	-.25[b]	.54[b]	-.73[b]	.68[b]	.25[b]
34.	Pay3	-.25[b]	-.28[b]	.06	.40[b]	-.60[b]	.55[b]	.14[a]

Note: [a] indicates $p \leq .05$
Note: [b] indicates $p \leq .01$
Note: n = 252 to 256

Table 19 (cont'd)

	Scale	19	20	21	22	23	24	25
1.	Tgender							
2.	Gendprt							
3.	Samediff							
4.	WAMS							
5.	Ability1							
6.	Effort1							
7.	Easejob1							
8.	ExtLocs1							
9.	Control1							
10.	Stable1							
11.	Affect1							
12.	Expect1							
13.	Promote1							
14.	Pay1							
15.	Ability2							
16.	Effort2							
17.	Easejob2							
18.	ExtLocs2							
19.	Control2	.-						
20.	Stable2	-.01	.-					
21.	Affect2	-.02	.24[b]	.-				
22.	Expect2	.02	.24[b]	.77[b]	.-			
23.	Promote2	.02	.26[b]	.66[b]	.64[b]	.-		
24.	Pay2	-.01	.24[b]	.85[b]	.76[b]	.61[b]	.-	
25.	Ability3	.06	-.15[a]	-.66[b]	-.59[b]	-.47[b]	-.67[b]	.-
26.	Effort3	-.01	-.16[a]	-.66[b]	-.59[b]	-.49[b]	-.67[b]	.91[b]
27.	Easejob3	-.11	.18[b]	.68[b]	.61[b]	.53[b]	.69[b]	-.89[b]
28.	ExtLocs3	.33[b]	.14[a]	.18[b]	.19[b]	.11	.25[b]	-.36[b]
29.	Control3	-.21[b]	.02	-.09	-.07	.01	-.04	.17[b]
30.	Stable3	.02	-.07	.01	.04	-.06	.02	.09
31.	Affect3	.01	-.14[a]	-.54[b]	-.50[b]	-.45[b]	-.52[b]	.77[b]
32.	Expect3	.08	-.05	-.37[b]	-.25[b]	-.36[b]	-.34[b]	.59[b]
33.	Promote3	.03	-.12	-.64[b]	-.58[b]	-.43[b]	-.63[b]	.87[b]
34.	Pay3	.04	-.08	-.49[b]	-.49[b]	-.41[b]	-.46[b]	.72[b]

Note: [a] indicates $p \leq .05$

Note: [b] indicates $p \leq .01$

Note: n = 252 to 256

Table 19 (cont'd)

	Scale	26	27	28	29	30	31
1.	Tgender						
2.	Gendprt						
3.	Samediff						
4.	WAMS						
5.	Ability1						
6.	Effort1						
7.	Easejob1						
8.	ExtLocs1						
9.	Control1						
10.	Stable1						
11.	Affect1						
12.	Expect1						
13.	Promote1						
14.	Pay1						
15.	Ability2						
16.	Effort2						
17.	Easejob2						
18.	ExtLocs2						
19.	Control2						
20.	Stable2						
21.	Affect2						
22.	Expect2						
23.	Promote2						
24.	Pay2						
25.	Ability3						
26.	Effort3	.-					
27.	Easejob3	-.89[b]	.-				
28.	ExtLocs3	-.39[b]	.35[b]	.-			
29.	Control3	.17[b]	-.13[a]	-.63[b]	.-		
30.	Stable3	.00	-.04	.05	-.07	.-	
31.	Affect3	.78[b]	-.78[b]	-.25[b]	.02	.08	.-
32.	Expect3	.59[b]	-.57[b]	-.20[b]	.04	.19[b]	.72[b]
33.	Promote3	.84[b]	-.83[b]	-.37[b]	.15[a]	.09	.77[b]
34.	Pay3	.73[b]	-.72[b]	-.27[b]	.07	.10	.86[b]

Note: [a] indicates $p \leq .05$
Note: [b] indicates $p \leq .01$
Note: n = 252 to 256

Table 19 (cont'd)

	Scale	32	33	34
1.	Tgender			
2.	Gendprt			
3.	Samediff			
4.	WAMS			
5.	Ability1			
6.	Effort1			
7.	Easejob1			
8.	ExtLocs1			
9.	Control1			
10.	Stable1			
11.	Affect1			
12.	Expect1			
13.	Promote1			
14.	Pay1			
15.	Ability2			
16.	Effort2			
17.	Easejob2			
18.	ExtLocs2			
19.	Control2			
20.	Stable2			
21.	Affect2			
22.	Expect2			
23.	Promote2			
24.	Pay2			
25.	Ability3			
26.	Effort3			
27.	Easejob3			
28.	ExtLocs3			
29.	Control3			
30.	Stable3			
31.	Affect3			
32.	Expect3	.-		
33.	Promote3	$.58^b$	.-	
34.	Pay3	$.69^b$	$.73^b$	.-

Note: ^{a} indicates $p \leq .05$
Note: ^{b} indicates $p \leq .01$
Note: n = 252 to 256

controllability would be negative. Another group of participants might view high effort which leads to improving performance as highly controllable. In this case, the correlation would be positive. Thus, the obtained correlations are not interpretable without consideration of the independent variables, interactions, and specific hypotheses. They are merely presented here for completeness.

Intercorrelations between variables were also computed across the entire set of observations, without regard to the specific informational condition provided. This correlation matrix was based on a sample size of 768 (256 * 3), the total number of observations available in the study. This is the matrix used to conduct the repeated measures regression analyses. This intercorrelation matrix is presented in Table 20.

Manipulation Checks

A variety of items and methods were used to ensure the manipulations were effective in achieving their desired outcomes. Manipulation checks included order of presentation, perceived performance levels, and perceived employee gender. A MANOVA using the perceived causes of observed performance as dependent variables was also conducted.

As noted earlier, the order of the presentation of employee files was counterbalanced. Manipulation checks indicated that this procedure was properly conducted. For

Table 20

Means, Standard Deviations and Intercorrelations of All Measured Variables Based on Entire Set of Observations

	Scale	Mean	StdDev	1	2	3	4
1.	Tgender	.504	.500	.-			
2.	Gendprt	.551	.498	.05	.-		
3.	Samediff	.523	.500	.10[b]	.00	.-	
4.	WAMS	89.575	13.899	.05	.56[b]	.00	.-
5.	Ability	8.773	3.379	.01	.01	-.02	-.02
6.	Effort	8.914	3.894	-.00	.01	-.01	.01
7.	Easejob	8.030	3.591	.00	-.06	.02	-.12[b]
8.	ExtLocs	14.539	4.774	-.02	.01	-.01	-.05
9.	Control	14.869	4.258	.01	.04	-.06	.04
10.	Stable	16.241	3.265	.05	.03	-.00	.09[a]
11.	Affect	20.720	5.407	-.03	-.01	.01	.10[b]
12.	Expect	17.490	4.206	.03	.04	-.07[a]	.18[b]
13.	Promote	13.764	5.378	-.03	-.07	-.03	-.01
14.	Pay	32.983	7.764	.03	.01	.01	.18[b]

	Scale	5	6	7	8	9	10
1.	Tgender						
2.	Gendprt						
3.	Samediff						
4.	WAMS						
5.	Ability	.-					
6.	Effort	-.02	.-				
7.	Easejob	-.49[b]	-.56[b]	.-			
8.	ExtLocs	-.23[b]	-.25[b]	.47[b]	.-		
9.	Control	.15[b]	.15[b]	-.27[b]	-.56[b]	.-	
10.	Stable	.11[b]	-.01	-.10[b]	-.11[b]	-.11[b]	.-
11.	Affect	.33[b]	.58[b]	-.64[b]	-.28[b]	.07	.15[b]
12.	Expect	.35[b]	.40[b]	-.57[b]	-.29[b]	.15[b]	.21[b]
13.	Promote	.51[b]	.46[b]	-.63[b]	-.32[b]	.17[b]	.17[b]
14.	Pay	.32[b]	.55[b]	-.65[b]	-.32[b]	.14[b]	.16[b]

Note: [a] indicates $p \leq .05$
Note: [b] indicates $p \leq .01$
Note: n = 756 to 768

Table 20 (cont'd)

	Scale	11	12	13	14
1.	Tgender				
2.	Gendprt				
3.	Samediff				
4.	WAMS				
5.	Ability				
6.	Effort				
7.	Easejob				
8.	ExtLocs				
9.	Control				
10.	Stable				
11.	Affect	.-			
12.	Expect	.71[b]	.-		
13.	Promote	.66[b]	.62[b]	.-	
14.	Pay	.82[b]	.70[b]	.61[b]	.-

Note: [a] indicates $\underline{p} \leq .05$
Note: [b] indicates $\underline{p} \leq .01$
Note: $\underline{n}$ = 756 to 768

example, ability informational cues were presented first 33% of the time, second 35% of the time, and third 32% of the time. There were some minor discrepancies from the ideal 33 1/3% for each condition, but this was mostly due to missing data on the order of presentation, not because the order of presentation was not properly counterbalanced.

Participants were randomly assigned to performance trend and employee gender conditions. For example, each type of performance trend was presented so that approximately equal numbers of participants were presented with each type of performance trend (34.3%, 32.4%, 33.2% for improving, maintaining, and declining trends, respectively).

A manipulation check was used to ensure that participants correctly identified the gender of target employees. Every participant (100%) correctly identified the gender of the target employees presented in the fictional files. This question was asked very near the end of all questions to avoid biasing participant responses.

The gender of male and female target employees were equally distributed in presentation across participants (127 or 49.6% received male target employees, and 129 or 50.4% received female target employees). The gender of the target employee was the same as the gender of the participant 48% of the time, while gender was different between the target employee and participant 52% of the time. As noted earlier, the gender of participants included 45% males and 55% females.

Several items were used to determine if participants correctly perceived that all employees in the files presented were above average in performance. The first question asked participants about the average profit level of the employee presented in the file. Ninety-two percent of participants correctly answered this question. The next question asked participants what the average profit level of all stores in the region was. Ninety-four percent of participants correctly answered this question. The third question asked participants whether the employee presented in the file was above or below the regional average in profit. Ninety-one percent of the participants correctly answered this third question. ANOVAs and MANOVAs were conducted on the entire sample and then again only for those who answered the third question correctly. The results of these analyses were then compared. Few differences existed between both sets of analyses. Due to space considerations, only the results of analyses involving the entire sample will be reported.

A doubly-multivariate MANOVA was conducted on the perceived causes of observed performance, with performance trend and informational cues as the independent variables. The results are presented in Table 21. The MANOVA indicated that performance trend, informational cues, and the trend X information interaction all significantly affected perceived causes of performance. This is exactly what would be expected based on the research design. The means of

Table 21

MANOVA for the Perceived Causes of Observed Performance

Effect	df	Error df	F	p-value
Constant	3	241	15361.36	.000
Main Effects				
Performance Trend (T)	6	482	26.09	.000
Informational Cues (I)	6	238	31.87	.000
Interactions				
T X I	12	476	57.50	.000

Note: All F tests are reported using Wilk's Lambda perceived high or low ability, effort, and ease of job for the observed performances are presented in Table 22. The means correspond to the manipulations provided in the fictional employee files and the significant MANOVA for main effects and interactions indicate the manipulations were successful. Further analyses of manipulation checks using ANOVAs or specific cell comparisons were deemed unnecessary.

In summary, the manipulation checks indicate that the order of employee file presentation did not represent a threat to the research design. They also show that most of the participants correctly perceived the target employees as performing above average in performance. When participants who misperceived the level of target employee performance were removed from analyses, only minor differences in the results were obtained. The manipulation checks show that approximately even numbers of male and female target employees were presented, and about half of those presented were of the same gender as the participant. All of the participants correctly perceived the gender of the target employee. Finally, manipulation checks indicate that the fictional employee files effectively manipulated the perceived causes of observed performance.

<u>Effects of Performance Trend, Informational Cues, and Employee Gender on Personnel Decisions</u>

A doubly multivariate repeated measures MANOVA was performed with performance trend, informational cues, and gender of the target employee as independent variables, and

Table 22

Cell Means of Perceived Ability, Effort, or Ease of Job Split by Performance Trend and Informational Cues

INFO TYPE	PERFORMANCE TRENDS Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues				
Perceived ability	11.898 (88)	12.072 (83)	6.494 (85)	10.160 (256)
Perceived effort	6.580 (88)	6.639 (83)	11.341 (85)	8.180 (256)
Perceived easejob	6.136 (88)	6.349 (83)	9.671 (85)	7.379 (256)
Effort Info Cues				
Perceived ability	7.200 (85)	7.145 (83)	9.988 (85)	8.119 (253)
Perceived effort	13.080 (88)	12.651 (83)	5.894 (85)	10.555 (256)
Perceived easejob	5.375 (88)	5.482 (83)	10.459 (85)	7.098 (256)
EaseJob Info Cues				
Perceived ability	5.837 (86)	5.940 (83)	12.282 (85)	8.028 (254)
Perceived effort	5.448 (87)	5.759 (83)	12.857 (84)	8.000 (254)
Perceived easejob	12.129 (85)	12.169 (83)	4.659 (85)	9.632 (253)
AVGS ACROSS INFO CELLS				**OVERALL GRAND MEANS**
Perceived effort	8.380 (263)	8.349 (249)	10.020 (254)	8.914 (766)
Perceived ability	8.344 (259)	8.386 (249)	9.588 (255)	8.773 (763)
Perceived easejob	7.831 (261)	8.000 (249)	8.263 (255)	8.030 (765)

Note: Numbers in parentheses indicate number of observations with promotion, pay, affect, and expectations as dependent variables. This analysis was performed to test the hypothesis that performance trends, informational cues, and employee gender would affect overall personnel decisions. The results of this MANOVA are presented in Table 23.

The results indicate that performance trends and informational cues significantly affected personnel decisions. These main effects were qualified by significant effects for the performance trend X informational cues and the informational cues X employee gender interactions.

As noted earlier, interpretational problems with MANOVA can occur when evaluating univariate effects using multivariate procedures. For this reason, separate repeated measures univariate ANOVAs were conducted for each of the four dependent variables (promotion, pay, affect, and expectations). These analyses provided a more specific explanation of the manner in which different dependent variables were affected by the independent variables in the MANOVA.

The first ANOVA evaluated the effects of performance trend, informational cues, and target employee gender on promotion decisions. The results of this analysis are presented in Table 24, while the cell means are presented in Table 25.

The results of the ANOVA indicate that informational cues had an effect on promotion decisions, but this was qualified by the significant informational cues X

Table 23

Repeated Measures MANOVA for the Overall Effect of Performance Trend, Informational Cues, and Employee Gender on Personnel Decisions

Effect	df	Error df	F	p-value
Constant	4	239	5685.20	.000
Between-Subjects Main Effects				
Performance Trend (T)	8	478	4.33	.000
Employee Gender (EG)	4	239	1.85	.120
Between-Subjects Interactions				
EG X T	8	478	.46	.884
Within-Subjects Main Effects				
Informational Cues (I)	8	235	7.12	.000
Within-Subjects Interactions				
T X I	16	470	33.20	.000
EG X I	8	235	2.01	.046
EG X T X I	16	470	1.02	.430

Note: All *F* tests are reported using Wilk's Lambda

Table 24

Repeated Measures ANOVA for the Effects of Performance Trend, Informational Cues, and Employee Gender on Promotion Decisions

Effect	df	MS	F	p-value
Between-Subjects Effects				
Employee Gender (EG)	1	22.03	1.19	.277
Performance Trend (T)	2	19.68	1.06	.348
EG X T	2	3.84	.21	.813
Error	246	18.55		
Within-Subjects Effects				
Informational Cues (I)	2	194.76	12.08	.000
T X I	4	2157.94	133.84	.000
EG X I	2	29.59	1.83	.161
EG X T X I	4	7.26	.45	.772
Error	492	16.12		

Note: All F tests for within-subjects effects are reported using averaged tests of significance

Table 25

Cell Means of Promotion Decisions, Split by Performance Trend, Informational Cues, and Employee Gender

INFO TYPE	PERFORMANCE TRENDS Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues	15.76	16.43	11.19	14.47
	(88)	(83)	(84)	(255)
	5.20	4.63	3.39	5.03
Male Employees	15.50	16.83	11.67	14.62
	(44)	(40)	(43)	(127)
	4.84	4.66	3.06	4.76
Female Employees	16.02	16.07	10.68	14.32
	(44)	(43)	(41)	(128)
	5.57	4.62	3.68	5.30
Effort Info Cues	15.78	16.43	10.04	14.08
	(88)	(83)	(85)	(256)
	4.31	4.83	3.58	5.13
Male Employees	16.18	16.83	10.65	14.51
	(44)	(40)	(43)	(127)
	4.72	4.74	3.43	5.12
Female Employees	15.39	16.07	9.40	13.67
	(44)	(43)	(42)	(129)
	3.86	4.93	3.66	5.12
EaseJob Info Cues	9.62	9.36	19.34	12.72
	(87)	(83)	(83)	(253)
	3.25	3.36	3.93	5.81
Male Employees	9.43	9.45	18.86	12.58
	(44)	(40)	(42)	(126)
	2.80	3.26	4.39	5.67
Female Employees	9.81	9.28	19.83	12.87
	(43)	(43)	(41)	(127)
	3.68	3.49	3.37	5.96

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

Table 25 (cont'd)

	PERFORMANCE TRENDS			
AVGS ACROSS INFO CELLS	**Improv**	**Mntain**	**Declin**	**OVERALL GRAND MEANS**
AVGS ACROSS GENDER CELLS	13.74 (263) 5.20	14.08 (249) 5.45	13.48 (252) 5.50	13.76 (764) 5.38
Male Employees	13.70 (132) 5.18	14.37 (120) 5.49	13.69 (128) 5.15	13.91 (380) 5.27
Female Employees	13.77 (131) 5.23	13.81 (129) 5.41	13.27 (124) 5.85	13.62 (384) 5.49

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

performance trend interaction. No other effects were significant. The findings indicate performance trend did not have a significant main effect on promotion decisions, though means were in the hypothesized directions; thus, they do not provide support for hypotheses H1, H2, and H6. The results of the ANOVA suggest there were no effects on promotion decisions for employee gender nor for the employee gender X performance trend interaction, and they do not provide support for hypotheses H11-H11b.

The significant performance trend X informational cues interaction provides indirect support for hypotheses H3 to H4b. Employees who showed improving or maintaining performance trends which were due to high ability or high effort were rewarded significantly more than employees who showed improving or maintaining performance trends which were due to ease of job. Employees who showed declining performance trends which were due to low effort were rewarded significantly less than employees who showed declining performance trends which were due to low ability, who were in turn rewarded significantly less than employees who showed declining performance trends which were due to non-ease of job. If effort and ability are viewed as more controllable and internal than ease of job, then hypotheses H3 to H4b will have been supported. The performance trend X informational cues interaction effect for promotion decisions is graphically presented in Figure 15.

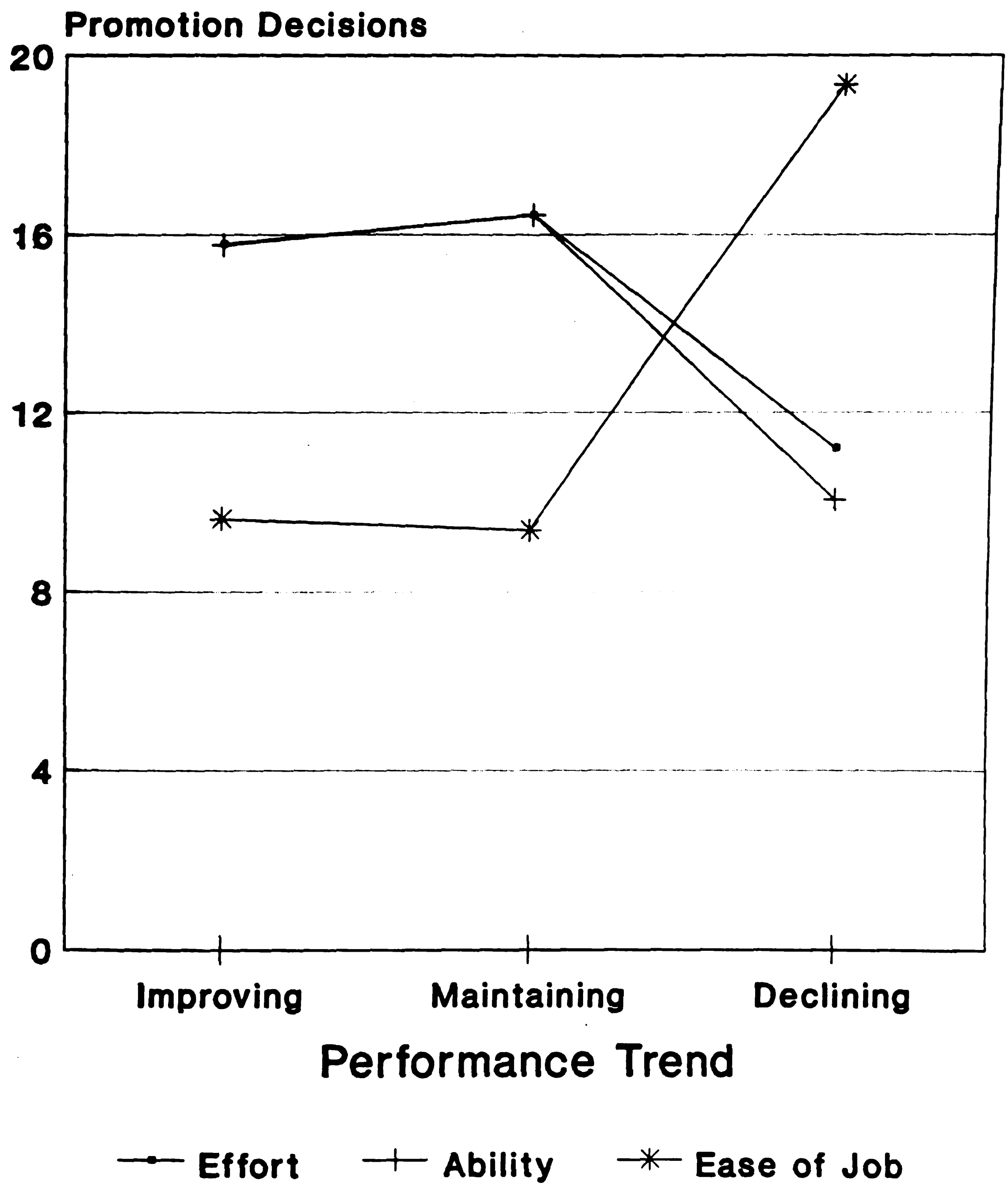


Figure 15. Performance Trend X Informational Cues Interaction Effect for Promotion Decisions

The next repeated measures ANOVA evaluated the effects of performance trend, informational cues, and target employee gender on pay decisions. The results of this analysis are presented in Table 26, while the cell means are presented in Table 27.

The results of the ANOVA for pay indicate that informational cues had a significant main effect on pay decisions. This main effect was qualified by two significant interaction effects, which included the trend X informational cues and employee gender X informational cues interactions. While the significant gender X informational cues interaction does not provide support for hypotheses H11-H11b, it does suggest that employee gender affects how decision makers use performance related information.

The employee gender X informational cues interaction appears to be primarily due to the effect of the ease of job informational cues and gender on pay decisions. There were no significant differences in pay reward for male and female employees in the ability and effort informational cue conditions, though males tended to be rewarded slightly more than females in these conditions. There was a significant difference in pay reward in the ease of job informational cues condition such that females were rewarded significantly more than males when above average performance was due to the ease of job. Figure 16 graphically depicts the employee gender X informational cues interaction effect on pay decisions.

Table 26

Repeated Measures ANOVA for the Effects of Performance Trend, Informational Cues, and Employee Gender on Pay Decisions

Effect	df	MS	F	p-value
Between-Subjects Effects				
Employee Gender (EG)	1	34.04	.68	.410
Performance Trend (T)	2	12.46	.25	.779
EG X T	2	16.37	.33	.721
Error	249	49.90		
Within-Subjects Effects				
Informational Cues (I)	2	953.52	30.26	.000
T X I	4	3922.72	124.50	.000
EG X I	2	165.79	5.26	.005
EG X T X I	4	8.85	.28	.890
Error	498	31.51		

Note: All F tests for within-subjects effects are reported using averaged tests of significance

Table 27

Cell Means of Pay Decisions, Split by Performance Trend, Informational Cues, and Employee Gender

	PERFORMANCE TRENDS			
INFO TYPE	Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues	34.83 (88) 6.67	34.80 (83) 6.78	32.91 (85) 5.93	34.18 (256) 6.51
Male Employees	35.18 (44) 5.55	34.53 (40) 5.77	33.26 (43) 5.39	34.32 (127) 5.58
Female Employees	34.48 (44) 7.68	35.05 (43) 7.66	32.55 (42) 6.50	34.04 (129) 7.33
Effort Info Cues	37.75 (87) 4.66	37.77 (83) 5.65	26.51 (85) 6.86	34.01 (255) 7.84
Male Employees	37.59 (44) 4.66	38.18 (40) 4.95	27.35 (43) 6.27	34.31 (127) 7.28
Female Employees	37.91 (43) 4.71	37.40 (43) 6.27	25.64 (42) 7.39	33.71 (128) 8.37
EaseJob Info Cues	26.90 (87) 7.35	26.55 (83) 6.28	38.81 (85) 4.40	30.76 (255) 8.37
Male Employees	25.66 (44) 6.64	25.33 (40) 6.27	37.86 (43) 4.51	29.69 (127) 8.28
Female Employees	28.16 (43) 7.89	27.70 (43) 6.15	39.79 (42) 4.11	31.82 (128) 8.36

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

Table 27 (cont'd)

AVGS ACROSS INFO CELLS	PERFORMANCE TRENDS **Improv**	**Mntain**	**Declin**	**OVERALL GRAND MEANS**
AVGS ACROSS GENDER CELLS	33.16	33.04	32.74	32.98
	(262)	(249)	(255)	(766)
	7.80	7.84	7.68	7.76
Male Employees	32.81	32.68	32.82	32.77
	(132)	(120)	(129)	(381)
	7.65	7.83	6.91	7.45
Female Employees	33.52	33.38	32.66	33.19
	(130)	(129)	(126)	(385)
	7.97	7.86	8.42	8.07

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

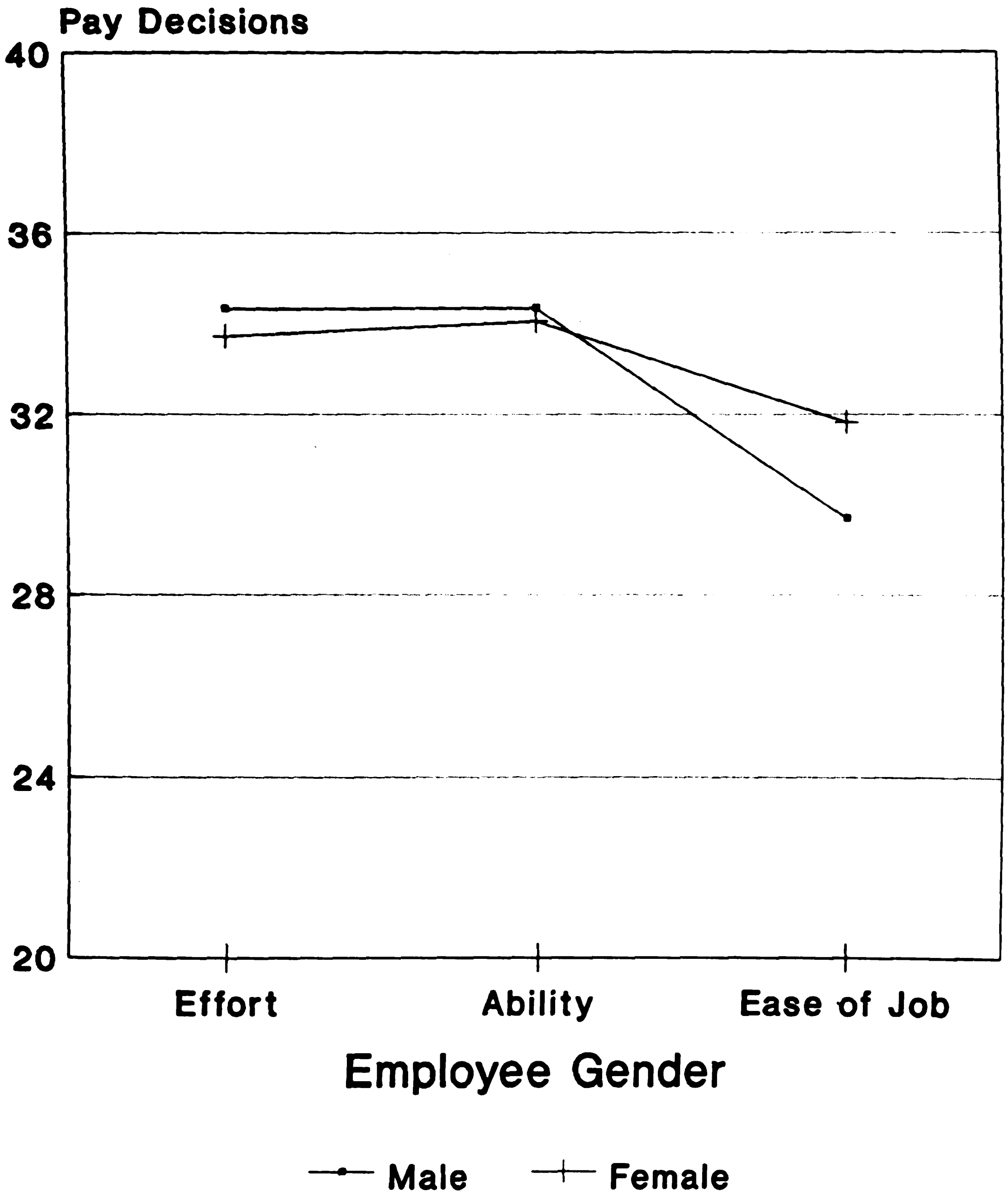


Figure 16. Employee Gender X Informational Cues Interaction Effect for Pay Decisions

Again, the findings do not provide support for hypotheses H1 and H2, because performance trend did not have a significant main effect on pay decisions, but again, means were all in the hypothesized directions. It is useful to note that the overall MANOVA indicated that performance trend did have a significant main effect on personnel decisions.

As before, the significant performance trend X informational cues interaction provides indirect support for hypotheses H3 to H4b. Employees who showed improving or maintaining performance trends which were due to high effort were rewarded significantly more than employees who showed improving or maintaining performance trends which were due to high ability, who in turn were rewarded significantly more than employees who showed improving or maintaining performance trends which were due to ease of job. Employees who showed declining performance which was due to low effort were rewarded significantly less than employees who showed declining trends which were due to low ability, who in turn were rewarded less than employees who showed declining performance trends which were due to non-ease of job. The performance trend X informational cues interaction effect for pay decisions is graphically presented in Figure 17. These results exactly reflect hypothesized effects of locus and controllability on personnel decisions.

A repeated measures ANOVA was performed to analyze the effects of performance trends, informational cues, and

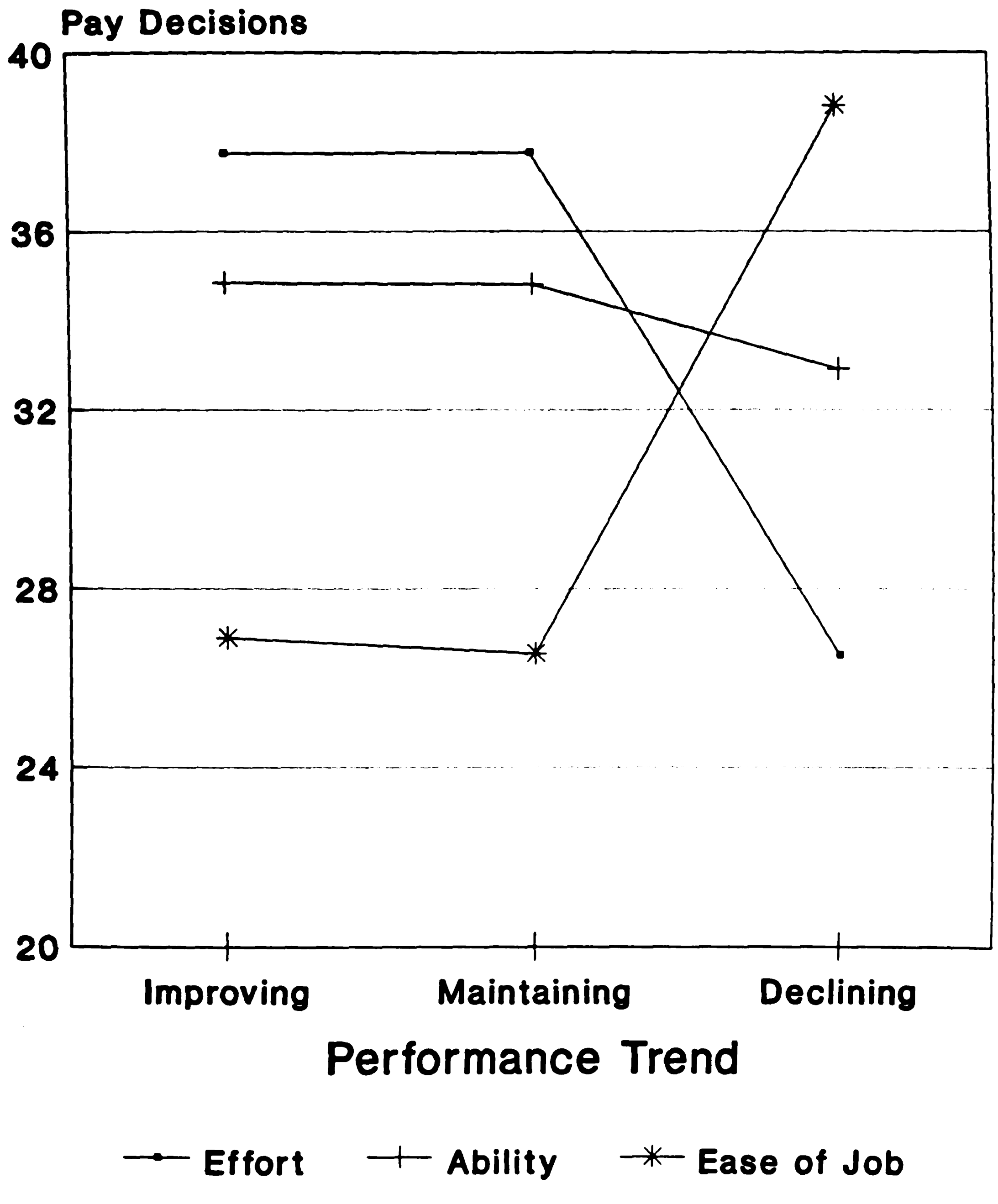


Figure 17. Performance Trend X Informational Cues Interaction Effect for Pay Decisions

employee gender on expectations for future performance. The results of this analysis are presented in Table 28, while the cell means are presented in Table 29.

The results of the ANOVA for expectations indicate that performance trend and informational cues each had a significant effect on expectations for future performance. These main effects were qualified by the trend X informational cue interaction, and to a certain degree, by the informational cue X employee gender interaction ($p \leq .07$).

The results show expectations for future performance were significantly higher for employees who showed improving and maintaining trends than they were for employees who showed declining trends, but the difference between expectations for employees who showed improving and maintaining performance trends was not significant. These results provide indirect support for H1 and H2. It should be noted however, that differences in expectations for future performance did not translate into a significant main effect of performance trend on pay and promotion decisions.

The significant performance trend X informational cues interaction provides indirect support for hypotheses H3 to H4b. Employees who showed improving performance which was due to effort or ability were expected to do better than employees who showed improving performance which was due to ease of job. Employees who showed maintaining performance which was due to effort were expected to do better than

Table 28

Repeated Measures ANOVA for the Effects of Performance Trend, Informational Cues, and Employee Gender on Expectations for Future Performance

Effect	df	MS	F	p-value
Between-Subjects Effects				
Employee Gender (EG)	1	5.50	.33	.567
Performance Trend (T)	2	133.79	7.98	.000
EG X T	2	13.83	.83	.439
Error	249	16.76		
Within-Subjects Effects				
Informational Cues (I)	2	98.19	9.18	.000
T X I	4	857.93	80.23	.000
EG X I	2	29.19	2.73	.066
EG X T X I	4	7.65	.72	.582
Error	498	10.69		

Note: All F tests for within-subjects effects are reported using averaged tests of significance

Table 29

Cell Means of Expectations, Split by Performance Trend, Informational Cues, and Employee Gender

	PERFORMANCE TRENDS			
INFO TYPE	Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues	18.86 (88) 4.01	19.08 (83) 3.35	15.44 (84) 3.51	17.81 (255) 3.99
Male Employees	18.39 (44) 4.00	18.90 (40) 3.22	15.62 (42) 3.35	17.62 (126) 3.81
Female Employees	19.34 (44) 4.01	19.26 (43) 3.49	15.26 (42) 3.70	17.98 (129) 4.17
Effort Info Cues	19.33 (88) 3.02	19.90 (83) 3.24	14.53 (85) 3.66	17.92 (256) 4.09
Male Employees	19.43 (44) 3.35	20.30 (40) 2.99	14.91 (43) 3.36	18.17 (127) 4.00
Female Employees	19.23 (44) 2.68	19.53 (43) 3.45	14.14 (42) 3.95	17.67 (129) 4.17
EaseJob Info Cues	14.66 (88) 4.29	15.49 (83) 3.78	20.12 (85) 3.05	16.74 (256) 4.44
Male Employees	14.02 (44) 4.08	15.65 (40) 3.79	19.40 (43) 3.20	16.35 (127) 4.33
Female Employees	15.30 (44) 4.44	15.35 (43) 3.80	20.86 (42) 2.74	17.12 (129) 4.53

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

Table 29 (cont'd)

AVGS ACROSS INFO CELLS	PERFORMANCE TRENDS **Improv**	**Mntain**	**Declin**	**OVERALL GRAND MEANS**
AVGS ACROSS GENDER CELLS	17.62 (264) 4.34	18.16 (249) 3.94	16.70 (254) 4.20	17.49 (767) 4.21
Male Employees	17.28 (132) 4.47	18.28 (120) 3.86	16.65 (128) 3.83	17.38 (380) 4.11
Female Employees	17.95 (132) 4.20	18.05 (129) 4.04	16.75 (126) 4.56	17.59 (387) 4.30

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

employees who showed maintaining performance which was due to ability, who were expected to do better than employees who showed maintaining performance which was due to the ease of job. Employees who showed declining performance which was due to effort or ability were expected to do worse than employees who showed declining performance which was due to ease of job. The performance trend X informational cues interaction effect for expectations of future performance is graphically presented in Figure 18.

The findings did not support hypotheses H11-H11b, but they do provide support for the idea that employee gender affects future expectations for performance, based on the performance related information provided. The employee gender X informational cues interaction appears to be primarily due to the effect of the ease of job informational cues and gender on expectations for future performance. There were no significant differences in expectations for male and female employees in the ability and effort informational cue conditions, but there was a significant difference of expectations in the ease of job informational cues condition such that females were expected to do better in the future than were males, particularly in the declining performance condition. Figure 19 graphically depicts the employee gender X informational cues interaction effect on expectations for future performance.

A final repeated measures ANOVA was conducted for the effects of performance trend, employee gender and

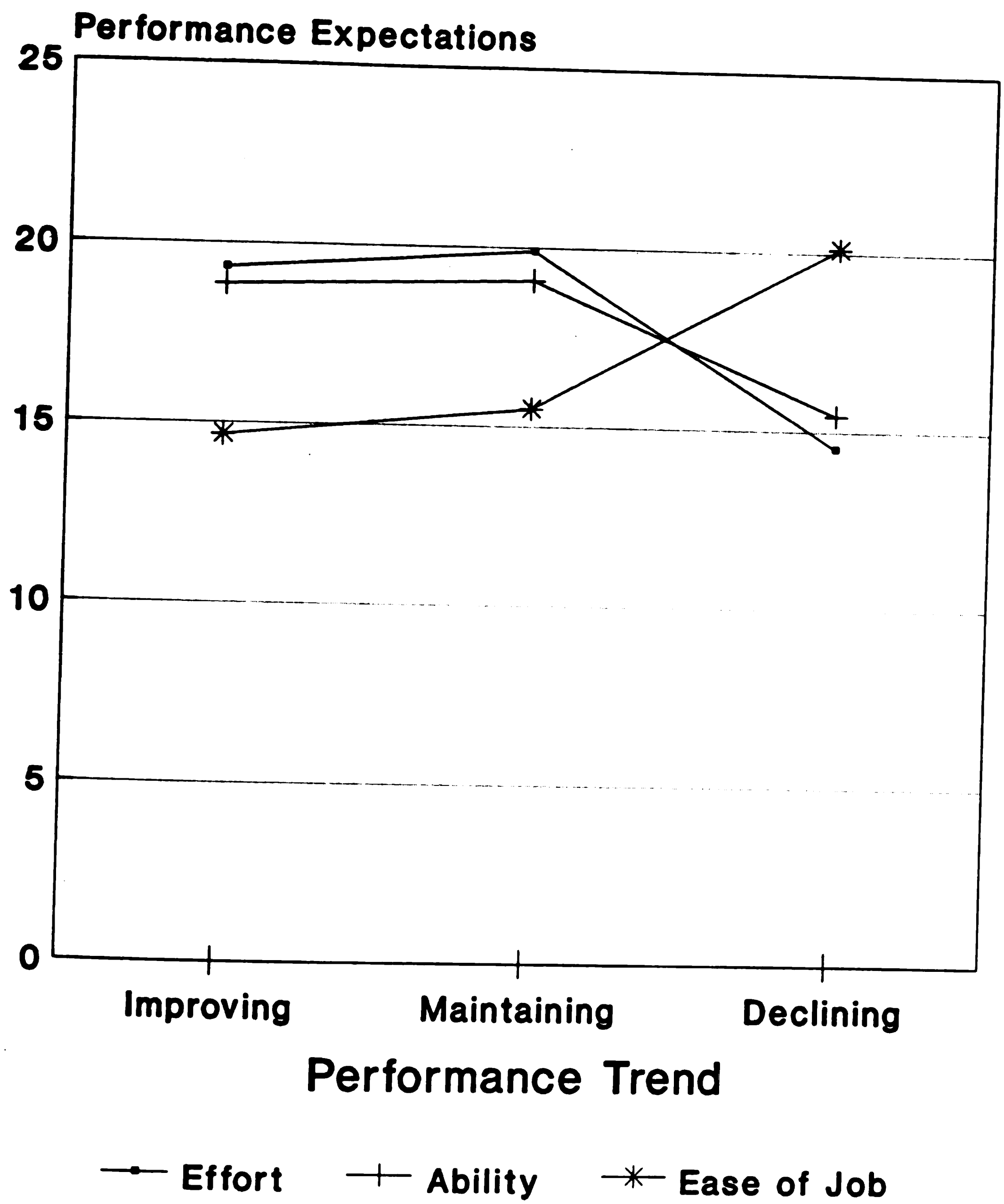


Figure 18. Performance Trend X Informational Cues Interaction Effect for Expectations

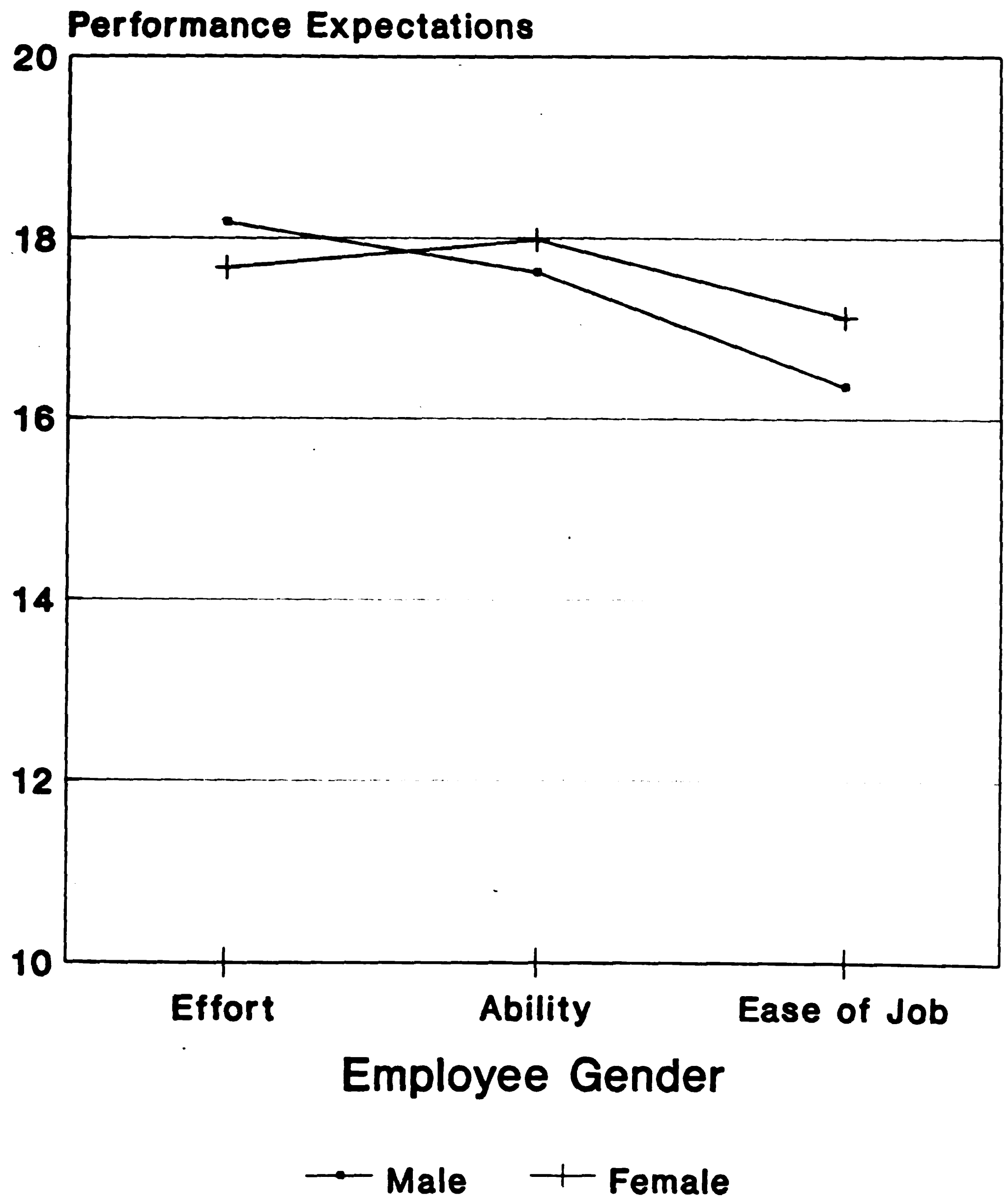


Figure 19. Employee Gender X Informational Cues Interaction Effect for Expectations

informational cues on positive affect toward the employee. The findings replicate some of the findings of the three previous ANOVAs. The results are presented in Table 30, while the cell means are presented in Table 31.

Informational cues had a main effect on affect toward the employee, but this was qualified by the performance trend X informational cues interaction. Decision makers had significantly more positive affect for employees who showed improving or maintaining performance which was due to effort than for employees who showed improving or maintaining performance which was due to ability. Decision makers also had significantly more positive affect for employees who showed improving or maintaining performance which was due to ability than for employees who showed improving or maintaining performance which was due to ease of job. Decision makers had significantly less positive affect for employees who showed declining performance which was due to lack of effort than for employees who showed declining performance which was due to lack of ability. Decision makers also had significantly less positive affect for employees who showed declining performance which was due to lack of ability than for employee who showed declining performance which was due to the non-ease of the job. These results are graphically depicted in Figure 20.

The results indirectly support hypotheses H3-H4b, but they do not provide support for hypotheses H1-H2 since no main effect for performance trend was found. The results

Table 30

Repeated Measures ANOVA for the Effects of Performance Trend, Informational Cues, and Employee Gender on Affect Toward the Employee

Effect	df	MS	F	p-value
Between-Subjects Effects				
Employee Gender (EG)	1	18.55	.93	.336
Performance Trend (T)	2	36.65	1.83	.162
EG X T	2	7.93	.40	.673
Error	247	19.98		
Within-Subjects Effects				
Informational Cues (I)	2	221.46	14.65	.000
T X I	4	2286.09	151.19	.000
EG X I	2	12.94	.86	.425
EG X T X I	4	20.62	1.36	.245
Error	494	15.12		

Note: All F tests for within-subjects effects are reported using averaged tests of significance

Table 31

Cell Means of Affect, Split by Performance Trend, Informational Cues, and Employee Gender

INFO TYPE	PERFORMANCE TRENDS Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues	21.63	21.83	20.89	21.45
	(88)	(83)	(84)	(255)
	5.10	4.10	3.93	4.42
Male Employees	21.98	21.80	21.47	21.75
	(44)	(40)	(42)	(126)
	4.67	4.10	4.23	4.32
Female Employees	21.27	21.86	20.31	21.16
	(44)	(43)	(42)	(129)
	5.53	4.14	3.56	4.52
Effort Info Cues	23.32	24.17	15.80	21.11
	(87)	(83)	(84)	(254)
	3.37	3.23	4.55	5.31
Male Employees	23.41	24.38	16.30	21.31
	(44)	(40)	(43)	(127)
	3.46	2.90	4.95	5.28
Female Employees	23.23	23.98	15.27	20.91
	(43)	(43)	(41)	(127)
	3.31	3.54	4.09	5.34
EaseJob Info Cues	15.93	16.70	26.25	19.61
	(88)	(83)	(85)	(256)
	4.60	4.21	3.12	6.18
Male Employees	15.39	17.38	25.84	19.55
	(44)	(40)	(43)	(127)
	5.10	4.68	2.78	6.27
Female Employees	16.48	16.07	26.67	19.66
	(44)	(43)	(42)	(129)
	4.03	3.67	3.43	6.13

Note: Numbers in parentheses indicate number of observations

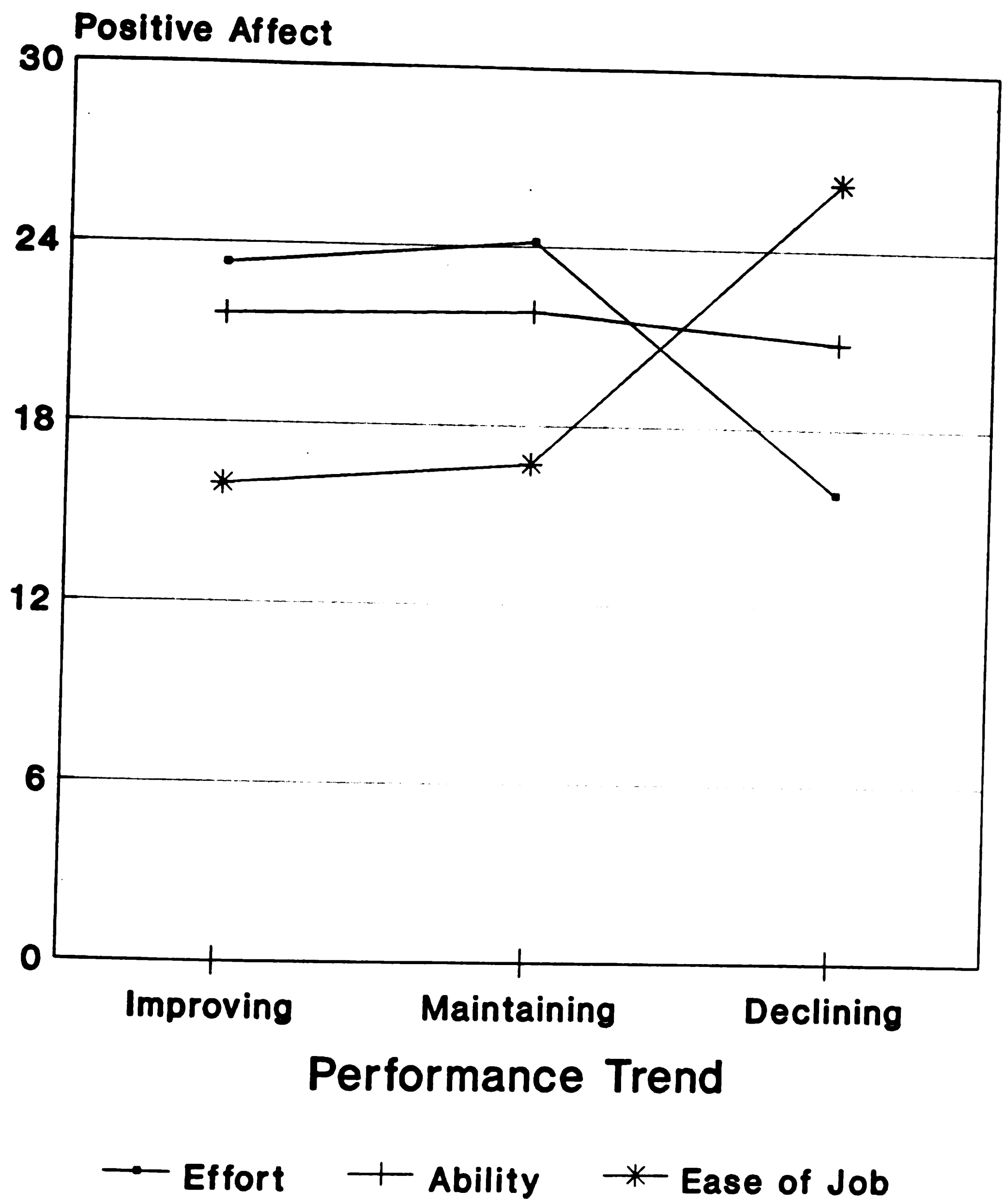
Note: Bottom numbers in cells indicate standard deviations

Table 31 (cont'd)

AVGS ACROSS INFO CELLS	PERFORMANCE TRENDS **Improv**	**Mntain**	**Declin**	**OVERALL GRAND MEANS**
AVGS ACROSS GENDER CELLS	20.28	20.90	21.00	20.72
	(263)	(249)	(253)	(765)
	5.42	4.96	5.79	5.41
Male Employees	20.26	21.18	21.20	20.87
	(132)	(120)	(128)	(380)
	5.65	4.88	5.64	5.42
Female Employees	20.31	20.64	20.79	20.57
	(131)	(129)	(125)	(385)
	5.21	5.04	5.94	5.39

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations



<u>Figure 20</u>. Performance Trend X Informational Cues Interaction Effect for Affect

also do not provide support for hypotheses H11-H11b since no main effect for employee gender was found, nor was an employee gender X performance trend interaction found.

In summary, the results of the above analyses for the effect of performance trend, informational cues, and gender of the target employee support the following statements. Performance trends affect expectations for future performance, but this does not necessarily translate into differences in promotion and pay decisions. These findings only partially support hypotheses H1 and H2.

Informational cues interact with performance trends to yield a strong effect on pay and promotion decisions, positive affect, and future expectations for employees. These findings support the hypothesized effects of locus and controllability on personnel decisions (H3-H4b), though indirectly. It is yet to be determined that effort is perceived to be more controllable than ability, and that ability is more controllable than ease of job. It also still remains to be shown that ease of job is considered more external in locus than ability or effort.

Employee gender seems to affect personnel decision making such that above average female employees who are improving, maintaining or declining in performance as a result of job characteristics are rewarded more than above average males employees who are improving, maintaining, or declining in performance as a result of job characteristics. These findings do not support H11-H11b, but they do suggest gender of the employee can affect personnel decision making, even when large amounts of performance related information are available. Given that performance trend, informational cues, and employee gender were found to affect personnel decision making, the next series of analyses were designed to determine if these same factors could affect attributions of causes of performance.

Effects of Performance Trend, Informational Cues, and Employee Gender on Attributions

A doubly multivariate repeated measures MANOVA with gender of the target employee, performance trend and informational cues as independent variables and perceived controllability, stability, and locus of causation as dependent variables was performed. The results of this analysis are presented in Table 32. The results suggest that performance trends and informational cues each significantly affected attributions, but these main effects were qualified by the performance trend X informational cues interaction.

Separate repeated measures univariate ANOVAs were conducted for each of the three dependent variables (perceived controllability, external locus of causation, and stability of causes of observed performance). These analyses provided a more specific explanation of the manner in which different attributions were affected by the independent variables in the MANOVA. The first ANOVA

Table 32

Repeated Measures MANOVA for the Overall Effect of Performance Trend, Informational Cues, and Employee Gender on Attributions

Effect	df	Error df	F	p-value
Constant	3	240	23513.07	.000
Between-Subjects Main Effects				
Performance Trend (T)	6	480	2.41	.027
Employee Gender (EG)	3	240	.89	.449
Between-Subjects Interactions				
EG X T	6	480	1.43	.202
Within-Subjects Main Effects				
Informational Cues (I)	6	237	35.78	.000
Within-Subjects Interactions				
T X I	12	474	7.95	.000
EG X I	6	237	1.37	.233
EG X T X I	12	474	.96	.484

Note: All *F* tests are reported using Wilk's Lambda

evaluated the effects of performance trend, informational cues, and target employee gender on perceived controllability. The results of this analysis are presented in Table 33, while the cell means are presented in Table 34.

A significant main effect of informational cues on perceived controllability was obtained, but this was qualified by the informational cues X performance trend and the informational cues X employee gender interactions. The main effect for informational cues indicates that decision makers considered effort to be significantly more controllable than ability, which was considered to be significantly more controllable than ease of job. These results provide strong support for hypotheses H7-H7b.

The test for the performance trend X informational cues interaction shows that improving performance which was due to effort or ability was considered to be significantly more controllable than improving performance which was due to ease of job, but effort and ability were not significantly different from one another. Maintaining performance which was due to effort was considered to be significantly more controllable than maintaining performance which was due to ability, which was considered to be significantly more controllable than maintaining performance which was due to ease of job. Declining performance which was due to effort was considered to be significantly more controllable than declining performance which was due to either ability or non-ease of the job, but ability and non-ease of job were

Table 33

Repeated Measures ANOVA for the Effects of Performance Trend, Informational Cues, and Employee Gender on Perceived Controllability

Effect	df	MS	F	p-value
Between-Subjects Effects				
Employee Gender (EG)	1	.26	.02	.882
Performance Trend (T)	2	20.99	1.77	.172
EG X T	2	9.35	.79	.455
Error	246	11.84		
Within-Subjects Effects				
Informational Cues (I)	2	1505.14	104.90	.000
T X I	4	101.33	7.06	.000
EG X I	2	45.51	3.17	.043
EG X T X I	4	12.39	.86	.486
Error	492	14.35		

Note: All F tests for within-subjects effects are reported using averaged tests of significance

Table 34

Cell Means of Controllability, Split by Performance Trend, Informational Cues, and Employee Gender

	PERFORMANCE TRENDS			
INFO TYPE	Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues	15.63 (88) 3.75	15.80 (83) 3.59	13.18 (85) 3.31	14.87 (256) 3.74
Male Employees	16.30 (44) 3.44	15.63 (40) 3.38	13.16 (43) 3.29	15.02 (127) 3.61
Female Employees	14.95 (44) 3.95	15.95 (43) 3.81	13.19 (42) 3.37	14.71 (129) 3.87
Effort Info Cues	16.56 (88) 3.82	17.67 (81) 3.27	17.79 (84) 3.58	17.32 (253) 3.61
Male Employees	16.34 (44) 3.85	17.02 (38) 3.64	17.17 (42) 3.55	16.83 (124) 3.67
Female Employees	16.77 (44) 3.83	18.23 (43) 2.84	18.40 (42) 3.55	17.79 (129) 3.49
EaseJob Info Cues	12.74 (88) 3.84	11.80 (82) 3.95	12.74 (85) 4.05	12.44 (255) 3.95
Male Employees	12.84 (44) 4.09	12.40 (40) 4.34	12.77 (43) 3.66	12.68 (127) 4.00
Female Employees	12.64 (44) 3.62	11.24 (42) 3.49	12.71 (42) 4.46	12.20 (128) 3.90

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

Table 34 (cont'd)

AVGS ACROSS INFO CELLS	PERFORMANCE TRENDS **Improv**	**Mntain**	**Declin**	**OVERALL GRAND MEANS**
AVGS ACROSS GENDER CELLS	14.97 (264) 4.12	15.08 (246) 4.35	14.55 (254) 4.30	14.87 (764) 4.26
Male Employees	15.16 (132) 4.12	14.98 (118) 4.25	14.34 (128) 4.00	14.83 (378) 4.12
Female Employees	14.79 (132) 4.14	14.77 (128) 4.46	14.77 (126) 4.59	14.91 (386) 4.39

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

not significantly different from each other. These results are graphically depicted in Figure 21.

The employee gender X performance informational cues interaction effect shows that effort informational cues were considered to be significantly more controllable for female employees than for male employees. None of the other differences between males and females were found to be significant. These results provide partial support for hypotheses H10 and H10c. The results do not support hypotheses H10a-H10b, nor do they support H10d-H10e. The results do suggest however, that employee gender exerts some effect on attributional formation, which in turn, appears to affect personnel decision making.

In sum, perceptions of controllability are strongly affected by the nature of informational cues provided, as hypothesized in Weiner's three-dimensional attributional taxonomy. Effort is considered to be more controllable than is ability, which is considered to be more controllable than is ease of job. These statements are qualified by the performance trend X informational cues and employee gender X informational cues interactions. Ability is considered to be less controllable than effort, but this is particularly true for employees exhibiting declining performance trends. Employee gender also affects attributional formation such that effort cues are considered to be more controllable for female employees than for male employees.

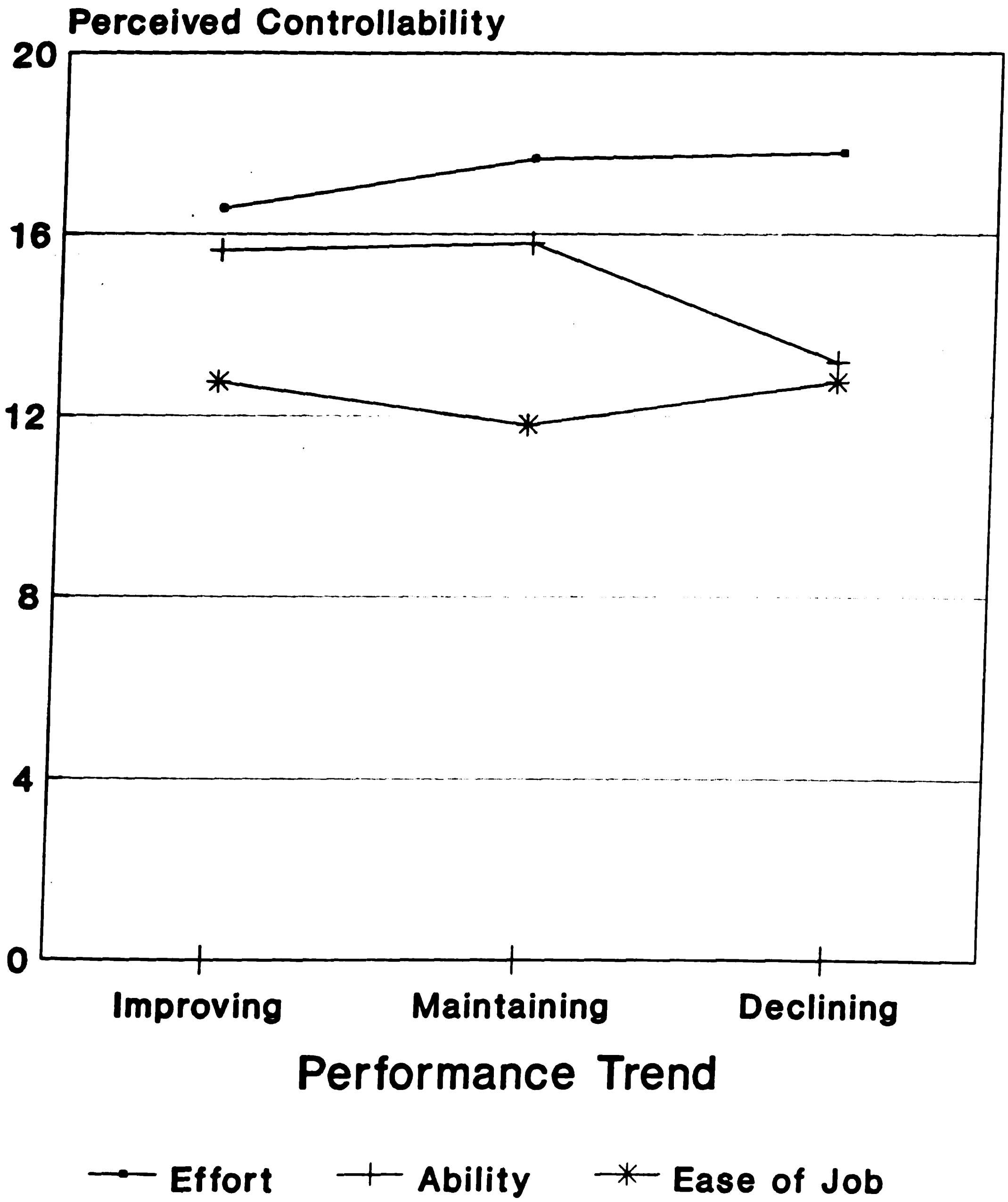


Figure 21. Performance Trend X Informational Cues Interaction Effect for Perceived Controllability

The next analysis was a repeated measures ANOVA which evaluated the effects of performance trend, informational cues, and target employee gender on perceived external locus of causation. The results of this analysis are presented in Table 35, while the cell means are presented in Table 36.

Significant main effects were obtained for performance trend and informational cues. The main effect for performance trend indicates that improving and declining performance trends were considered significantly more external than maintaining performance trends. The main effect for informational cues indicates that ability and effort cues were considered significantly more internal than ease of job cues, but ability and effort were not significantly different from each other. These effects were qualified by the performance trend X informational cues and employee gender X informational cues interactions.

The test for the performance trend X informational cues interaction shows that though effort and ability were considered to be more internal than ease of job, the size of mean differences varied by performance trend. The overall pattern, however, remained the same. Figure 22 graphically depicts this interaction effect. The results provide strong support for hypotheses H7 and H7c.

The significant employee gender X informational cues interaction indicates that effort cues were considered to be more internal for female employees than for male employees. No other gender differences were significant. These results

Table 35

Repeated Measures ANOVA for the Effects of Performance Trend, Informational Cues, and Employee Gender on Perceived Locus of Causation

Effect	df	MS	F	p-value
Between-Subjects Effects				
Employee Gender (EG)	1	5.43	.43	.511
Performance Trend (T)	2	75.05	5.98	.003
EG X T	2	6.18	.49	.612
Error	248	12.55		
Within-Subjects Effects				
Informational Cues (I)	2	2339.19	138.87	.000
T X I	4	220.74	13.10	.000
EG X I	2	56.77	3.37	.035
EG X T X I	4	13.11	.78	.540
Error	496	16.84		

Note: All F tests for within-subjects effects are reported using averaged tests of significance

Table 36

Cell Means of External Locus of Causality, Split by Performance Trend, Informational Cues, and Employee Gender

INFO TYPE	PERFORMANCE TRENDS Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues	12.78 (87) 3.76	11.41 (83) 3.12	14.38 (85) 4.16	12.87 (255) 3.88
Male Employees	12.89 (44) 3.43	11.78 (40) 2.66	14.19 (43) 3.81	12.98 (127) 3.46
Female Employees	12.67 (43) 4.11	11.07 (40) 2.66	14.57 (42) 4.53	12.76 (128) 4.28
Effort Info Cues	12.72 (87) 3.26	11.24 (83) 3.23	14.15 (85) 4.75	12.72 (255) 3.98
Male Employees	13.16 (44) 3.33	11.78 (40) 3.36	14.77 (43) 4.31	13.27 (127) 3.86
Female Employees	12.28 (43) 3.17	10.74 (43) 3.07	13.52 (42) 5.14	12.17 (128) 4.04
EaseJob Info Cues	18.45 (88) 4.12	19.13 (83) 4.20	16.48 (85) 4.46	18.02 (256) 4.39
Male Employees	18.61 (44) 4.01	18.13 (40) 4.52	16.14 (43) 4.67	17.62 (127) 4.50
Female Employees	18.30 (44) 4.26	20.07 (43) 3.70	16.83 (42) 4.25	18.41 (129) 4.26

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

Table 36 (cont'd)

AVGS ACROSS INFO CELLS	PERFORMANCE TRENDS **Improv**	**Mntain**	**Declin**	**OVERALL GRAND MEANS**
AVGS ACROSS GENDER CELLS	14.67	13.93	15.00	14.54
	(262)	(249)	(255)	(766)
	4.59	5.11	4.57	4.77
Male Employees	14.89	13.89	15.03	14.62
	(132)	(120)	(129)	(381)
	4.45	4.66	4.32	4.49
Female Employees	14.45	13.96	14.98	14.46
	(130)	(129)	(126)	(385)
	4.74	5.51	4.82	5.04

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

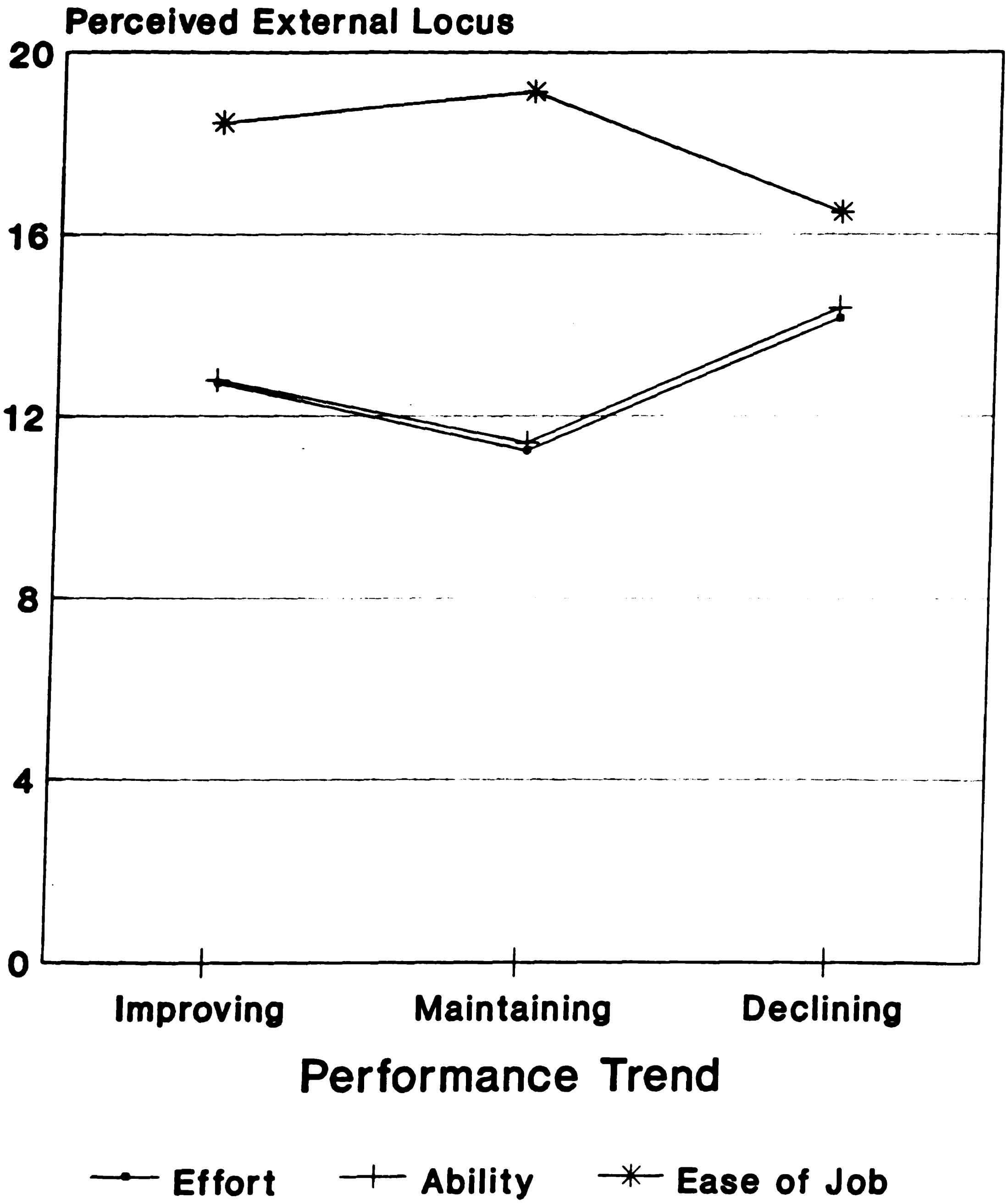


Figure 22. Performance Trend X Informational Cues Interaction Effect for Perceived External Locus

provide partial support for hypotheses H10 and H10c, suggesting that employee gender affects the formation of attributions about causes of employee performance.

In sum, informational cues strongly affect perceptions of locus of causality in a manner consistent with Weiner's attributional taxonomy. Effort and ability are both considered to be more internal in locus of causality than is ease of job. Effort and ability do not seem to differ in perceived locus of causality. Performance trends affect perceptions of locus such that maintaining performance trends are considered to be more internal than are improving or declining performance trends. The results also show that the main effects of performance trend and informational cues are qualified by performance trend X informational cues and employee gender X informational cues interactions.

The next analysis on attributions involved a repeated measures ANOVA which evaluated the effects of performance trend, informational cues and employee gender on perceived stability. The results are presented in Table 37, and the cell means are presented in Table 38.

A main effect for informational cues was obtained. Ability was considered to be significantly more stable than effort or ease of job, but ease of job and effort were not significantly different from one another. This main effect was qualified by the significant effect of the performance trend X informational cue interaction, and to a certain

Table 37

Repeated Measures ANOVA for the Effects of Performance Trend, Informational Cues, and Employee Gender on Perceived Stability

Effect	df	MS	F	p-value
Between-Subjects Effects				
Employee Gender (EG)	1	18.79	1.75	.187
Performance Trend (T)	2	7.92	.74	.479
EG X T	2	28.32	2.64	.073
Error	248	10.73		
Within-Subjects Effects				
Informational Cues (I)	2	64.89	6.41	.002
T X I	4	24.49	2.42	.048
EG X I	2	.88	.09	.917
EG X T X I	4	19.69	1.95	.102
Error	496	10.12		

Note: All F tests for within-subjects effects are reported using averaged tests of significance

Table 38

Cell Means of Stability, Split by Performance Trend, Informational Cues, and Employee Gender

	PERFORMANCE TRENDS			
INFO TYPE	Improv	Mntain	Declin	AVGS ACROSS TREND CELLS
Ability Info Cues	16.76 (87) 3.09	17.27 (82) 2.80	16.41 (85) 3.69	16.81 (254) 3.23
Male Employees	16.12 (43) 3.00	16.79 (39) 2.66	17.19 (43) 3.65	16.70 (125) 3.15
Female Employees	17.39 (44) 3.08	17.70 (43) 2.89	15.62 (42) 3.60	16.91 (129) 3.30
Effort Info Cues	16.06 (88) 3.02	16.23 (82) 2.97	15.19 (85) 3.21	15.82 (255) 3.09
Male Employees	15.98 (44) 2.89	15.72 (39) 2.69	15.05 (43) 3.27	15.58 (126) 2.97
Female Employees	16.14 (44) 3.17	16.69 (43) 3.15	15.33 (42) 3.18	16.06 (129) 3.19
EaseJob Info Cues	15.93 (88) 3.65	15.82 (83) 3.46	16.53 (85) 3.05	16.09 (256) 3.40
Male Employees	16.18 (44) 3.62	15.33 (40) 3.64	16.42 (43) 2.80	15.99 (127) 3.37
Female Employees	15.68 (44) 3.72	16.28 (43) 3.27	16.64 (42) 3.33	16.19 (129) 3.44

Note: Numbers in parentheses indicate number of observations

Note: Bottom numbers in cells indicate standard deviations

Table 38 (cont'd)

AVGS ACROSS INFO CELLS	PERFORMANCE TRENDS **Improv**	**Mntain**	**Declin**	**OVERALL GRAND MEANS**
AVGS ACROSS GENDER CELLS	16.25 (263) 3.28	16.44 (247) 3.14	16.04 (255) 3.37	16.24 (765) 3.26
Male Employees	16.09 (131) 3.16	15.94 (118) 3.08	16.22 (129) 3.35	16.09 (378) 3.20
Female Employees	16.40 (132) 3.39	16.89 (129) 3.14	15.87 (126) 3.39	16.39 (387) 3.33

Note: Numbers in parentheses indicate number of observations

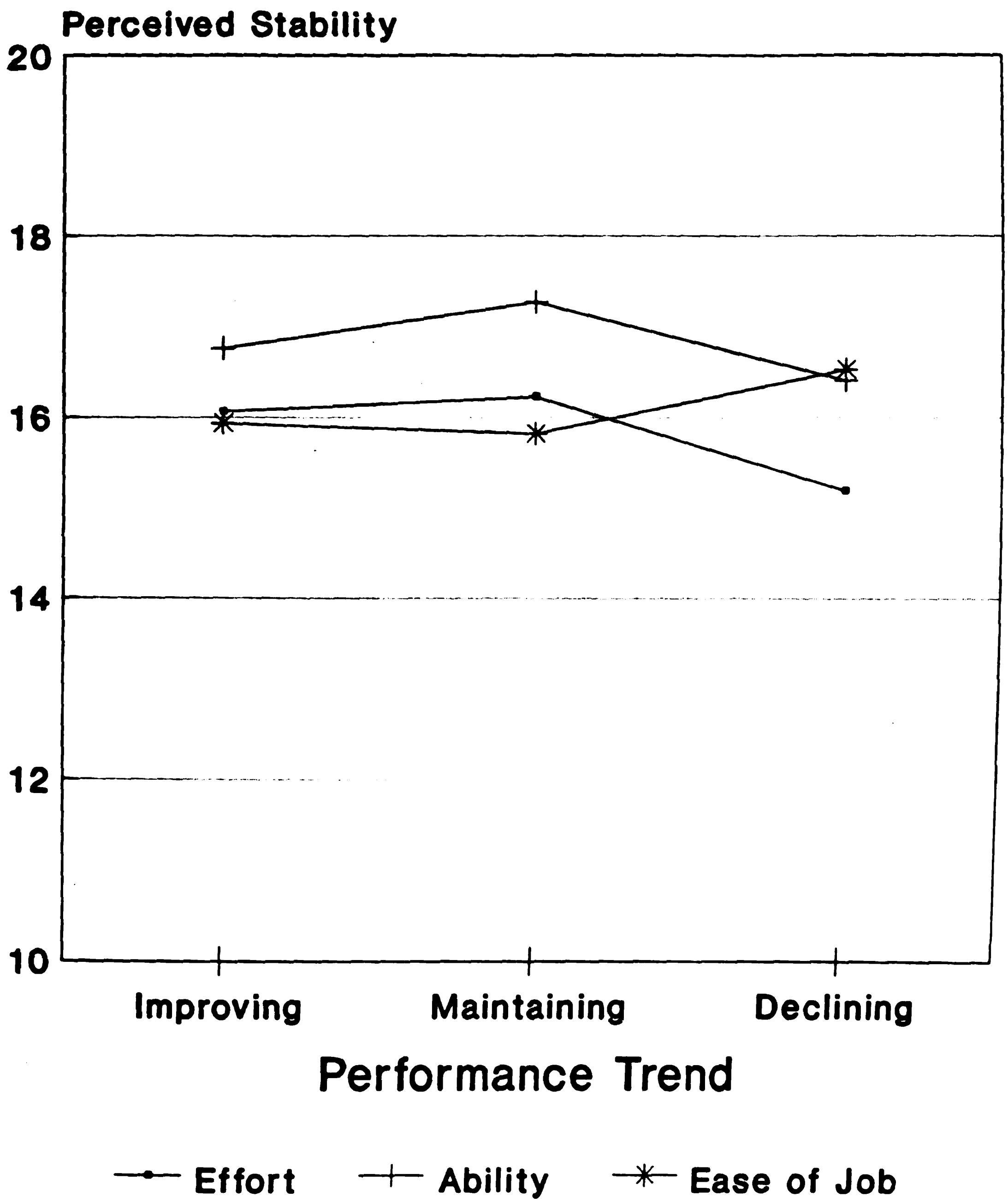
Note: Bottom numbers in cells indicate standard deviations

degree, by the employee gender X performance trend interaction ($p \leq .07$).

The significant performance trend X informational cues interaction indicates that perceptions of stability varied depending on the performance trend and informational cues provided. In the improving performance trend condition, no significant differences were obtained in perceived stability as a function of informational cues provided. In the maintaining performance trend condition, ability was perceived to be significantly more stable than was effort or ease of job, but effort and ease of job were not significantly different. In the declining performance trend condition, effort was viewed as more unstable than was ability or ease of job, but ability and ease of job were not significantly different from each other. These results are graphically depicted in Figure 23.

The significant employee gender X performance trend interaction effect shows that causes of above average maintaining performance for female employees were considered to be significantly more stable than causes of above average maintaining performance for male employees. There were no other significant differences in perceived stability for males and females.

The results of the analysis for perceived stability do not support hypotheses H5 and 7d, since no main effect for trend was obtained. The results do provide support for



<u>Figure 23</u>. Performance Trend X Informational Cues Interaction Effect for Perceived Stability

hypothesis H8, but they directly contradict hypothesis H8a and they do not support H8b.

As a whole, the results of the analyses on attributions indicate that effort, ability, and ease of job vary along the dimensions of perceived locus of causation, controllability, and to some degree, stability. The findings are very consistent with the attributional dimensions proposed by Weiner which were modified and presented in Figure 2.

Findings regarding the effects of gender are more equivocal. While gender of employee interacts with informational cues to affect perceived locus and controllability of performance, obtained findings are not consistent with hypotheses. Employee gender also interacts with performance trend to affect perceived stability, but again, these findings are not consistent with hypothesized effects. The findings do indicate, however, that employee gender affects the formation of attributions of causation.

When analyses for personnel decisions and attributions are considered together, several conclusions can be drawn. First, informational cues affect perceived locus of causation and controllability as hypothesized. Effort is considered to be more controllable than ability, which is considered to be more controllable than ease of job. Also, effort and ability are considered to be more internal in locus of causation than is ease of job.

Second, results of both analyses suggest that perceptions of locus of causation and controllability interact with observed performance trends to strongly affect personnel decisions, even when all employees show the same above average performance level. Employees who show improving or maintaining above average performance trends which are due to controllable or internal causes are rewarded more than employees who show the same performance trends which are due to uncontrollable or external causes. Conversely, employees who show declining above average performance trends which are due to internal and controllable causes are rewarded much less than employees who show declining above average performance trends which are due to external and uncontrollable causes.

Third, gender of the employee interacts with informational cues to affect personnel decisions, but it is not clear whether these effects occur through attributional processes. For example, gender of the employee interacts with informational cues to affect perceived locus and controllability of effort, and also with performance trend to affect perceived stability. However, pay and promotion decisions are affected by the interaction of employee gender with ease of job cues, not effort and performance trend as noted above. Also, female employees receive more reward than male employees, but only when their performance is due to ease (or non-ease) of the job, particularly when the employee exhibits a declining performance trend (in above average performance).

The results of the above analyses have supported hypotheses regarding the important role that causal attributions play in the process of making personnel decisions. It was hypothesized earlier, based on group membership studies, that gender group status would affect attributional processes and that it would affect personnel decision making. The next set of analyses were designed to investigate these hypothesized effects.

Effects of Performance Trend, Informational Cues, and Gender Group Membership on Personnel Decisions

A doubly multivariate repeated measures MANOVA was conducted using gender group membership status, performance trend, and information cues as independent variables and with promotion, pay, affect, and expectations as dependent variables. Participant responses to target employees were coded as belonging to either the same or different gender group. This analysis was performed to test the hypothesis that performance trends, informational cues, and employee gender group membership would affect overall personnel decisions. The results of this MANOVA are presented in Table 39.

As in previous analyses, the results indicate that performance trends and informational cues significantly affected personnel decisions. These main effects were qualified by the significant performance trend X

Table 39

Repeated Measures MANOVA for the Overall Effect of Performance Trend, Informational Cues, and Gender Group Membership on Personnel Decisions

Effect	df	Error df	F	p-value
Constant	4	239	5667.38	.000
Between-Subjects Main Effects				
Performance Trend (T)	6	478	4.22	.000
Gender Group (GG)	4	239	1.82	.125
Between-Subjects Interactions				
GG X T	8	478	1.52	.149
Within-Subjects Main Effects				
Informational Cues (I)	8	235	6.87	.000
Within-Subjects Interactions				
T X I	16	470	33.45	.000
GG X I	8	235	1.60	.126
GG X T X I	16	470	1.11	.345

Note: All *F* tests are reported using Wilk's Lambda

informational cues interaction. The main effect for gender group membership was not significant, nor were any of the interactions involving gender group membership. No further analyses involving gender group membership were conducted.

The results do not provide support for hypotheses H15 to H15b. Gender group membership did not interact with cues to affect personnel decision making. Even though gender group membership did not affect personnel decision making, it is possible that it could have an impact on attributional processes. The following section describes analyses used to investigate this possibility.

Effects of Performance Trend, Informational Cues, and Gender Group Membership on Attributions

A doubly multivariate repeated measures MANOVA was conducted to investigate the effects of performance trend, informational cues, and gender group membership on causal attributions. The results are presented in Table 40.

As previous analyses have indicated, informational cues and performance trend significantly affected perceived attributions. The performance trend x informational cues interaction qualified the main effects of informational cues and performance trend on attributions. No significant effects involving gender group membership were detected, and no further analyses were conducted. These results do not support hypotheses H12-H14e.

The results suggest that gender group membership does not have an affect on attributional processes and personnel

Table 40

Repeated Measures MANOVA for the Overall Effect of Performance Trend, Informational Cues, and Gender Group Membership on Attributions

Effect	*df*	Error *df*	*F*	p-value
Constant	3	240	23088.53	.000
Between-Subjects Main Effects				
Performance Trend (T)	6	480	2.36	.030
Gender Group (GG)	3	240	1.18	.320
Between-Subjects Interactions				
GG X T	6	480	.63	.705
Within-Subjects Main Effects				
Informational Cues (I)	6	237	35.53	.000
Within-Subjects Interactions				
T X I	12	474	7.86	.000
GG X I	6	237	.18	.983
GG X T X I	12	474	.79	.666

Note: All *F* tests are reported using Wilk's Lambda decision making for above average employees. These findings suggest one of two possibilities. Either group related attributional biases may be ameliorated by providing enough performance related information, or such attributional biases do not generalize to gender group membership.

Earlier it was demonstrated that ability, effort, and ease of job varied in hypothesized directions on perceived controllability, locus and stability. Further, it was shown that these informational cues interacted with performance trend to affect personnel decision making. It is still necessary, however, to demonstrate that the actual perceptions of controllability, stability, and locus of causation interact with performance trend to affect personnel decision outcomes.

Effects of Perceived Attributions and Performance Trend on Personnel Decisions

Though previous analyses provided strong support for hypotheses H3-H4b, the evidence provided was indirect. It was demonstrated that effort, ability, and ease of job cues varied along attributions as hypothesized. It was further demonstrated that these informational cues interacted with performance trend to influence personnel decisions, also as hypothesized. It was inferred, based on these results, that attributions interacted with performance trend to affect personnel decision making.

Based on the model presented in Figure 3, however, it is the actual perceptions of the decision maker regarding the three attributional dimensions that need to be linked to personnel decisions. In order to accomplish the analyses necessary to provide support for such linkages, a repeated measures regression approach was used (Cohen & Cohen, 1983; Hollenbeck, Ilgen, & Sego, in press).

A repeated measures regression analysis begins by partitioning the variance in the dependent variable into between and within subjects effects. For the purposes of discussion, assume the dependent variable is pay decisions made by participants. Using normal regression methods, one would have to dummy code all of the participants in the study with n - 1 dummy codes in order to determine the variance in pay decisions which is due to within subjects effects. An alternative to this unwieldy method is provided in Cohen and Cohen (1983, Chapter 11).

To partition the variance in the dependent variable of pay decisions, one begins by computing averages across the responses provided by each participant. In this case, average scores in pay decisions for each participant across the three target responses are computed. This provides a total of 256 average scores for pay decisions, since the number of participants was 256. The variance of these <u>average</u> scores gives the variance due to <u>between</u> subjects effects. Assume this is 20. Next, the variance across <u>all</u> 768 scores provided by participants is computed (768=256 x 3); this is the <u>total</u> variance in the dependent variable. Assume this is 80. The proportion of variance accounted for by between subjects effects is the ratio of variance of the average scores (n=256) to the variance across all scores (n=768). In this case, the proportion of variance due to between subjects effects is .25 (20/80). The corresponding degrees of freedom are 255 (256-1).

Since between and within subjects effects are assumed to be orthogonal, the proportion of variance due to within subjects effects is simply one minus the proportion due to between subjects effects. In this case, the proportion due to within subjects effects is .75 (1-.25). The corresponding degrees of freedom for the within subjects effects are 512 (768-256).

Once the variance in the data is partitioned, one must enter the independent variables of interest in several hierarchical steps. All within subjects variables are entered first, including interactions of those variables, if they are relevant to the design of the experiment. The $\underline{F}$ tests and increments in R^2 for these variables are based upon the within subjects proportion of the total variance (.75) and the 512 degrees of freedom.

Next, all between subjects variables and their interactions are entered into the regression equation. All of the $\underline{F}$ tests and increments in R^2 for these variables are based upon the between subjects proportion of the total variance (.25) and the 255 degrees of freedom.

Finally, all interaction terms which include within <u>and</u> between subjects variables are entered. The $\underline{F}$ tests and increments in R^2 for these interaction terms are based upon the within subjects proportion of the total variance (.75) and the 512 degrees of freedom.

The normal $\underline{F}$ and $\underline{t}$ statistics provided by standard computer printouts must be adjusted for the proportion of variance and the degrees of freedom in the numerator and denominator. The resulting analysis yields the same outcome as if one had dummy coded all 256 participants in the study to partition the variance into between and within subjects effects. In a factorial design with equal sample sizes in each cell, the repeated measures regression approach will yield $\underline{F}$ tests which are identical, within rounding error, to the mixed model analysis of variance (Winer, 1971). See Cohen and Cohen (1983, Chapter 11) and Hollenbeck, et al. (in press) for a more extensive treatment of this procedure.

The primary advantage of the repeated measures regression approach in this study is that one can regress personnel decisions on the actual perceptions of controllability, stability, and locus of causation. Furthermore, interaction terms between perceived attributions and performance trend or employee gender can be included in the analyses. This can be done without having to dichotomize participants' perceptions into low and high categories, and all available degrees of freedom are used.

The resulting analysis is similar in a sense, to a policy capturing analysis. The "weight" of various attributions and their interactions can be determined using standard regression techniques, adjusted for the variance partitioning procedure. A final advantage is that partitioning of the variance into within and between subjects effects reduces error terms and increases the power of all analyses conducted.

The first repeated measures regression analysis regressed pay decisions on employee gender, performance trend, perceived locus of causation, perceived controllability, and perceived stability, along with their interaction terms. The first step entered perceived locus, controllability and stability (within subjects effects). The next step entered the interactions between the three perceptions (within).

Performance trend was entered in the third step (between), while gender of the target employee was entered in the fourth step (between). Two dummy codes represented performance trend, one for improving (Trend 1) and one for declining (Trend 3), and maintaining performance trend was the comparison group. A single dummy code represented gender, with male employees as the comparison group. In the fifth step, the interaction terms for performance trend and gender were entered (between).

In the sixth step, the interactions between employee gender and attributional perceptions (perceived controllability, locus, and stability) were entered (within). The seventh, eighth, and ninth steps entered the interaction terms between performance trend and attributions in a hierarchical fashion (within). The interaction terms for perceived controllability and performance trend were entered last, to control for the effects of interactions involving locus and stability. In the final three steps, triple interaction terms between performance trend, employee gender, and attributions were entered, also in a hierarchical fashion (within). Again, interaction terms involving controllability were entered in the last step. Table 41 presents the results of the significance tests, and Table 42 presents the regression equations associated with the entry of each block of variables.

The variance of pay decisions across all possible cases was 60.202. The variance of average pay decisions across the participants was 16.307. The proportion of variance due to between subjects effects was 27.1% (16.307/60.202), while the variance due to within subjects effects was 72.9% (1 - 27.1%). These are the figures used to adjust the $\underline{F}$ and $\underline{t}$ tests in the regression analysis described above. Missing data reduced the total number of observations to 757.

The effects of attributions were the only statistically significant main effects in the results. Above average performance which was internal or stable was rewarded more than above average performance which was external or unstable. Employee gender and performance trend did not significantly affect pay decisions, and none of the interactions involving employee gender were significant.

Table 41

Results of Repeated Measures Regressions for Pay Decisions Using Employee Gender, Performance Trend, and Attributions

Step	Indpndnt Vars	R^2 for Equation	R^2 Incrmnt	Incrmnt Btwn	Incrmnt Within
1	Control (C) Locus (L) Stability (S)	.119	.119		.163**
2	L X S C X S L X C	.121	.002		.003
3	Trend 1 (T1) Trend 3 (T3)	.122	.001	.003	
4	Employee Gender (EG)	.123	.001	.002	
5	EG X T1 EG X T3	.123	.000	.001	
6	EG X S EG X L EG X C	.124	.001		.001
7	T1 X S T3 X S	.127	.003		.004
8	T1 X L T3 X L	.240	.113		.155**
9	T1 X C T3 X C	.271	.031		.043**
10	T1 X S X EG T3 X S X EG	.274	.003		.004
11	T1 X L X EG T3 X L X EG	.275	.001		.001
12	T1 X C X EG T3 X C X EG	.278	.003		.004

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Table 42

Regression Equations for Prediction of Pay Decisions

Using Employee Gender, Performance Trend, and Attributions

Step 1 - Enter Attributions
Y' = -.523(L)** + .302(S)** + -.056(C) + 36.53

Step 2 - Enter interactions in Attributions
Y' = -.826(L)** + .006(S) + -.506(C) + .014(LXC) + .015(CXS) + .007(LXS) + 44.57

Step 3 - Enter Performance Trend
Y' = -.814(L)* + -.004(S) + -.495(C) + .013(LXC) + .015(CXS) + .007(LXS) + .471(T1) + .321(T3) + 44.14

Step 4 - Enter Employee Gender
Y' = -.843(L)* + -.030(S) + -.516(C) + .014(LXC) + .016(CXS) + .008(LXS) + .477(T1) + .324(T3) + .374(EG) + 44.56

Step 5 - Enter Employee Gender by Trend interactions
Y' = -.854(L)* + -.044(S) + -.519(C) + .014(LXC) + .016(CXS) + .008(LXS) + .621(T1) + .709(T3) + .726(EG) + -.271(EGXT1) + -.764(EGXT3) + 44.65

Step 6 - Enter Gender by Attributions interactions
Y' = -.838(L)* + -.129(S) + -.489(C) + .013(LXC) + .017(CXS) + .009(LXS) + .598(T1) + .728(T3) + 1.090(EG) + -.228(EGXT1) + -.723(EGXT3) + -.047(EGXL) + -.091(EGXC) + .102(EGXS) + 44.92

Step 7 - Enter Trend by Stability interaction
Y' = -.807(L)* + -.198(S) + -.429(C) + .013(LXC) + .015(CXS) + .008(LXS) + .496(T1) + -4.139(T3) + 1.430(EG) + -.278(EGXT1) + -.756(EGXT3) + -.062(EGXL) + -.097(EGXC) + .105(EGXS) + .302(T3XS) + .007(T1XS) + 45.54

Step 8 - Enter Trend by External Locus interaction
Y' = -1.270(L)** + -.253(S) + -.266(C) + .006(LXC) + .008(CXS) + .014(LXS) + -1.165(T1) + -24.115(T3)** + 3.875(EG) + -.580(EGXT1) + -1.001(EGXT3) + -.076(EGXL) + -.110(EGXC) + -.010(EGXS) + .398(T3XS)* + .030(T1XS) + .119(T1XL) + 1.264(T3XL)** + 52.09

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Table 42 (cont'd)

Step 9 - Enter Trend by Controllability interaction

Y' = -1.067(L)** + -.117(S) + .062(C) + .006(LXC) + .004(CXS) + .011(LXS) + -1.348(T1) + -2.395(T3) + 1.989(EG) + -.286(EGXT1) + -.679(EGXT3) + -.047(EGXL) + -.056(EGXC) + .022(EGXS) + .157(T3XS) + .010(T1XS) + .109(T1XL) + .857(T3XL)** + -.819(T3XC)** + .029(T1XC) + 43.662

Step 10 - Enter Trend X Stability X Employee Gender

Y' = -1.064(L)** + -.275(S) + .067(C) + .008(LXC) + .003(CXS) + .011(LXS) + -6.140(T1) + -4.574(T3) + -3.989(EG) + 10.703(EGXT1) + 4.788(EGXT3) + -.045(EGXL) + -.048(EGXC) + .376(EGXS) + .329(T3XS) + .358(T1XS) + .075(T1XL) + .835(T3XL)** + -.819(T3XC)** + .009(T1XC) + -.331(T3XSXEG) + -.672(T1XSXEG) + 46.084

Step 11 - Enter Trend X Locus X Employee Gender

Y' = -1.109(L)** + -.290(S) + .053(C) + .008(LXC) + .004(CXS) + .010(LXS) + -7.490(T1) + -5.551(T3) + -5.722(EG) + 13.724(EGXT1) + 6.769(EGXT3) + .047(EGXL) + -.042(EGXC) + .397(EGXS) + .334(T3XS) + .368(T1XS) + .163(T1XL) + .901(T3XL)** + -.841(T3XC)** + .004(T1XC) + -.350(T3XSXEG) + -.712(T1XSXEG) + -.166(T1XLXEG) + -.117(T3XLXEG) + 47.034

Step 12 - Enter Trend X Controllability X Employee Gender

Y' = -1.022(L)** + -.254(S) + .144(C) + .008(LXC) + .004(CXS) + .008(LXS) + -1.256(T1) + -5.537(T3) + -.386(EG) + -.048(EGXT1) + 5.938(EGXT3) + -.070(EGXL) + -.247(EGXC) + .361(EGXS) + .358(T3XS) + .344(T1XS) + .032(T1XL) + .882(T3XL)** + -.849(T3XC)** + -.258(T1XC) + -.370(T3XSXEG) + -.633(T1XSXEG) + .125(T1XLXEG) + -.075(T3XLXEG) + .035(T3XCXEG) + .552(T1XCXEG) + 44.210

Note: * indicates $\underline{p} \leq .05$
Note: ** indicates $\underline{p} \leq .01$

The only significant interaction effects found were for the external locus of causality X performance trend and controllability X performance trend variables.

It is noteworthy that controllability interacted with performance trends to exert a significant effect on pay decisions, even when locus and the locus x trend interaction variables were previously entered into the regression equation. This suggests that though external locus and controllability are related constructs (r = -.56), controllability adds prediction in pay decisions beyond the influence of external locus of causality.

The b weights for equation 8 indicate that the slope of the regression line for the effect of external locus on pay decisions was not significantly different between improving trends and maintaining trends (b = .119 for T1 X Locus, n.s.), but the slope for the effect of locus on pay was significantly different between declining trends and maintaining trends (b = 1.264 for T3 X Locus, $p \leq .01$).

Similarly, the b weights for equation 9 indicate that the slope for the effect of controllability on pay decisions was not significantly different between improving trends and maintaining trends (b = .029 for T1 X Control) but the difference in the slope for the effect of controllability on pay decisions was significantly different between declining trends and maintaining trends (b = -.819 T3 X Control, $p \leq$ .01).

These results strongly support hypotheses H3 to H4b. Declining trends which are external or uncontrollable are rewarded more than declining trends which are internal or controllable, and improving or maintaining trends which are external or uncontrollable are rewarded less than improving trends which are internal or controllable.

Figures 24 and 25 graphically represent the interactions between controllability or external locus of causality and performance trends. They were created by substituting appropriate group values and means into equations 8 and 9, and then plotting the equations for perceptions of external locus of causality and controllability one SD above and below their respective means.

A second repeated measures regression analysis was conducted by regressing promotion decisions on employee gender, performance trend, perceived locus of causation, perceived controllability, and perceived stability, along with their interaction terms. The same hierarchical order of entry employed for pay decisions was used for promotion decisions. First, perceived locus, controllability and stability were entered. Next, the interactions between the three attributional perceptions were entered. Performance trend was entered in the third step, and gender of the target employee was entered in the fourth step. As before, performance trend was represented by two dummy codes, one for improving trend (Trend 1) and one for declining trend

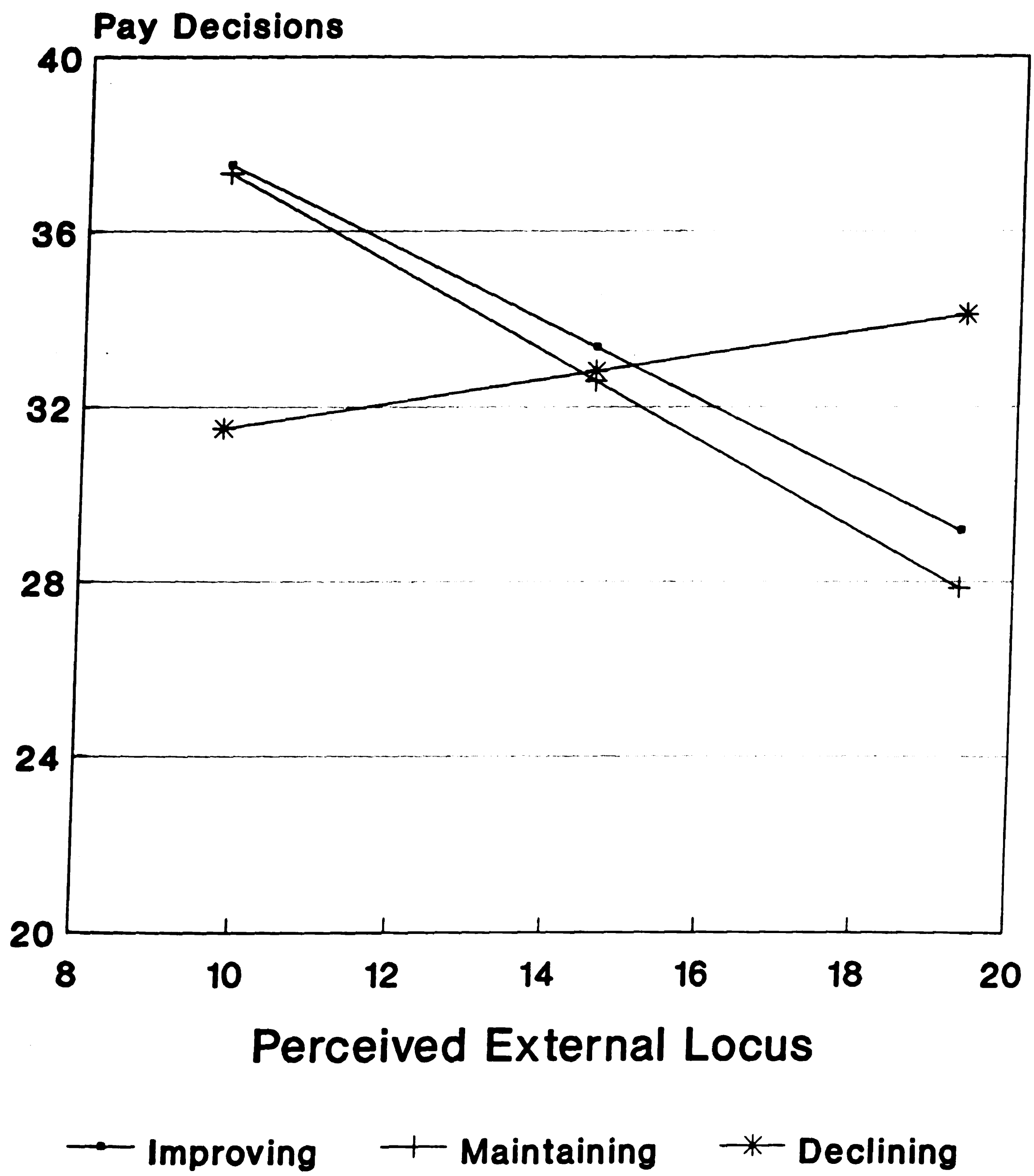


Figure 24. Interaction Effect of External Locus of Causality and Performance Trend for Pay Decisions

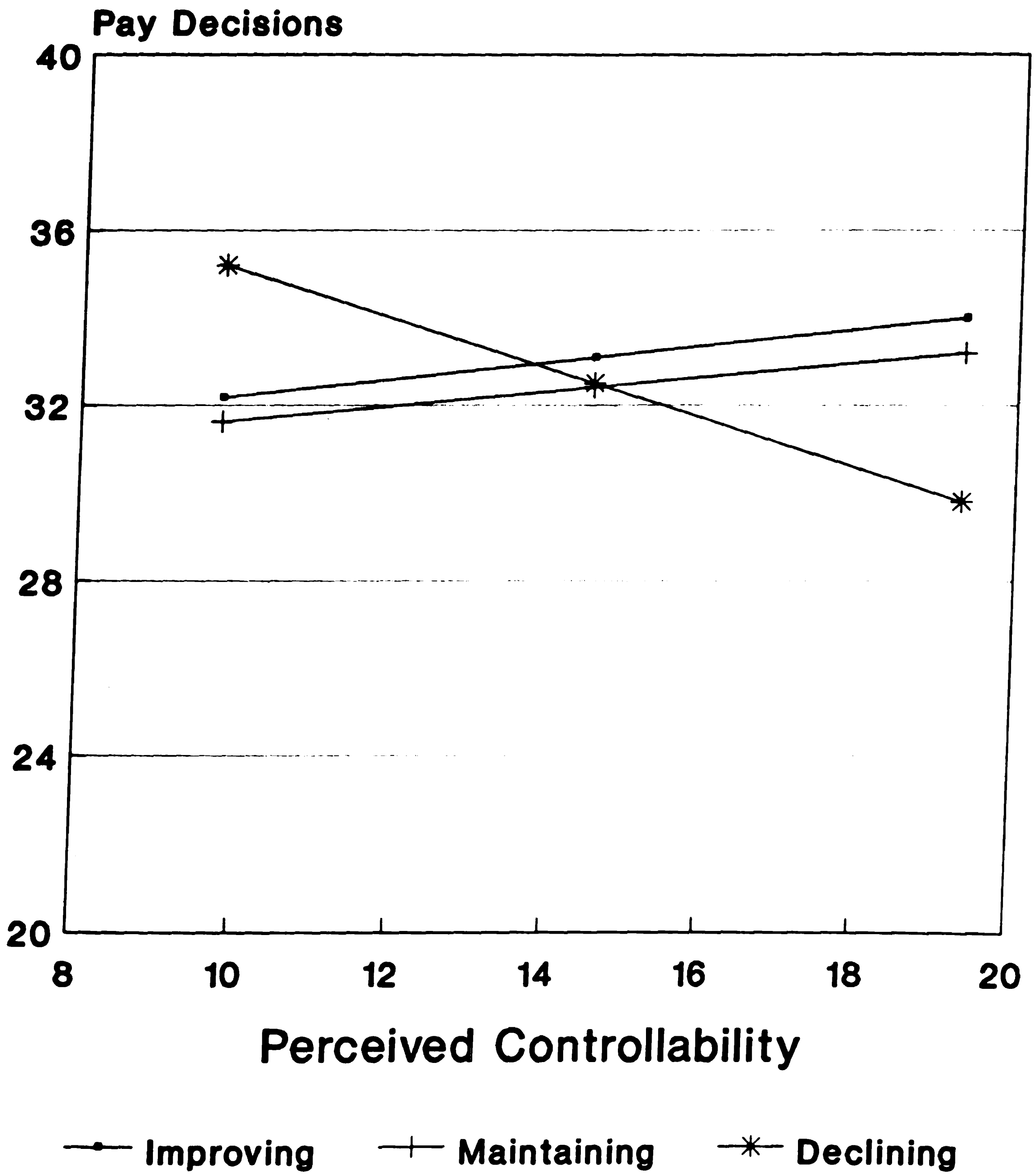


Figure 25. Interaction Effect of Perceived Controllability and Performance Trend for Pay Decisions

(Trend 3), with maintaining performance trend as the comparison group. Employee gender was represented by a single dummy code. The interaction terms for performance trend and gender were entered in the fifth step. In the sixth step, interactions between employee gender and attributional perceptions (perceived controllability, locus,and stability) were entered. In the seventh, eighth, and ninth steps, interaction terms between performance trend and attributions were entered. In the final three steps, the triple interactions between performance trend, employee gender, and attributions were entered. Table 43 presents the results of the significance tests, and Table 44 presents the regression equations associated with the entry of each block of variables. The findings for promotion decisions were very similar to the findings for the pay decisions.

The variance of promotion decisions across all possible cases was 28.887. The variance of average promotion decisions across the participants was 6.637. The proportion of variance due to between subjects effects was, therefore, 23.0% (6.637/28.887), while the variance due to within subjects effects was 77.0% (1 - 23.0%). These are the figures used to adjust the $\underline{F}$ and $\underline{t}$ tests in the regression analysis described above. Missing data reduced the total number of observations to 755.

As was found in the results for pay decisions, the only main effects obtained in the results were for the effects of attributions. Above average performance which was internal

Table 43

Results of Repeated Measures Regressions for Promotion Decisions Using Employee Gender, Performance Trend, and Attributions

Step	Indpndnt Vars	R^2 for Equation	R^2 Incrmnt	Incrmnt Btwn	Incrmnt Within
1	Control (C) Locus (L) Stability (S)	.119	.119		.154**
2	L X S C X S L X C	.133	.014		.019*
3	Trend 1 (T1) Trend 3 (T3)	.133	.000	.000	
4	Employee Gender (EG)	.134	.001	.005	
5	EG X T1 EG X T3	.135	.001	.002	
6	EG X S EG X L EG X C	.137	.003		.004
7	T1 X S T3 X S	.138	.001		.001
8	T1 X L T3 X L	.238	.100		.130**
9	T1 X C T3 X C	.256	.018		.023**
10	T1 X S X EG T3 X S X EG	.258	.001		.002
11	T1 X L X EG T3 X L X EG	.259	.001		.001
12	T1 X C X EG T3 X C X EG	.259	.000		.001

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Table 44

<u>Regression Equations for Prediction of Promotion Decisions Using Employee Gender, Performance Trend, and Attributions</u>

Step 1 - Enter Attributions
Y' = -.320(L)** + .245(S)** + .026(C) + 14.03

Step 2 - Enter interactions in Attributions
Y' = -.638(L)** + -.382(S) + -.831(C)** + .015(LXC) + .038(CXS)** + .007(LXS) + 27.77

Step 3 - Enter Performance Trend
Y' = -.639(L)* + -.383(S) + -.834(C)** + .015(LXC) + .038(CXS)* + .007(LXS) + -.084(T1) + .000(T3) + 27.83

Step 4 - Enter Employee Gender
Y' = -.610(L)* + -.359(S) + -.814(C)** + .014(LXC) + .038(CXS)* + .006(LXS) + -.090(T1) + -.003(T3) + -.374(EG) + 27.43

Step 5 - Enter Employee Gender by Trend interactions
Y' = -.603(L)* + -.349(S) + -.807(C)** + .014(LXC) + .038(CXS)* + .005(LXS) + -.338(T1) + -.192(T3) + .664(EG) + -.365(EGXT3) + .482(EGXT1) + 27.36

Step 6 - Enter Gender by Attributions interactions
Y' = -.615(L)* + -.417(S) + -.790(C)** + .014(LXC) + .038(CXS)* + .005(LXS) + -.306(T1) + -.141(T3) + -3.577(EG) + .370(EGXT3) + .479(EGXT1) + .053(EGXL) + -.020(EGXC) + .151(EGXS) + 28.54

Step 7 - Enter Trend by Stability interaction
Y' = -.595(L)* + -.470(S) + -.765(C)** + .013(LXC) + .037(CXS)* + .004(LXS) + -1.477(T1) + -2.386(T3) + -3.387(EG) + .330(EGXT3) + .418(EGXT1) + .047(EGXL) + -.025(EGXC) + .152(EGXS) + .140(T3XS) + .073(T1XS) + 29.18

Step 8 - Enter Trend by External Locus interaction
Y' = -.884(L)** + -.503(S) + -.659(C)* + .009(LXC) + .032(CXS)* + .008(LXS) + -2.168(T1) + -15.168(T3)** + -1.864(EG) + .158(EGXT3) + .221(EGXT1) + .040(EGXL) + -.030(EGXC) + .075(EGXS) + .196(T3XS) + .084(T1XS) + .055(T1XL) + .814(T3XL)** + 33.208

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Table 44 (cont'd)

Step 9 - Enter Trend by Controllability interaction

Y' = -.797(L)** + -.430(S) + -.528(C) + .009(LXC) +
.030(CXS)* + .006(LXS) + -4.762(T1) + -5.484(T3) +
-2.822(EG) + .300(EGXT3) + .366(EGXT1) + .055(EGXL) +
-.001(EGXC) + .092(EGXS) + .084(T3XS) + .090(T1XS) +
.104(T1XL) + .636(T3XL)** + -.364(T3XC)** +
.113(T1XC) + 30.01

Step 10 - Enter Trend X Stability X Employee Gender

Y' = -.795(L)** + -.399(S) + -.535(C) + .009(LXC) +
.030(CXS) + .005(LXS) + -5.558(T1) + -3.791(T3) +
-2.491(EG) + -2.795(EGXT3) + 2.078(EGXT3) +
.055(EGXL) + .010(EGXC) + .062(EGXS) + -.016(T3XS) +
.145(T1XS) + .098(T1XL) + .633(T3XL)** +
-.365(T3XC)** + .114(T1XC) + .193(T3XSXEG) +
-.106(T1XSXEG) + 29.695

Step 11 - Enter Trend X Locus X Employee Gender

Y' = -.842(L)** + -.410(S) + .547(C) + .009(LXC) +
.030(CXS)** .005(LXS) + -6.851(T1) + -5.027(T3) +
-4.394(EG) + -.308(EGXT3) + 4.907(EGXT3) + .155(EGXL)
+ .018(EGXC) + .085(EGXS) + -.010(T3XS) + .154(T1XS)
+ .183(T1XL) + .717(T3XL)** + -.369(T3XC)** +
.109(T1XC) + -.173(T3XSXEG) + -.143(T1XSXEG) +
-.157(T1XLXEG) + -.150(T3XLXEG) + 30.655

Step 12 - Enter Trend X Controllability X Employee Gender

Y' = -.850(L)** + -.388(S) + .567(C)* + .009(LXC) +
.029(CXS)* + .004(LXS) + -7.642(T1) + -7.105(T3) +
-6.564(EG) + 3.928(EGXT3) + 6.671(EGXT3) + .203(EGXL)
+ .100(EGXC) + .101(EGXS) + .009(T3XS) + .157(T1XS) +
.201(T1XL) + .757(T3XL)** + -.288(T3XC)** +
.142(T1XC) + .131(T3XSXEG) + -.157(T1XSXEG) +
-.195(T1XLXEG) + -.233(T3XLXEG) + -.159(T3XCXEG) +
-.066(T1XCXEG) + 31.150

Note: * indicates $\underline{p} \leq .05$
Note: ** indicates $\underline{p} \leq .01$

or stable was rewarded more than performance which was external or unstable. There was also a significant interaction between controllability and stability for promotion decisions. Above average performance which was considered controllable and stable was rewarded more than performance which was either uncontrollable or unstable (or both).

Employee gender and performance trend did not significantly affect promotion decisions, and none of the interactions involving gender were significant. The interactions for external locus of causality X performance trend and controllability X performance trend were significant. As before, controllability interacted with performance trend to exert a significant effect on promotion decisions, even when the effects of locus and locus x trend variables were partialled.

The $\underline{b}$ weights for equation 8 indicate that the slope of the regression line for the effect of external locus on promotion decisions was not significantly different between improving trends and maintaining trends ($\underline{b}$ = .055 for T1 X Locus, n.s.), but the slope for the effect of locus on promotion was significantly different between declining trends and maintaining trends ($\underline{b}$ = .814 for T3 X Locus, $\underline{p} \leq .01$).

The $\underline{b}$ weights for equation 9 indicate that the slope for the effect of controllability on promotion decisions was not significantly different between improving trends and maintaining trends (b = .114 for T1 X Control, n.s.) but the difference in the slope for the effect on controllability on promotion decisions was significantly different between declining trends and maintaining trends (b = -.365 for T3 X Control, $p \leq .01$).

As before, these results strongly support hypotheses H3 to H4b. The relationship between perceived controllability or external locus of causality and personnel decisions varied, depending on observed performance trends. Figures 26 and 27 graphically represent the interactions between controllability or external locus of causality and performance trends. They were created by substituting appropriate group values and means into equations 8 and 9, and then plotting them for perceptions of external locus of causality and controllability one SD above and below the mean of locus or controllability perceptions.

The results of the two repeated measures regression analyses indicate that when employees are all considered above average in performance and when information about causes of performance are provided, then perceptions of the three attributional dimensions of locus of causality, controllability, and stability have important effects on personnel decision making. Above average performance which is considered to be internal in locus and which is stable is rewarded more than external or unstable performance, regardless of the performance trend exhibited. Furthermore, above average performance which is controllable and stable

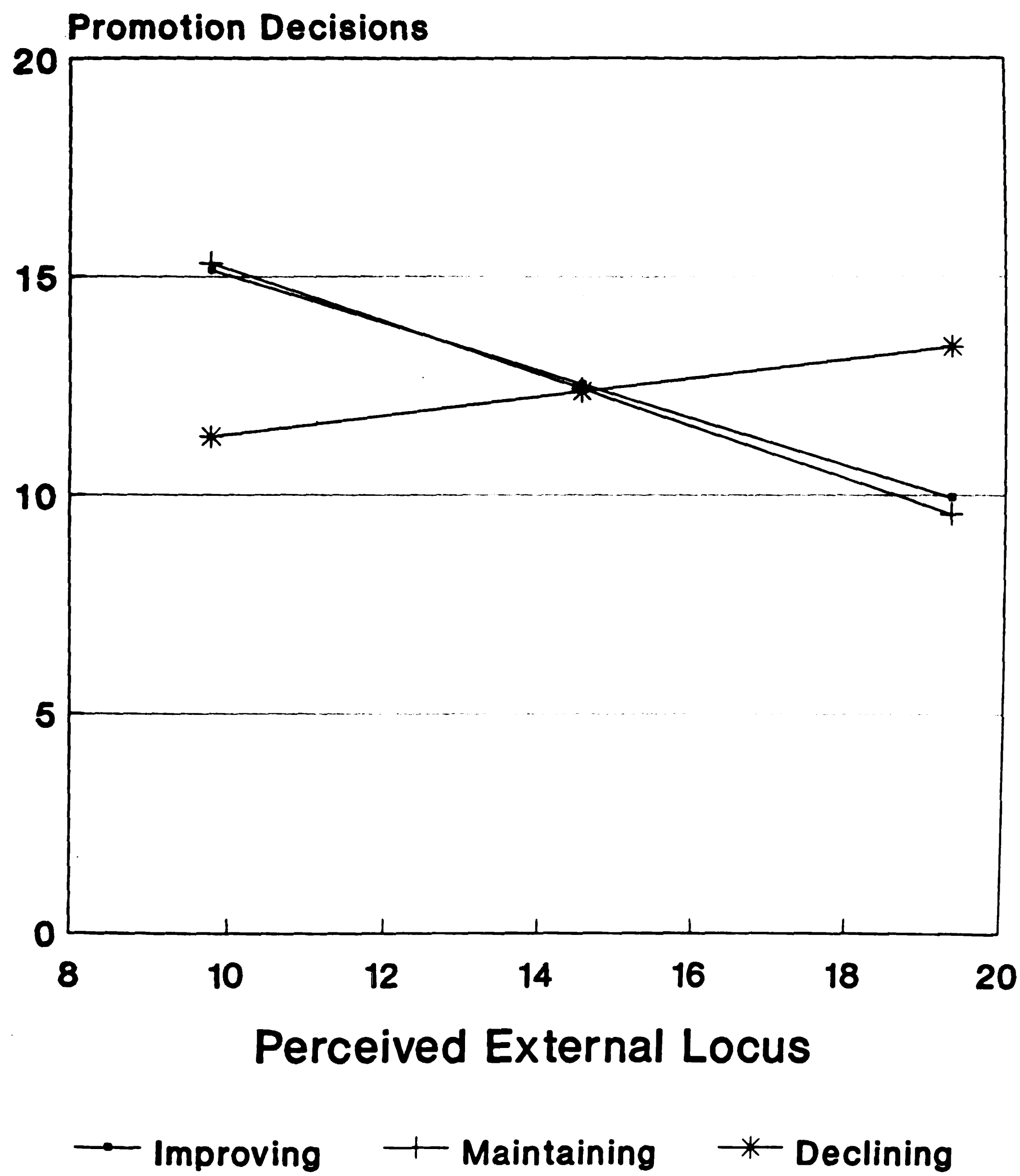


Figure 26. Interaction Effect of External Locus of Causality and Performance Trend for Promotion Decisions

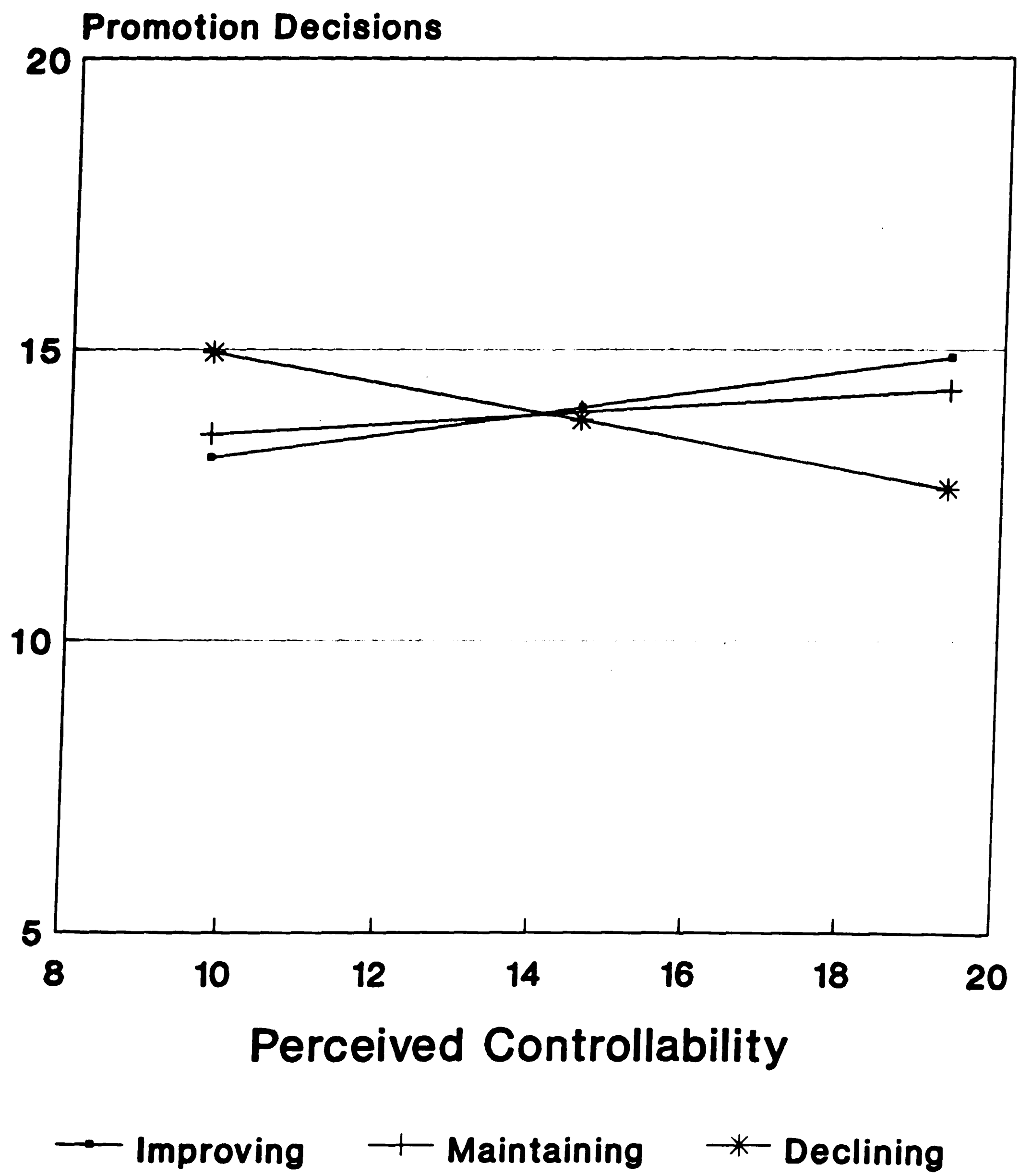


Figure 27. Interaction Effect of Perceived Controllability and Performance Trend for Promotion Decisions

is rewarded with more positive promotion decisions than performance which is either uncontrollable or unstable.

The results also indicate that even when all employees are above average in performance, observed performance trends interact with perceptions of locus of causality or controllability to strongly affect personnel decision making. Improving or maintaining performance which is controllable or internal is rewarded more than declining performance which is controllable or internal. Conversely, improving or maintaining performance which is uncontrollable or external is rewarded less than declining performance which is uncontrollable or external.

The results of previous analyses involving the MANOVA and ANOVA procedures indicate that employee gender has an effect on perceived attributions and personnel decision making. The results of the repeated measures regression analyses indicate that employee gender has no effect, either alone or in interactions. While the results cannot prove that the effect of employee gender on personnel decisions occurs primarily through attributions, they are suggestive of that conclusion. Employee gender interacts with informational cues and performance trend to affect attributions and personnel decisions. Attributions, in turn, affect personnel decisions. When the actual attributions are used to predict personnel decisions, employee gender no longer has a significant effect.

The results of the analyses also suggest that stereotype-based biases against female employees are diminished (or even reversed) when decision makers are provided with extensive performance related information, and when the employees are all clearly above average in performance.

It is possible that failure to include actual measures of stereotypical attitudes toward women in analyses might change findings involving employee gender. For example, if a decision maker does not have gender related stereotypes of women as managers, then employee gender may not have an effect on decision making processes. It is also possible that the gender of the decision maker may interact with employee gender to affect personnel decisions. The next series of analyses were designed to test these possibilities.

Effects of WAMS and Decision Maker Gender on Personnel Decisions

A variety of analyses were conducted to investigate the possibility that scores on the WAMS or decision maker gender might interact with the gender of the target employee to affect personnel decisions and attributions. The basic findings obtained are presented in the following two repeated measures regression analyses.

In the first repeated measures regression, pay decisions were regressed on WAMS scores, decision maker gender, employee gender, performance trends, attributions, and various interactions. The regressions were exploratory in nature, so an unusually large number of variables were used in the analyses.

Perceived stability, locus, and controllability were entered in the first step, followed by their interactions in the second step. Next, the gender of the target employee was entered, and performance trend was entered in the fourth step. As before, performance trend was represented by two dummy variables (Trend 1 = improving, Trend 3 = declining). Gender of the decision maker was entered in the fifth step.

In the sixth step, WAMS scores were entered. Gender of the decision maker was entered previously to partial its effects prior to the entry of WAMS scores because the two were strongly related ($\underline{r}$ = .56). Next, the variables representing employee gender X trend, decision maker gender X trend, and WAMS scores X trend interactions were entered. In the eighth step, variables representing the employee gender X decision maker gender, and the employee gender X WAMS interactions were entered. The triple interaction terms for employee gender X decision maker gender X performance trend effects were entered in the ninth step.

In the tenth step, the triple interaction for employee gender X WAMS X performance trend was entered. Next, the terms for the interaction between performance trend and stability were entered, followed by the interaction between performance trend and locus. In the thirteenth step, the interaction between performance trend and controllability was entered. The next step entered the employee gender X attributions terms, the decision maker gender X attributions terms, and the WAMS scores X attributions terms. The fifteenth step entered the employee gender X trend X attributions terms, followed by the decision maker gender X trend X attributions terms. The seventeenth step contained the WAMS X trend X attributions terms, and the final step contained the decision maker gender X employee gender X attributions and the WAMS X employee gender X attributions terms.

The results of this analysis are presented in Table 45. For conservation of space, the regression equations presented in Table 46 correspond only to those steps which significantly incremented R^2. Any non-significant blocks of variables do not have equations completely written out for them.

As before, main effects for perceived external locus of causation and stability were obtained. The more internal and stable the above average performance, the more positive the pay decisions. Interestingly, a main effect for WAMS scores was also obtained. The higher the WAMS score, the more positive the pay decisions made by the decision maker. This finding suggests that people who have stereotypical attitudes toward women as managers tend to differ in the personnel decisions they make from people who do not have such attitudes toward women as managers.

Table 45

Results of Repeated Measures Regressions for Pay Decisions Using WAMS Scores, Decision Maker Gender, Employee Gender, Performance Trend, and Attributions

Step	Indpndnt Vars	R^2 for Equation	R^2 Incrmnt	Incrmnt Btwn	Incrmnt Within
1	Control (C) Locus (L) Stability (S)	.120	.120		.165**
2	L X S C X S L X C	.124	.004		.006
3	Employee Gender (EG)	.125	.000	.001	
4	Trend 1 (T1) Trend 3 (T3)	.125	.000	.001	
5	Decision Maker Gender (DG)	.125	.000	.000	
6	WAMS	.160	.034	.127**	
7	EG X T1 EG X T3 DG X T1 DG X T3 WAMS X T1 WAMS X T3	.166	.007	.024	
8	EG X DG EG X WAMS	.169	.002	.008	
9	EG X DG X T1 EG X DG X T3	.170	.001	.005	
10	EG X WAMS X T1 EG X WAMS X T3	.173	.003	.010	
11	T1 X S T3 X S	.178	.005		.007

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Table 45 (cont'd)

12	T1 X L T3 X L	.287	.109	.149**
13	T1 X C T3 X C	.316	.030	.041**
14	EG X S EG X L EG X C DG X S DG X L DG X C WAMS X S WAMS X L WAMS X C	.318	.002	.002
15	T1 X S X EG T3 X S X EG T1 X L X EG T3 X L X EG T1 X C X EG T3 X C X EG	.325	.007	.009
16	T1 X S X DG T3 X S X DG T1 X L X DG T3 X L X DG T1 X C X DG T3 X C X DG	.330	.005	.007
17	T1 X S X WAMS T3 X S X WAMS T1 X L X WAMS T3 X L X WAMS T1 X C X WAMS T3 X C X WAMS	.336	.006	.008
18	EG X DG X L EG X DG X C EG X DG X S EG X WAMS X L EG X WAMS X C EG X WAMS X S	.340	.004	.005

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Table 46

Regression Equations for Prediction of Pay Decisions Using WAMS Scores, Decision Maker Gender, Employee Gender, Performance Trend, and Attributions

Step 1 - Enter Attributions

Y' = -.539(L)** + .291(S)** + -.079(C) + 37.317

Step 6 - Enter WAMS scores

Y' = -1.324(L)** + -.665(S) + -1.107(C)* + .026(LXC)* + .026(LXS) + .038(CXS) + .201(EG) + .279(T1) + .144(T3) + -1.921(DG)** + .137(WAMS)** + 47.506

Step 12 - Enter Trend by External Locus interaction

Y' = -1.790(L)** + -1.032(S)* + -.985(C)* + .021(LXC) + .031(LXS) + .033(CXS) + 2.380(EG) + 8.025(T1) + -14.229(T3) + -3.278(DG)* + .180(WAMS)** + -17.089(EGXT3) + -11.706(EGXT1) + 2.833(DGXT1) + 4.129(DGXT3) + -.156(WAMSXT1) + -.160(WAMSXT3) + -.749(EGXDG) + -.011(EGXWAMS) + .686(EGXDGXT1) + -1.670(EGXDGXT3) + .117(EGXWAMSXT1) + .487(EGXWAMSXT3) + .216(T1XS) + .542(T3XS)* + .124(T1XL) + 1.245(T3XL)** + 55.641

Step 13 - Enter Trend by Controllability interaction

Y' = -1.493(L)** + -.751(S) + -.548(C) + .020(LXC) + .025(LXS) + .026(CXS) + 4.016(EG) + 11.795(T1) + 9.030(T3) + -3.613(DG)* + .200(WAMS)** + -15.929(EGXT1) + -17.529(EGXT3) + 2.918(DGXT1) + 4.612(DGXT3)* + -.200(WAMSXT1)* + -.181(WAMSXT3)* + -.515(EGXDG) + -.032(EGXWAMS) + .493(EGXDGXT1) + -2.474(EGXDGXT3) + .169(EGXWAMSXT1) + .298(EGXWAMSXT3) + .184(T1XS) + .298(T3XS)* + .111(T1XL) + .838(T3XL)** + .044(T1XC) + -.806(T3XC)** + 42.188

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Significant interactions which were consistent with earlier findings were obtained for the effects of trend X locus and trend X controllability on pay decisions. There was little or no evidence to suggest that either the gender of the decision maker or WAMS scores interacted with employee gender to affect pay decisions.

A final repeated measures regression analysis was performed for promotion decisions. In this analysis, promotion decisions were regressed on WAMS scores, decision maker gender, employee gender, performance trends, attributions, and various interactions. As before, the regressions were exploratory in nature, so an unusually large number of variables were used in the analyses. The same variables used in the analysis for pay decisions described above were used for promotion decisions. The order in which variables were entered was identical to the previous analysis. The results of this analysis are presented in Table 47. The corresponding regression equations are presented in Table 48. In the interest of conservation of space, only equations which correspond to blocks of variables which significantly increased R^2 are presented.

Main effects were obtained for the effects of stability and locus of causality on promotion decisions. Above average performance which was considered to be stable and internal was rewarded more than when it was considered to be unstable or external. There was also a significant

Table 47

Results of Repeated Measures Regressions for Promotion Decisions Using WAMS Scores, Decision Maker Gender, Employee Gender, Performance Trend, and Attributions

Step	Indpndnt Vars	R^2 for Equation	R^2 Incrmnt	Incrmnt Btwn	Incrmnt Within
1	Control (C) Locus (L) Stability (S)	.118	.118		.153**
2	L X S C X S L X C	.133	.015		.019**
3	Employee Gender (EG)	.134	.001	.006	
4	Trend 1 (T1) Trend 3 (T3)	.134	.000	.000	
5	Decision Maker Gender (DG)	.139	.005	.020*	
6	WAMS	.140	.001	.005	
7	EG X T1 EG X T3 DG X T1 DG X T3 WAMS X T1 WAMS X T3	.143	.004	.016	
8	EG X DG EG X WAMS	.145	.002	.008	
9	EG X DG X T1 EG X DG X T3	.152	.007	.032*	
10	EG X WAMS X T1 EG X WAMS X T3	.155	.002	.011	
11	T1 X S T3 X S	.157	.002		.002

Note: * indicates $p \leq .05$
Note: ** indicates $p \leq .01$

Table 47 (cont'd)

12	T1 X L T3 X L	.258	.101	.132**
13	T1 X C T3 X C	.276	.018	.023**
14	EG X S EG X L EG X C DG X S DG X L DG X C WAMS X S WAMS X L WAMS X C	.280	.004	.005
15	T1 X S X EG T3 X S X EG T1 X L X EG T3 X L X EG T1 X C X EG T3 X C X EG	.284	.003	.004
16	T1 X S X DG T3 X S X DG T1 X L X DG T3 X L X DG T1 X C X DG T3 X C X DG	.303	.019	.025**
17	T1 X S X WAMS T3 X S X WAMS T1 X L X WAMS T3 X L X WAMS T1 X C X WAMS T3 X C X WAMS	.309	.007	.008
18	EG X DG X L EG X DG X C EG X DG X S EG X WAMS X L EG X WAMS X C EG X WAMS X S	.316	.007	.009

Note: * indicates $\underline{p} \leq .05$
Note: ** indicates $\underline{p} \leq .01$

Table 48

Regression Equations for Prediction of Promotion Decisions Using WAMS Scores, Decision Maker Gender, Employee Gender, Performance Trend, and Attributions

Step 1 - Enter Attributions

Y' = -.316(L)** + .240(S)** + .031(C) + 13.969

Step 2 - Enter interactions in Attributions

Y' = -.684(L)** + -.462(S) + -.887(C)** + .016(LXC)* + .041(CXS)** + .009(LXS) + 29.319

Step 5 - Enter Gender of Decision Maker

Y' = -.621(L)** + -.382(S) + -.849(C)** + .015(LXC) + .005(LXS) + .039(CXS)** + -.370(EG) + -.026(T1) + -.025(T3) + -.745(DG)* + 28.364

Step 9 - Enter interactions for Gender of Decision Maker by Gender of Employee by Performance Trend

Y' = -.651(L)* + -.438(S) + -.926(C)** + .016(LXC)* + .006(LXS) + .042(CXS)** + -2.950(EG) + 1.153(T1) + -.397(T3) + -2.338(DG)* + .021(WAMS) + 3.048(TGXT1)* + 1.423(TGXT3) + 3.925(DGXT1)** + 1.874(DGXT3) + -.040(WAMSXT1) + -.009(WAMSXT3) + 1.030(EGXDG) + .019(EGXWAMS) + -4.577(EGXDGXT1)* + -2.004(EGXDGXT3) + 28.867

Step 12 - Enter Trend by External Locus interaction

Y' = -.936(L)** + -.639(S) + -.832(C)* + .011(LXC) + .010(LXS) + .039(CXS)* + .591(EG) + 4.545(T1) + -13.551(T3)* + -2.600(DG)* + .041(WAMS) + -6.877(EGXT1) + -2.351(EGXT3) + 5.355(DGXT1)* + 2.363(DGXT3) + -.117(WAMSXT1) + -.038(WAMSXT3) + 1.688(EGXDG) + -.022(EGXWAMS) + -6.829(EGXDGXT1)* + -2.991(EGXDGXT3) + .122(EGXWAMSXT1) + .046(EGXWAMSXT3) + .148(T1XS) + .229(T3XS)* + .038(T1XL) + .810(T3XL)** + 55.641

Note: * indicates $p \leq .05$

Note: ** indicates $p \leq .01$

Table 48 (cont'd)

Step 13 - Enter Trend by Controllability interaction

Y' = -.802(L)** + -.500(S) + -.641(C)* + .011(LXC) +
.007(LXS) + .035(CXS)* + 1.150(EG) + 4.260(T1) +
-2.757(T3) + -2.710(DG)* + .047(WAMS) + -8.947(EGXT1) +
-2.353(EGXT3) + 5.311(DGXT1)* + 2.538(DGXT3) +
-.139(WAMSXT1)* + -.046(WAMSXT3) + 1.762(EGXDG) +
-.029(EGXWAMS) + -6.848(EGXDGXT1)* + -3.336(EGXDGXT3) +
.147(EGXWAMSXT1)* + .050(EGXWAMSXT3) + .147(T1XS) +
.111(T3XS)* + .077(T1XL) + .621(T3XL)** + .107(T1XC)
+ -.380(T3XC)** + 28.278

Step 16 - Enter Trend by Attributions by Gender of Decision Maker interactions

Y' = -1.138(L)* + -.362(S) + -.633(C) + .015(LXC) +
.003(LXS) + .031(CXS)* + -3.802(EG) + -1.927(T1) +
-3.590(T3) + -4.638(DG) + .035(WAMS) + -3.619(EGXT1) +
2.399(EGXT3) + 12.194(DGXT1) + 3.042(DGXT3) +
-.126(WAMSXT1) + -.043(WAMSXT3) + 1.840(EGXDG) +
-.044(EGXWAMS) + -6.751(EGXDGXT1)* + -3.739(EGXDGXT3) +
.149(EGXWAMSXT1) + .065(EGXWAMSXT3) + .413(T1XS) +
.359(T3XS) + .256(T1XL) + .483(T3XL)* + .018(T1XC) +
-.471(T3XC)* + .215(EGXL) + -.055(DGXL) + .115(EGXC)
+ -.172(DGXC) + .094(EGXS) + .325(DGXS) + .001(WAMSXC)
+ -.002(WAMSXS) + .003(WAMSXL) + -1.39(EGXT1XL) +
-.329(EGXT3XL) + -.067(EGXT1XC) + -2.69(EGXT3XC) +
-.170(EGXT1XS) + .178(EGXT3XS) + -.201(DGXT1XL) +
.442(DGXT3XL) + .189(DGXT1XC) + .304(DGXT3XC) +
-.427(DGXT1XS) + -.717(DGXT3XS)* + 31.536

Note: * indicates $p \le .05$
Note: ** indicates $p \le .01$

interaction between locus and controllability and controllability and stability. Above average performance which was considered to be due to internal and controllable causes was rewarded more than when it was considered to be external, uncontrollable, or both. Also, above average performance which was due to stable and controllable causes received more positive promotion decisions than when it was either unstable, uncontrollable, or both, unstable and uncontrollable.

Gender of the decision maker also affected promotion decisions. Female decision makers tended to make lower promotion decisions than male decision makers ($\underline{b} = -.745$, $\underline{p} \leq .05$). This effect was qualified by the significant triple interaction for the employee gender X decision maker gender X performance trend effect. Female employees received significantly less positive promotion decisions from female decision makers than when either the employee or the decision maker was male, and this was particularly true for the improving performance trend condition ($\underline{b} = -4.566$, $\underline{p} \leq .05$).

Consistent with all previous findings, results show that performance trends interacted with perceptions of external locus of causality and controllability to affect promotion decisions. There was also a significant interaction between the gender of the decision maker, stability, and performance trend. The slope of the relationship between stability and promotion decisions in the declining performance trend condition was significantly different for male and female decision makers ($b = -.717$, $p \leq .05$). Females tended to give lower promotion decisions for declining performance which was due to stable causes.

In sum, the two regressions which explored for the effects of WAMS and decision maker gender on personnel decisions support the following statements. Attributions have a strong effect on personnel decisions, and controllability interacts with locus and stability to affect promotion decisions. Also, external locus and controllability interact with performance trends to affect personnel decision making.

The gender of the decision maker affects promotion decisions such that female decision makers tend to give less positive decisions than male decision makers. This is particularly true when the employee is female and improving, or when the performance is declining and due to stable causes.

There was no evidence to support the notion that attitudes toward women as managers would interact with the gender of the employee to affect personnel decision making. The results did suggest however, that people who have stereotypical attitudes toward women as managers tend to make personnel decisions differently than people who do not have such attitudes.

Summary of Results

The results of the MANOVAs and ANOVAs for the effects of gender of the employee, informational cues, and performance trend on attributions indicate that effort, ability, and ease of job informational cues vary in locus of causality, controllability, and stability. These findings are consistent with attribution theory. Effort and ability cues are both considered to be more internal than ease of job cues. Also, effort is considered to be more controllable than ability, which is considered to be more controllable than ease of job. Finally, effort as a cause of performance, is considered to be more unstable than either ability or ease of job as a cause of performance.

Gender of the employee interacts with informational cues to affect perceived locus and controllability. Effort cues for female employees are considered to be more internal and controllable than are the same cues for male employees. Gender of the employee also interacts with performance trend to affect perceived stability. Maintaining performance trends of female employees are considered to be more stable than are the same performance trends for male employees.

The results of the MANOVAs and ANOVAs also indicate that informational cues interact with the gender of the employee to affect personnel decisions. Female employees who exhibit above average performance trends which are due to task or job characteristics are rewarded more than male employees who exhibit above average performance trends which are due to the same causes.

The results also suggest that informational cues interact with performance trends to affect personnel decisions through the three attributional dimensions proposed by Weiner (1985, 1986). Improving or maintaining performance which is due to uncontrollable or external causes is rewarded less than the same performance which is due to controllable or internal causes. Conversely, declining performance which is due to uncontrollable or external causes is rewarded more than declining performance which is due to controllable or internal causes. Perceptions of stability do not interact with performance trends to affect personnel decisions, but they do have a main effect on those decisions. Employees who show above average performance which is considered to be due to stable causes receive more reward than when the causes are considered to be unstable. These findings suggest that the differences in personnel decisions found in past studies using effort and ability cues were not only due to perceived stability, but that they were also due to the effects of controllability.

The results also suggest that the effects of employee gender on personnel decisions occur through attributional processes. When the actual perceptions of controllability, stability, and locus are used to predict personnel decisions, employee gender effects disappear.

Finally, WAMS scores do not interact with the gender of the employee to affect personnel decision making. However, gender of the decision maker does interact with the gender of the employee to affect personnel decisions. When both the decision maker and the employee are female, the employee will receive less positive personnel decisions, especially if the employee exhibits an improving or declining performance trend. The main effect for WAMS scores suggests that people who have stereotypical views of women as managers differ in the types of personnel decisions they make from those who do not have such attitudes.

A summary of the results for the tests of the various hypotheses is provided in Table 49. Most hypotheses involving gender of the employee or gender group membership are not supported, while nearly all hypotheses involving the predicted effects of informational cues and attributions on personnel decisions are supported. The implications of these findings will be discussed in the following section.

Table 49

Outcomes for Tests of Hypotheses

Hypothesis	Test	Result
1 & 2	MANOVA, ANOVA	Limited support
3-3b	MANOVA, ANOVA, Regression	Strong support
4-4b	MANOVA, ANOVA, Regression	Strong support
5	ANOVA	No support
6	ANOVA	No support
7-7c	MANOVA, ANOVA	Strong support
7d	ANOVA	Limited support
8	MANOVA, ANOVA	Limited support
8a-8b	ANOVA	Findings conflict with hypotheses
8c-8d	ANOVA	No support
9	ANOVA	Limited support
9a-9b	ANOVA	Findings conflict with hypotheses
10	MANOVA, ANOVA	Limited support
10a-10e	MANOVA, ANOVA	Findings conflict with hypotheses
11-11b	MANOVA, ANOVA, Regression	No support

Table 49 (cont'd)

12-12d	MANOVA	No support
13-13b	MANOVA	No support
14-14e	MANOVA	No support
15-15b	MANOVA	No support

DISCUSSION

The analyses of this study resulted in several major findings. First, the impact of performance trends on personnel decisions is negligible in the presence of specific information related to causes of observed performance trends. Second, informational cues of effort, ability, and ease of job vary in perceived locus of causality, controllability, and stability as hypothesized by attribution theory. Third, perceived locus of causality, controllability, and stability are linked to personnel decisions. Specifically, causes of above average performance which are considered internal, stable, or controllable and stable, lead to more positive personnel decisions than when causes are considered external, unstable, or uncontrollable and unstable.

Fourth, the dimensions of locus of causation and controllability interact with observed performance trends to strongly affect personnel decision making. Decision makers give more reward to employees who show improving or maintaining performance trends which are perceived to be controllable or internal than to employees who show improving or maintaining performance trends which are perceived to be uncontrollable or external. Conversely, decision makers give less reward to employees who show declining performance trends which are perceived to be controllable or internal than to employees who show declining performance trends which are perceived to be uncontrollable or external.

Fifth, employee gender influences personnel decision making and attributional formation, but these effects are not consistent with hypotheses presented earlier. Female employees receive more positive pay decisions than male employees when their observed performance trend is attributable to job characteristics. Decision makers consider informational cues for effort to be more controllable for female employees than for male employees, and they perceive causes of maintaining performance trends to be more stable for female employees than for male employees. Findings also suggest employee gender effects on personnel decisions occur through attributional formation, because such effects disappear when attributional perceptions are used to predict personnel decisions.

Sixth, gender group membership does not appear to affect attributions nor does it seem to affect personnel decision making. These findings suggest that either group membership attributional biases do not extend to conditions of gender group membership, or that gender group membership biases can be ameliorated by providing large amounts of performance related information.

Seventh, the results indicate that attitudes toward women as managers do not interact with the gender of above average employees to affect personnel decisions, though such attitudes do predict pay decisions. Decision makers who have more positive attitudes toward women as managers make more positive pay decisions for all employees than decision makers who have less positive attitudes toward women as managers.

Finally, the gender of the decision maker does not affect pay decisions, but it does affect promotion decisions. Female decision makers give less positive promotion decisions to all employees than do male decision makers. Also, the gender of the decision maker interacts with the gender of the employee to affect pay decisions. Employees receive lower pay decisions when both the decision maker and employee are female, and when employees show improving performance trends.

While the basic findings of this study are summarized above, elaboration and explanations of these findings will be discussed in the following sections. The implications of obtained findings for attribution theory, gender related research, and group membership studies will be discussed, followed by a section on the generalizability of the findings. In the section following generalizability issues, the implications of findings for "real world" situations will be reviewed. Finally, the discussion will close with a review of the limitations of this study and suggestions for future research directions.

Attribution Theory

The findings provide strong support for the existence of a three dimensional classification system for causes of performance. Causes of outcomes vary along the dimensions of locus of causality, stability, and controllability as hypothesized in Figure 2. Calls for the integration of controllability as an attributional dimension in organizational research have been made (e.g. Ford, 1985; Ilgen & Klein, 1988), but few researchers have integrated this dimension into their work.

Previous research using locus of causality and stability as attributional dimensions has overlooked the influence of controllability. As a result, the influence of stability attributions often has been posited to account for observed differences in the effects of ability and effort on leader responses to performance. For example, Dugan (1989, p. 108) stated:

> "...altering attributions from stable to unstable causes raises expectations that goals can be achieved (Anderson, 1983; Zoeller, Mahoney, & Weiner, 1983). Managers who attribute subordinate poor performance to lack of effort, an unstable cause, may be more open in a feedback process because they believe they can change a subordinate's level of effort more readily than they can change ability."

In contrast, the results of this study indicate that interactions between observed performance and effort or ability cues are primarily due to the influences of controllability on personnel decision making, not stability.

The fact that controllability has effects on personnel decisions which are separate from the effects of locus of causality is also important. As Green and Mitchell (1979) have pointed out, the perception of responsibility (i.e. controllability) is a crucial judgment which leaders make. They state, "when attributions are external, obviously this issue is moot, but when attributions are internal, especially in the case of negative outcomes, it is of utmost importance." For example, when a person fails for a lack of motivation, but has high ability, punishment is most severe, but when failure is seen as due to a lack of ability, but the person has really tried, the punishment is ameliorated (Weiner & Kukla, 1970). The findings of this study generalize this effect to positive personnel decisions made in response to observed performance trends for above average employees.

The results of the study also support the view of leaders as information processors which has been suggested by Green and Mitchell (1979). In their two step model, leaders first make an attribution regarding the cause of an observed performance, then they respond with behaviors directed toward the cause of that performance. Results clearly show that decision makers use causal information regarding the observed above average performance trends. In fact, contrary to expectations, the results of this study suggest that performance trends have little or no effect on personnel decisions separate from interactions with the causal information available to the decision maker.

The results of the pilot studies conducted as a part of this research also provide evidence for the existence of the discounting effect. The discounting effect occurs because leaders look at multiple causes for the same event. The role of any given cause in creating an observed outcome is discounted if other plausible causes are also present (Kelley, 1973; Ajzen & Fishbein, 1978). In this study, patterns of attributions had to be manipulated in order to measure each of the causes reliably and separately from each other.

In sum, the existence and importance of controllability as an attributional dimension is demonstrated by the results of this study. Furthermore, previous findings involving causal attributions are generalizable to situations in which above average employees exhibit different patterns of performance. These findings support the view of leaders or decision makers as information processors. Since leaders or decision makers are viewed as information processors, information about observed performance trends for above average performers should affect personnel decision making. The next section discusses the implications of findings involving the effect of observed performance trends on personnel decision making processes.

Performance Trend

The results of the study indicate that in the presence of specific causal information, observed performance trends for above average employees have no effect on personnel decisions which are separate from those involving causal information. These findings were unexpected and they stand in contrast to findings obtained by DeNisi and Stevens (1981), who found that ascending performance was viewed as more favorable than descending performance.

The differences in the findings of this study with those of the previous study can be synthesized in the following manner. The view promulgated by Green and Mitchell (1979) and Lord and Maher (1991) is that leaders or decision makers function as information processors. In the absence of performance information, or when it is ambiguous, decision makers use schemas to guide their decision making processes. The two step model by Green and Mitchell (1979) proposes that first, leaders make causal attributions about observed performances, and second, they make responses on the basis of those attributions.

In the DeNisi and Stevens (1981) study, they did not provide any information regarding the possible causes of the observed performance. In this situation, decision makers could only attend to the information available and use schemas to guide their subsequent decisions. DeNisi and

Stevens noted that raters seemed to equate ascending performance with high performance and descending performance with low performance. Raters apparently assumed that the improving performer would continue to improve and the declining performer would continue to decline.

In the current study, decision makers were provided with detailed and specific information regarding causes of the observed employee performance, the overall level of employee performance, and the trend of the observed performance. In this circumstance, all employees were clearly viewed as above average in performance. DeNisi and Stevens (1981) found that level of performance was found to be the most important determinant of performance evaluations. In addition to this, information about the causes of observed performances strongly affected the attributions made by the decision makers, the first step of the two step model proposed by Green and Mitchell (1979). The impact of the provision of specific performance related information was to reduce the use of schemas (good performer v. bad performer) by decision makers and to increase the use of specific causal information. Thus, performance trends had no effects separate from the causal information provided. These findings are not necessarily at odds with those obtained in previous studies. In fact, this study indirectly supports previous findings by showing that improving and maintaining performance trends which are internal and controllable are rewarded more than declining performance trends which are internal and controllable.

While the findings of the study involving performance trend effects are not incongruent with previous studies, findings involving the effects of employee gender, participant gender, and attitudes toward women as managers are more difficult to interpret. The next section reviews the implications of the findings involving the effects mentioned above for gender stereotype research.

Gender Stereotype Research

The current study was designed to determine if previous findings involving gender related biases can occur when decision makers make decisions about above average employees who exhibit different performance trends, and when specific causal information is provided. The findings indicate that employee gender exerts some effect on the formation of attributions and personnel decision making, but the effect is not always in a manner consistent with earlier predictions. For example, effort cues are perceived to be more controllable for above average female employees than for male employees. While this was not predicted, previous research has obtained results which can explain these findings. Feldman-Summers and Kiesler (1974) found that subjects attributed greater motivation to the female stimulus person than to her male counterpart, regardless of other factors. On the other hand, subjects attributed greater ability to the male stimulus person than to the female counterpart. Since motivation, or effort, is considered to be more controllable than is ability, it is likely that effort perceptions will increase the perceived controllability for the performance of above average female employees.

Informational cues also interact with employee gender to affect personnel decisions. Above average female employees whose performance is attributable to the effects of job or task characteristics receive more positive pay decisions than above average male employees whose performance is attributable to the same factors. This statement is particularly true when the employees are above average overall, but are declining in performance trend.

Part of the reason for this effect may be explained by research by Hogan (1987). Hogan has found that prior expectations interact with actual performance to affect ratings, implying that supervisors respond negatively to disconfirmation of expectations. Hogan's findings are also consistent with the expectancy-violation theory (Jussim, Coleman, & Lerch, 1987) which states that an employee will be evaluated more extremely in the direction of the violation of a stereotyped based expectancy.

If male employees are expected to do better than females, and their good performance is expected to be due to ability or effort, then they are likely to receive less positive personnel decisions when their performance is attributed to characteristics of the job. This will be particularly true if they are declining in performance trend because of job characteristics. Thus, it may not be that decision makers inflate positive personnel decisions for female employees in such conditions, but rather, decision makers depress personnel decisions for male employees in such situations.

It is interesting that WAMS scores did not interact with employee gender to affect personnel decision making. Part of the reason this interaction did not occur may be that, in general, gender stereotypes are not available or used by the decision maker when large amounts of unambiguous performance related information is available (Deaux & Lewis, 1984; Fiske & Neuberg, 1990; Heilman, 1983; Nieva & Gutek, 1980). As Heilman (1983) has noted, gender is unlikely to be viewed as the ultimate source of information about an individual employee when more job-relevant information is available (Renwick & Tosi, 1978), when that information is clear-cut and not subject to reinterpretation (Pheterson et al., 1971), or when the causal basis of performance is known (Heilman & Guzzo, 1978).

If a gender stereotype is not activated or used, then the nature of employee gender becomes an irrelevant fact, and it would not be expected to interact with other factors or variables. However, employee gender effects were found to exist in the context of this study. Thus, additional explanations have to be sought to explain why WAMS scores were not found to interact with employee gender to affect personnel decisions. Research by Cohen and Leavengood (1978) provides some possible answers.

Cohen and Leavengood (1978) found a significant gender bias against female employees in their study, but the WAMS was not useful in predicting such bias. They suggested that part of the reason the WAMS did not relate to bias in personnel decisions was because internal attitudes and public behaviors may be under two different kinds of control processes. Internal attitudes are private and they may or may not be related to external or public behaviors, thus, there may be little relation between the two (Calder & Ross, 1973, cited in Cohen & Leavengood, 1978). According to Cohen and Leavengood (1979), the WAMS is a measure of sex-role stereotypic attitudes only - it can't measure actual behavior or discrimination.

It is also interesting to note that the WAMS does predict personnel decisions, even after controlling for the effects of decision maker gender. This finding suggests that people who have stereotypical views of women as managers tend to make decisions differently than do people who do not have such views of women. While such attitudes may or may not predict actual discriminatory behaviors, if such views are related to other personality traits like authoritarianism and dogmatism, then there is research to suggest that these other personality traits will affect the formation of attributions and personnel decision outcomes (Carroll, Perkowitz, Lurigio, & Weaver, 1987; Dovidio, Campbell, & Kahn, 1982; Feather, 1985). Currently, however, it is not entirely clear why WAMS scores would predict general decision making processes but not interact with gender of the employee, unless employee gender was truly unimportant to most decision makers in the given context of the study.

This last statement may be true, to a large degree, given the types of performance information provided in the current study. Research cited by Heilman (1983) has found that evidence of a woman's success in a field ordinarily populated only by men is sufficient to totally eliminate biased evaluation of her. Similarly, Hamner, Kim, Baird, and Bigoness (1974) and Bigoness (1976) have found that women are rated as superior to men when they are shown to perform equivalently doing the heavy physical chores of a grocery store clerk. In the current study, women were clearly shown to perform comparably to men as managers in a computer related field.

Gender of the decision maker also has an effect on personnel decision making. Female decision makers tend to make less positive personnel decisions overall than do male decision makers. This effect, however, is qualified by its interaction effect with the gender of the target employee and the observed performance trend.

For example, it was found that female decision makers give less positive promotion decisions to female employees, especially when they are exhibiting an improving performance trend. It is not clear why this effect would occur, but when the results are viewed a different way, social identity theory (Tajfel & Turner, 1986) provides a possible explanation. If employee gender had been dummy coded in a reverse fashion, the obtained results would have indicated that male decision makers give more positive promotion decisions to male employees, particularly when they are improving in performance. It is possible that it is not that female decision makers give less positive promotion decisions to female employees, but rather, male decision makers give more positive promotion decisions to male employees, particularly when they are improving in performance.

Social identity theory predicts that evaluations of favorable and unfavorably described in-group targets should be more extreme than evaluations of similarly described out-group targets. This is predicted because social identity needs are best served by extreme evaluations. The "black sheep hypothesis" states that more favorable evaluations will be given to favorably described ingroup targets than to favorably described outgroup targets. If male decision makers tend to think in terms of ingroup and outgroup gender relationships, and they believe that improving performance is a favorable outcome, then social identity theory might partially explain observed findings. It should be noted, however, that there was little evidence to suggest such ingroup/outgroup effects existed for both male and female decision makers in the given context of the study. It is possible that ingroup/outgroup biases only occur for one gender or the other.

Researchers have found that members of groups who are in the majority or who are in power tend to use stereotypes more than members of groups who are in the minority or who are not in power (Fiske, 1993; Hewstone, 1990). Men are typically considered to be in the majority or in power for masculine-typed jobs, so they may be more likely to use ingroup/outgroup stereotypes than are women. This logic is consistent with the findings described above.

In sum, there is evidence to suggest that employee and decision maker gender affects the formation of attributions and personnel decision outcomes. The obtained findings, however, are not congruent with predictions, and a systematic pattern of gender related effects has not emerged from the findings. In appears that employee gender may not have been an important attribute to decision makers when more relevant performance related information was available. The next section will review the findings obtained for effects which involve group membership.

Group Membership Research

It was hypothesized that group membership would affect attribution formation and personnel decision making outcomes. No support was found for such hypothesized effects. Overall, gender group membership effects seem to be small or nonexistent when all employees are considered above average in performance, and when they exhibit different performance trends due to clearly identifiable causes. As is the case with use of gender stereotypes, group membership effects are not likely to occur when there is performance related information available which reduces the use of schema based processing (Fiske & Neuberg, 1990). It is also possible that theories regarding the effect of ethnic group membership do not generalize to gender group membership effects. Based on the findings of this study, it is not possible to distinguish which of these statements are true, and specific research designed to tease these findings apart needs to be conducted.

Generalizability Issues

The findings cited above were found in a laboratory environment using a sample of undergraduate college students. Furthermore, findings were obtained by having participants make ratings in response to fictional employee files. Given these statements, generalizability issues become important, even though the study was designed to test a new integrative model. These issues will be dealt with in four steps. First, the issue of the "paper person" research paradigm will be discussed. Next, comparisons of findings involving attributional research to those found using professional samples will be reviewed, followed by a discussion of the generalizability of findings involving gender related biases using college samples. Finally, characteristics of the sample which participated in this study will be used to support the generalizability of findings.

First, though the "paper-person" research paradigm has received strong criticism, a meta-analysis by Murphy, Herr, Lockhart, and Maguire (1986) suggests that findings using this paradigm may be generalizable. They conducted a meta-analysis of performance appraisal research that contrasted the effect sizes of "paper people" with "behavior observation" studies. No significant differences in the effects of ratee sex on performance ratings between the two experimental paradigms was found.

Also, "paper people" are commonly used in business and organizational environments to make reward, selection, and placement decisions. Military promotion review boards often make personnel decisions on the basis of paper recommendations given by superiors. College admissions, particularly for graduate students, are also often initially made on the basis of resumes, transcripts, letters of recommendation, etc. Many large companies have a centralized human resource department which makes hiring, pay, and promotion decisions on the basis of applications or written recommendations provided by an employee's superior.

As Knowlton and Mitchell (1981) noted, "In many organizations, performance evaluations serve as the basis for pay increases, promotions or demotions, and even continued employment. If leaders or supervisors make attributions for subordinate behavior that are subject to motivational or informational biases and these attributions affect performance evaluations, then their behavior may be inappropriate and may have a substantial influence on the satisfaction and motivation of subordinates and the effectiveness of the organization" (p. 465). Used in this context, performance evaluations are paper people, and attributional processes can play an important role not only in how those people are evaluated, but also in how that evaluation results in personnel decisions.

Second, findings involving informational cues and attributions have been found to occur in a wide variety of "real world" contexts, using professional samples. For example, attributional processes were found to occur in samples which included 24 experienced managers (Gioia & Sims, 1986), 188 supervisors (Heneman et al., 1989), 25 nursing supervisors (Mitchell & Wood, 1980) and 48 Israeli mid-level managers (Pazy, 1986). A meta-analysis by DeVader and Lord (1984, cited in Kinicki & Griffeth, 1985) indicates that laboratory research on attributional processes are consistent with findings in the field.

Third, qualitative reviews of sex-bias research have indicated that professional decision makers render personnel decisions no less sensitive to sex bias than ratings made by students (Nieva & Gutek, 1980). Several quantitative reviews have had similar findings. For example, the Eagly et al. meta-analysis (1992) found no effect size for MBA ($\underline{d}$ = -.05), manager ($\underline{d}$ = .01), or college student samples ($\underline{d}$

= -.01). The Olian et al. (1988) meta-analysis found that mean responses of professional and student samples were not significantly different, although students provided more homogeneous evaluations in studies of gender and qualifications.

Fourth, generalizability of the findings using the present sample to supervisory situations is bolstered by actual characteristics of the participants. For example, 46% of the sample has previously had some form of work experience in which they supervised other employees. Of the 46% who have had some supervisory work experience, 18% have had more than a year's worth of experience.

Based on the discussion above, it can be concluded that the findings obtained and discussed in this study are likely to be generalizable to a variety of work contexts. Thus, these findings are likely to have implications for actual managerial or supervisory decision making outcomes.

Implications of Findings

The findings have shown that decision makers use causal information, whenever it is available, to diagnose and determine appropriate responses to observed performances. This occurs even in situations in which employees are all above average in performance and when they exhibit different patterns of performance trends. Previous research has shown that lack of information related to causes of performance outcomes may increase the use of schema based decision making (Fiske & Neuberg, 1990). Schema based processing, in turn, will increase the probability that gender stereotype based biases will exist, since stereotypes are a form of person schema (Bierhoff, 1989).

The likelihood that decision makers will engage in the use of stereotypes when making decisions in organizational contexts is particularly strong since, as Feldman (1981, 1990) noted, raters and decision makers are likely to be cognitively busy and have multiple demands on their time. The high cognitive work loads for decision makers increases the probability that schema based processing will occur. Also, direct information about subordinates' job behavior is often fragmentary. Direct personal contact with subordinates may be minimal and restricted to a particular set of situations, depending on the nature of the job. Often jobs themselves are incompletely understood, and specific duties may be inadequately described or entirely unspecified, especially at higher managerial levels (Campbell, Dunnette, Lawler, & Weick, 1970; cited in Feldman, 1981). Furthermore, research suggests that those who are in power are more likely to use stereotypes than those who are not (Fiske, 1993).

A large body of research has shown gender related biases to exist, particularly for leadership or managerial positions (Eagly, et al., 1992; Morrison & Von Glinow, 1990). For example, using a sample of 2,812 managers, Cochran (1993) found that differences in performance ratings, job qualifications, self-confidence, educational level, could not explain discrepancies in salaries between male and female managers. Much research has also shown that many managers view the role of management as a masculine-typed occupation (e.g. Brenner, et al., 1989), and this is even true in other countries (Shein & Meuller, 1992). An equally large body of research has shown that gender related attributional biases exist, particularly when decision makers do not have enough clear or unambiguous performance related information to make effective decisions (e.g. Deaux, 1976, 1984; Heilman, 1983).

The findings in this study suggest that even when decision makers are provided with ample information related to the cause of an observed performance, and even when the performance level of all employees are clearly seen as above average in performance level, gender related biases can still occur. It is likely, however, that the effect of employee gender is substantially reduced in such situations.

Thus, the findings suggest that in order to be fair and reasonably unbiased when making personnel decisions, decision makers must have information related to the cause of the observed performance, even if all employees are seen as above average in performance. Furthermore, information which allows leaders or decision makers to diagnose the amount of controllability or locus of the observed performance is particularly critical. Decision makers will provide completely different responses to the same observed performance, depending on the inferred locus and controllability of that performance.

The implication for organizations is clear. In order to reduce stereotyped based biases and schema based processing, several things must happen. First, organizations must develop methods which allow personnel decision makers to have access to quality information which contains not just the overall level of some attained performance, but perhaps more importantly, the cause of that performance. Second, organizations must present decision makers with information about performance trends, not just the overall level of performance. That is, decision makers need to have access to histories of performance, not just the current overall performance level. This too, will help decision makers to diagnose and respond to some given performance level. Third, decision makers must be given enough time to review or deliberate information carefully prior to making personnel decisions. These procedures will help to reduce not only the influence of gender stereotypes, but also reduce the influence of other types of schema based processing, like ingroup/outgroup attitudes toward employees.

Other issues which have implications for organizational contexts are those of self-serving attributional biases (Zuckerman, 1979), and actor-observer differences (Brown, 1984; Jones & Davis, 1965). Self-serving attributional biases, actor-observer differences, and managerial decision making style can interact to influence an employee's perceptions of distributive or procedural justice (Cohen, 1987; Folger & Greenberg, 1985; Leventhal, 1980). The effect of self-serving attributional bias is to enhance an employee's perception of the internality and controllability of his or her own successful performance and to decrease the perception of internality and controllability of his or her own unsuccessful performance. Actor-observer differences, however, have shown that observers (managers) are more likely than actors (employees), to attribute successful performance of an actor to external and uncontrollable factors. Conversely, observers (managers) are more likely than are actors (employees) to attribute unsuccessful performance of an actor to internal and controllable factors.

Earlier it was shown that perceptions of locus and controllability have a strong effect on decision making regarding employee performance, even given the same performance trend and overall performance level. If managers view successful employee performances as due to external or uncontrollable factors, they are less likely to provide positive promotions and pay decisions to that employee. On the other hand, the employee will be likely to attribute his or her successful performance to internal and controllable factors, and as a result, will feel that he or she deserves more positive pay and promotion decisions. Conversely, if managers view unsuccessful or poor employee performances as due to internal or controllable factors, they are more likely to engage in punitive behaviors and less likely to engage in positive pay and promotion decisions. On the other hand, the employee will be likely to attribute his or her unsuccessful performance to external or uncontrollable factors, and as a result, will feel that he or she does not deserve punitive responses and instead, deserves positive pay and promotion decisions. The implications for perceived procedural and distributive justice, employee satisfaction, and employee motivation are strong.

Procedural justice is concerned with the perceived fairness of procedures used in making decisions (Folger & Greenberg, 1985), while distributive justice is concerned with the perceived fairness of decision outcomes (Cohen, 1987). Obviously, if managers are making attributions for performance outcomes differently from the way that employees are making attributions for those outcomes, and if they are strongly influenced in their decision making by those attributions, then the fairness of the decision making process may be questioned by the employee. Perceived fairness of decision making procedures and the outcomes of those decisions have been linked to the satisfaction and motivation of those affected by the decisions (Greenberg, 1987; Greenberg & Tyler, 1987). Thus, it is not only important that decision makers receive and use quality information in the decision making process, but it is probably important to tell those affected by decisions how that information was used in arriving at some decision outcome. Specifically, issues of controllability and locus should be directly addressed and conveyed to others during the decision making process.

Limitations and Future Directions

This study has demonstrated that performance trends do not affect personnel decisions separate from the effects of causal information. It has also shown that gender related effects can still occur, even when extensive performance related information is provided. What is not clear, however, is whether gender related biases will change in form or size when employees are all above average in performance, they exhibit different performance trends, and when causal information is not provided. In other words, it is not clear whether removal of causal information regarding observed performance trends will change the pattern of gender effects or whether decision makers will respond differently to observed performance trends. Future research could provide decision makers with male and female employees who show different performance trends at different performance levels, but without providing causal information, and then investigate how decision makers respond to that information.

Another limitation of the current research is that, though evidence exists to support the generalizability of findings to various work contexts, researchers have not investigated the combined effects of performance trends and causal attributions on personnel decisions. It is possible that various environmental factors, like organizational policy, will overshadow any gender or attributional effects on personnel decisions. It is also possible that the experience of the decision maker with performance evaluation and personnel decision making could change the nature of the effects obtained in the current study. Future research should also be conducted to determine the effectiveness of various training procedures to ameliorate or remove gender stereotype related biases.

Future research should also investigate how different types of causal cues might change the effects obtained in the current study. The current study only used effort, ability, and ease of job as possible causes of performance. Weiner (1986, 1987), Anderson (1983), and others have identified many other potential causes of performance which decision makers might use in the decision making process. For example, future research could look at how mood, attitude, health, and other person cues might affect personnel decision making processes.

In sum, the current study has proposed and shown that decision makers function as information processors. It has also shown that decision makers are affected by perceived causes of performance, performance trends, and to a certain degree, gender of the employee. An important contribution of this study to research on personnel decision making and attribution theory is that perceptions of controllability have effects separate from those of stability and locus of causation on personnel decision making processes. Another important finding is that observed performance trends have effects on decision making processes, even when the average performance levels are identical. Results of this study should stimulate future research in the areas of performance evaluation and attribution theory which could diminish the effects of gender related bias, improve organizational reward practices, and improve the perceived justice of work environments.

APPENDICES

APPENDIX A

Appendix A

Complete Listing of Hypotheses

Effect of Performance Trends on Personnel Decisions

H1: Employees who show improving performance trends will be more likely to be promoted or to receive monetary increases than those showing declining trends.

H2: Employees who show maintaining performance trends will be more likely to be promoted or to receive monetary increases than those showing declining trends.

Effect of Performance Trends and Locus of Causality on Personnel Decisions

H3: The effect of performance trends on personnel decisions will be moderated by the decision maker's perceptions of locus of causality.

H3a: Those employees who show improving or maintaining performance trends which are perceived by the decision maker as due to causes which are internal will receive more positive personnel decisions than employees who show improving or maintaining performance trends which are due to causes perceived to be external, when mean performance among employees is held constant.

H3b: Those employees who show declining performance trends which are perceived by the decision maker as due to causes which are internal will be less likely to receive positive personnel decisions than employees who show declining performance trends which are due to causes perceived to be external, when mean performance among employees is held constant.

Effect of Performance Trends and Controllability on Personnel Decisions

H4: The effect of performance trends on personnel decisions will be moderated by the decision maker's perceptions of controllability.

H4a: Those employees who show improving or maintaining performance trends which are perceived by the decision maker as due to causes which are controllable will receive more positive personnel decisions than employees who show improving or maintaining performance trends which are due to causes perceived to be uncontrollable, when mean performance among employees is held constant.

H4b: Those employees who show declining performance trends which are perceived by the decision maker as due to causes which are controllable will be less likely to receive positive personnel decisions than employees who show declining performance trends which are due to causes perceived to be uncontrollable, when mean performance among employees is held constant.

<u>Effect of Performance Trends on Perceived Stability</u>

H5: Causes of maintaining performance trends for employees will be perceived by the decision maker to be more stable than improving or declining performance trends, when mean performance among employees is held constant.

<u>Effect of Performance Trends on Promotion Decisions</u>

H6: Employees who show maintaining performance trends will be more likely to receive positive promotion decisions than employees who show improving or declining performance trends, when perceived controllability or locus of causality is held constant.

<u>Effect of Informational Cues on Perceived Controllability and Locus of Causation</u>

H7: Informational cues regarding causes of observed performance trends will result in variability of perceptions along the controllability and locus of control dimensions of attributions.

H7a: Informational cues of effort will be perceived to be more controllable than will ability or ease of job cues.

H7b: Informational cues of ability will be perceived to be less controllable than effort cues, but more controllable than ease of job cues.

H7c: Informational cues of ability and effort will be perceived to be more internal than ease of job cues.

<u>Effect of Performance Trend and Informational Cues on Perceptions of Stability</u>

H7d: Informational cues of effort, ability, and ease of job will be perceived to be more stable when associated with a maintaining trend than when associated with an improving or declining trend.

<u>Effect of Performance Trends and Employee Gender on Perceived Stability and Locus of Causation</u>

H8: Performance trends will interact with gender of the managerial employee to affect attributions of stability and locus of causality made by the decision maker.

H8a: Improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more stable than will the same performance trends for female managerial employees.

H8b: Declining performance trends for male managerial employees will be perceived by the decision maker to be more unstable than will the same performance trends for female managerial employees.

H8c: Improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more internal than will the same performance trends for female managerial employees.

H8d: Declining performance trends for male managerial employees will be perceived by the decision maker to be more external than will the same performance trends for female managerial employees.

Effect of Performance Trends and Employee Gender on Perceived Controllability

H9: Performance trends will interact with the gender of the managerial employee to affect attributions of controllability made by the decision maker.

H9a: Improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more controllable than will the same performance trends for female managerial employees.

H9b: Declining performance trends for male managerial employees will be perceived by the decision maker to be more uncontrollable than will the same performance trends for female managerial employees.

Effect of Informational Cues, Performance Trend, and Employee Gender on Perceived Controllability and Locus of Causation

H10: Informational cues will interact with gender of the employee and performance trend to affect attributions of controllability and locus of causality made by the decision maker.

H10a: Informational cues which indicate high ability attributions for improving or maintaining performance trends for male managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will improving or maintaining performance trends and high ability informational cues for female managerial employees.

H10b: Informational cues which indicate low ability attributions for declining performance trends for female managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will declining performance trends and low ability informational cues for male managerial employees.

H10c: Informational cues which indicate high effort attributions for improving or maintaining performance trends for female managerial employees will be perceived by the decision maker to be more internal and controllable than will improving or maintaining performance trends and high effort informational cues for male managerial employees.

H10d: Informational cues which indicate low effort attributions for declining performance trends for male managerial employees will be perceived by the decision maker to be more internal and controllable than will declining performance trends and low effort informational cues for female managerial employees.

H10e: Informational cues which indicate high or low ease of job attributions for improving, maintaining, or declining performance trends for female managerial employees will be perceived by the decision maker to be more external and uncontrollable than will the same performance trends and informational cues for male managerial employees.

Effect of Performance Trends and Employee Gender on Personnel Decisions

H11: Performance trends will interact with gender of the managerial employee to affect personnel decisions made by the decision maker.

H11a: Improving or maintaining performance trends for male managerial employees will be rewarded more by the decision maker than will the same performance trends for female managerial employees.

H11b: Declining performance trends for female managerial employees will be rewarded less by the decision maker than will the same performance trends for male managerial employees.

Effect of Performance Trends and Gender Group Membership on Perceived Stability and Locus of Causation

H12: Performance trends will interact with gender ingroup/outgroup membership of the managerial employee to affect attributions of stability and locus of causality made by the decision maker.

H12a: Improving or maintaining performance trends for an employee of the same gender as the decision maker will be perceived to be more stable than will the same performance trends for an employee of the opposite gender.

H12b: Declining performance trends for employees of the same gender as the decision maker will be perceived to be more unstable than will the same performance trends for employees of the opposite gender.

H12c: Improving or maintaining performance trends for employees of the same gender as the decision maker will be perceived to be more internal than will the same performance trends for employees of the opposite gender.

H12d: Declining performance trends for employees of the same gender as the decision maker will be perceived to be more external than will the same performance trends for employees of the opposite gender.

Effect of Performance Trends and Gender Group Membership on Perceived Controllability

H13: Performance trends will interact with gender ingroup/outgroup membership of the managerial employee to affect attributions of controllability made by the decision maker.

H13a: Improving or maintaining performance trends for employees of the same gender as the decision maker will be perceived to be more controllable than will the same performance trends for employees of the opposite gender.

H13b: Declining performance trends for employees of the same gender as the decision maker will be perceived to be more uncontrollable than will the same performance trends for employees of the opposite gender.

Effect of Informational Cues, Performance Trend, and Gender Group Membership on Perceived Controllability and Locus of Causation

H14: Informational cues will interact with performance trend and gender ingroup/outgroup membership of the employee to affect attributions of controllability and locus of causality made by the decision maker.

H14a: Informational cues which indicate high ability attributions for improving or maintaining performance trends for gender ingroup managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will improving or maintaining performance trends and high ability informational cues for gender outgroup managerial employees.

H14b: Informational cues which indicate low ability attributions for declining performance trends for gender outgroup managerial employees will be perceived by the decision maker to be more internal and uncontrollable than will declining performance trends and low ability informational cues for gender ingroup managerial employees.

H14c: Informational cues which indicate high effort attributions for improving or maintaining performance trends for gender outgroup managerial employees will be perceived by the decision maker to be more internal and controllable than will improving or maintaining performance trends and high effort informational cues for gender ingroup managerial employees.

H14d: Informational cues which indicate low effort attributions for declining performance trends for gender ingroup managerial employees will be perceived by the decision maker to be more internal and controllable than will declining performance trends and low effort informational cues for gender outgroup managerial employees.

H14e: Informational cues which indicate high or low ease of job attributions for improving, maintaining, or declining performance trends for gender outgroup managerial employees will be perceived by the decision maker to be more external and uncontrollable than will the same performance trends and informational cues for gender ingroup managerial employees.

Effect of Performance Trends and Gender Group Membership on Personnel Decisions

H15: Performance trends will interact with gender group membership of the managerial employee to affect personnel decisions made by the decision maker.

H15a: Improving or maintaining performance trends for gender ingroup managerial employees will be rewarded more by the decision maker than will the same performance trends for gender outgroup managerial employees.

H15b: Declining performance trends for gender outgroup managerial employees will be rewarded less by the decision maker than will the same performance trends for gender ingroup managerial employees.

APPENDIX B

Appendix B

Power Analysis

The following format will be used to indicate the results of the power analysis. First, a variable and relevant studies are listed, followed by the effect size (_f_) obtained in the results of that study. The _u_ is then listed, which is one less than the number of expected cells in the new study for the variable being considered. Next, the _a_ is indicated, which is the probability of type I error or alpha. Next, the desired power is indicated and it is usually set at .80. The required _n_ for the study under consideration is then presented and it was determined from the an examination of the power tables presented in Cohen (1988), based on the statistics identified above.

<u>Effect of Performance Trend on Personnel Decisions</u>

DeNisi and Stevens (1981): _f_ = .30 (_f_ = 1/2 _d_)
    _u_ = 2, _a_ = .05, power = .80: required _n_ = 36 per cell
    _u_ = 2, _a_ = .05, power = .90: required _n_ = 48 per cell

<u>Effect of Target Gender on Personnel Decisions</u>

Eagley et al., meta-analysis (1992), _f_ = .05
Olian et al., meta-analysis (1988), _f_ = .235
Heilman and Stopeck (1985b), _f_ = .229 to .274
Cohen and Bunker (1975), _f_ = .314
_f_ ranges from .05 to .314
    _f_ = .10, _u_ = 1, _a_ = .05, power = .80: required _n_ = 375
    _f_ = .15, _u_ = 1, _a_ = .05, power = .80: required _n_ = 170
    _f_ = .20, _u_ = 1, _a_ = .05, power = .80: required _n_ = 96

<u>Attributions and Leader Decisions</u>

Mitchell and Wood (1980), _f_ = .40
    _u_ = 10, _a_ = .05, power = .80: required _n_ = 10
    _u_ = 10, _a_ = .05, power = .90: required _n_ = 13

<u>Comparing Differences in r Between Trends and Personnel Decisions</u>

The _q_ statistic is required for comparing differences in correlations across conditions. Correlations between performance trend and personnel decisions will be calculated. A small difference in correlations between the improving and maintaining performance trends and personnel decisions is expected, while a large difference in correlations between improving or maintaining and declining trends is expected.

From Cohen (1988):

Small $\underline{g}$ = .10, $\underline{a}$ = .05, power = .80: required $\underline{n}$ = 1573
Med $\underline{g}$ = .30, $\underline{a}$ = .05, power = .80: required $\underline{n}$ = 177
Large $\underline{g}$ = .50, $\underline{a}$ = .05, power = .80: required $\underline{n}$ = 66

Conclusions

At least 300 to 400 subjects will be needed in each cell in order to ensure adequate power to test for the effects of gender on leader decisions. Because power is lower when testing for interaction effects, power problems are expected when testing sex of subject by sex of performer by performance trend effects. Over 1000 subjects may be needed to test some of the three-way interactions in the proposed study. The number of subjects needed to test three-way interactions can be reduced by using a within subjects design.

APPENDIX C

Appendix C

Results of Pilot Study

Each subject provided one set of responses to the WAMS scale and four sets of responses to the other scales (perceived causes, attributional dimensions, personnel decisions).

WAMS and demographics

Factor analysis (FA) on the WAMS and demographic items yielded 6 factors, which were not easily interpretable. FA using 2, 3, and 4 factor solutions yielded one overall factor which accounted for most of the variance, and other factors which consisted of the demographic items. For example, using a two factor solution, all of the WAMS items loaded onto the first factor and it accounted for 34.2% of the variance. All of the demographic items loaded onto factor two, and they accounted for 6.3% of the variance. The results suggest the WAMS scale taps into one overall factor.

Coefficient alpha was computed on the WAMS (.914). Only one item showed an increase in alpha (.918) after removal. After content analysis, it was kept for the future study, since the result could be due to sampling error.

Perceived Causes of Performance

Each subject provided four responses to the scales. One factor analysis was conducted for each set of responses, for a total of four factor analyses. The initial FA yielded four, five, and six factor solutions, depending on the set of responses being analyzed. The factors appeared to be uninterpretable. After careful examination, it was found that certain reverse coded items were loading onto their own factor, in spite of being recoded appropriately. When these items were removed, the factor structures began to make sense. Reliability analyses confirmed the results. The items which were creating odd and uninterpretable factors were also items which were substantially reducing the reliabilities of the scales from which they came. Upon removal, the following factor structures emerged for all four sets of data.

Factor 1: Consisted primarily of mood/attitude/recent effort items. Taps into an unstable or changeable affective component of performance causation. Accounted for 27.9, 30.4, 29.6, 25.9 percent of the variance, respectively.

Factor 2: Consisted primarily of ability/consistent effort items. Taps into a stable or traitlike component of performance causation. Accounted for 17.3, 10.1, 18.0, 15.9 percent of the variance, respectively.

Factor 3: Consisted primarily of luck/ease of job items. Taps into an external source of performance causation. When a three factor solution was derived (two of four sets), items measuring the influence of superiors on performance fell into factor 3. Accounted for 11.4, 18.2, 10.1, 12.2 percent of the variance, respectively.

Factor 4: Consisted entirely of the influence of superiors on job performance when a four factor solution was derived (two of four sets). Accounted for 7.7, null, null, 9.0 percent of the variance, respectively.

Reliabilities were calculated for each of the individual perceived causes and also for each of the factors identified in the FA. Poor items were removed and reliabilities were recalculated.

Reliabilities (2 items):				
Luck:	.5185	.5849	.5398	.6623
Constant Effort:	.7898	.7033	.7767	.7474
Division Mnger:	.5380	.5127	.6309	.5583
Mood:	.7407	.8012	.8147	.7096
Ease of Job:	.5670	.6066	.5078	.4427
Ability:	.7891	.8138	.8543	.7969
Specific effort:	.7122	.8147	.7953	.7375
Reliabilities by Cause Factors:				
External (6 items):	.6522	.7290	.7103	.6654
Attitude (4 items):	.8305	.8729	.8679	.8401
Trait (4 items):	.8158	.7869	.7926	.7639

<u>Perceived Controllability, Locus of Causation, and Stability</u>

Each subject provided four responses to the scales. One factor analysis was conducted for each set of responses, for a total of four factor analyses. The initial FA yielded two and three factor solutions, depending on the set of responses being analyzed. The factors appeared to be uninterpretable. After careful examination, it was found that certain reverse coded items were loading onto their own factor, in spite of being recoded appropriately. When these items were removed, the factor structures began to make sense. Reliability analyses confirmed the results. The items which were creating odd and uninterpretable factors were also items which were substantially reducing the reliabilities of the scales from which they came. Upon removal, the following factor structures emerged for all four sets of data.

Factor 1: Consisted of both controllability and locus of causation items. Approximately 35-40% of the variance.

Factor 2: Consisted of stability items. Approximately 15-20% of the variance.

Factor 3: Consisted of reverse coded items and the occasional locus of causation items. Approximately 5-10% of the variance when it appeared (two of four).

It appears that only two factors consistently emerged. They were locus of causation/controllability and stability factors.

Reliabilities were calculated only on the original scales, though the overlap between controllability and locus perceptions was readily apparent.

Controllability:	.8086	.8307	.8321	.7856
Locus of Cause:	.7866	.8113	.8067	.7892
Stability:	.6936	.7712	.7673	.7540

Personnel Decisions

Factor analyses indicated one main factor which consisted of affect, expectancy, promotion, merit pay, and pay raise decisions. Another factor consisted of affect and expectancy items or of reverse coded items. The last factor usually appeared to be garbage. Attempting to extract more factors did not eliminate the problem.

It appears that two or three main factors exist, but conclusions are equivocal.

Factor 1: Pay, promotion, reward decisions.
Factor 2: Affect and expectancy.
Factor 3: Reverse coded items.

Reliabilities for the original scales are as follows:

Expectancy:	.7697	.7600	.7956	.7703
Raise:	.7795	.8032	.7885	.7972
Merit Pay:	.8411	.8635	.8314	.8750
Affect:	.8638	.8474	.8277	.8268
Promotion:	.8696	.9125	.8846	.8558

These scales are all highly intercorrelated and show a high degree of parallelism in the intercorrelation matrix.

APPENDIX D

Appendix D

Examples of Experimental Manipulations

Male Manipulations

	Improving	Maintaining	Declining
Ability	Brian Jones Store 038	Gary Miller Store 040	Tom Smith Store 021
Effort	Tom Miller Store 029	Brian Smith Store 005	Gary Jones Store 018
Ease Job	Gary Smith Store 002	Tom Jones Store 017	Brian Miller Store 001

Female Manipulations

	Improving	Maintaining	Declining
Ability	Karen Jones Store 039	Lisa Miller Store 035	Patricia Smith Store 023
Effort	Patricia Miller Store 030	Karen Smith Store 006	Lisa Jones Store 019
Ease Job	Lisa Smith Store 004	Patricia Jones Store 024	Karen Miller Store 003

DESCRIPTION OF COMPANY

<u>Organizational Structure of CompuPro, Inc.</u>

```
                          Board of Directors
                                  |
                                  |
                                  v
       ---------------President--------------
       |                          |                        |
       v                          v                        v
VP Manfctrng/Prsnnl     VP Oprtns/Sales     VP Engnrng/Planning
                                  |
                                  v
    5 Regional Managers under the VP Operations/Sales
                                  |
                                  v
      8 Division Managers under each Regional Manager
                                  |
                                  v
       5 Store Managers under each Division Manager
                        (Total of 40 Stores)
                                  |
                                  v
        2-5 Sales Managers under each Store Manager
```

The President reports to the Board of Directors. There are three Vice-Presidents under the President of the company. Five Regional Managers (Pacific Northwest, Pacific Southwest, Midwest, Atlantic Northeast, Atlantic Southeast) report to the Vice-President of Operations and Sales. You are one of the five Regional Managers. There are eight Division Managers who work under you. Five Store Managers report to each of the eight Division Managers. There are a total of 40 stores for which you are responsible.

The name of your company is CompuPro. CompuPro manufactures, repairs, and sells a wide variety of high technology computer products. For example, CompuPro has engineered new computers based on the 80486DX and 80486SX families of microprocessor chips using EISA, ISA, Microchannel computer architectures. They are also developing new printers, networks, and video monitors to remain competitive in the industry. Working as a manager in CompuPro requires a high degree of familiarity with computers, electronics, and other advancing technologies.

OUTLINE

THE CURRENT SITUATION:

You are the Regional Manager in a computer/electronics manufacturing and retailing firm with stores all over the United States. You were promoted about two years ago and you are now in charge of the Pacific Northwest region. Since your promotion, things have been going well.

In fact, the company has been expanding so quickly in your area that the Vice-President of Operations/Sales has asked you to recommend one of your Store Managers for promotion to Division Manager. The person whom you promote will oversee the management and performance of five stores in a division, and you will have to work with this person frequently. Keep in mind that the recommendation you give to the Vice-President reflects your knowledge of those with whom you work. Additionally, the performance of this person will directly affect your performance, so be sure that you recommend someone who will do well in the future.

Also, it is about the time of the year that you will want to recognize your most productive Store Managers and reward them accordingly by giving them salary increases and bonuses. Raises and bonuses should only be given to those who deserve them the most. It may be useful to recognize that decisions regarding pay raises and bonuses might not be based on the same types information which are used to make promotion decisions. Promotion decisions will probably strongly affect your personal performance and the performance of the company as a whole. Pay raise and bonus decisions, on the other hand, will reward a person, but they might have less impact on your personal performance and on the performance of the company as a whole.

You have eight Division Managers and forty Store Managers who work for you. For your region, an average store will generate a profit of $540,000 in a year, which works out to an average profit rate of $45,000 each month per store. Out of the forty Store Managers there are three who have been recommended for promotion by their Division Managers. These three Store Managers have each been able to generate about $720,000 of profit during the year. This works out to an average profit level of $60,000 a month, which is $15,000 a month higher than the regional average.

You have decided to review the performances of these three Store Managers so that you can make a better decision regarding promotions, raises, and bonuses. NAME1, NAME2, and NAME3 are the three managers who have stores which have performed above the regional average. There are many reasons which can account for the observed performance of these employees. Regions and stores may vary in management competence and in customer demand for particular computer brands.

The different causes of performance may be related to how likely a person is to do well in other future situations and they may also be related to how you feel about that person. For example, some possible causes of performance might be natural intelligence level, effort, and job difficulty. Some of these causes might be considered more stable than other causes. They may vary as to whether they reflect something about the person or situation. They may also vary on the degree of control or responsibility the person has for HIS/HER performance, regardless of whether it is internal or not. These factors may affect whether you promote a person, reward a person with pay raises or bonuses, or do nothing for the person. Thus, you have decided to examine the factors involved in the performance of each of these employees prior to making your personnel decisions. Consequently you have asked for and have obtained the personnel files and performance evaluations supplied by the Division Managers for each of these employees.

Outline: Causes of Performance For All Employees

NAME1's store has performed well above average overall for the past year. HE/SHE started out (poorly, well) (but, and) HE/SHE has (improved, maintained, declined) in performance as the year has progressed.

It (also) seems that NAME1's (recent, overall) (good, poor) performance has been (due to, in spite of) the (high, low) natural ability HE/SHE possesses. It takes (much, little) time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE (seems, does not seem) to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be (above, below) average in intelligence.

It (also) seems that NAME1's (recent, overall) (good, poor) performance has been (due to, in spite of) the (ease, difficulty) of managing this particular store. The store NAME1 manages is one of the (most difficult, easiest) stores to manage. There are (many, few) other competitors and (few, many) customers in the area, so sales are (hard, easy) to make and maintain. Most other managers who have worked in this store in the past have performed (well, poorly).

It (also) seems that NAME1's (recent, overall) (good, poor) performance has been (due to, in spite of) the (low, high) effort that HE/SHE has exerted. NAME1 has worked very (hard, little) to keep the store functioning at a high level. HE/SHE has been putting in (many, few) overtime hours to institute or maintain new sales and employment development programs. Most other managers exert (more, less) effort than NAME1.

<u>OUTLINE Causes of Performance: Ability-Improving</u>
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out poorly but HE/SHE has improved in performance as the year has progressed.

It seems that NAME1's recent good performance has been due to the high natural ability HE/SHE possesses. It takes little time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE seems to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be above average in intelligence.

It seems that NAME1's recent good performance has been in spite of the difficulty of managing this particular store. The store NAME1 manages is one of the most difficult stores to oversee. There are many other competitors and few customers in the area, so sales are hard to make and maintain. Most other managers who have worked in this store in the past have performed poorly.

It also seems that NAME1's recent good performance has been in spite of the low effort that HE/SHE has exerted. NAME1 has worked very little to keep the store functioning at a high level. HE/SHE has been putting in few overtime hours to institute or maintain new sales and employment development programs. Most other managers exert more effort than NAME1.

<u>OUTLINE Causes of Performance: Ability-Maintaining</u>
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out well and HE/SHE has maintained in performance as the year has progressed.

It seems that NAME1's overall good performance has been due to the high natural ability HE/SHE possesses. It takes little time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE seems to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be above average in intelligence.

It seems that NAME1's overall good performance has been in spite of the difficulty of managing this particular store. The store NAME1 manages is one of the most difficult stores to oversee. There are many other competitors and few customers in the area, so sales are hard to make and maintain. Most other managers who have worked in this store in the past have performed poorly.

It also seems that NAME1's overall good performance has been in spite of the low effort that HE/SHE has exerted. NAME1 has worked very little to keep the store functioning at a high level. HE/SHE has been putting in few overtime hours to institute or maintain new sales and employment development programs. Most other managers exert more effort than NAME1.

<u>OUTLINE Causes of Performance: Ability-Declining</u>
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out well but HE/SHE has declined in performance as the year has progressed.

It seems that NAME1's recent poor performance has been due to the low natural ability HE/SHE possesses. It takes much time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE does not seem to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be below average in intelligence.

It seems that NAME1's recent poor performance has been in spite of the ease of managing this particular store. The store NAME1 manages is one of the easiest stores to oversee. There are few other competitors and many customers in the area, so sales are easy to make and maintain. Most other managers who have worked in this store in the past have performed well.

It also seems that NAME1's recent poor performance has been in spite of the high effort that HE/SHE has exerted. NAME1 has worked very hard to keep the store functioning at a high level. HE/SHE has been putting in many overtime hours to institute or maintain new sales and employment development programs. Most other managers exert less effort than NAME1.

OUTLINE Causes of Performance: Effort-Improving
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out poorly but HE/SHE has improved in performance as the year has progressed.

It seems that NAME1's recent good performance has been due to the high effort that HE/SHE has exerted. NAME1 has worked very hard to keep the store functioning at a high level. HE/SHE has been putting in many overtime hours to institute or maintain new sales and employment development programs. Most other managers exert less effort than NAME1.

It seems that NAME1's recent good performance has been in spite of the low natural ability HE/SHE possesses. It takes much time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE does not seem to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be below average in intelligence.

It also seems that NAME1's recent good performance has been in spite of the difficulty of managing this particular store. The store NAME1 manages is one of the most difficult stores to oversee. There are many other competitors and few customers in the area, so sales are hard to make and maintain. Most other managers who have worked in this store in the past have performed poorly.

<u>OUTLINE Causes of Performance: Effort-Maintaining</u>
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out well and HE/SHE has maintained in performance as the year has progressed.

It seems that NAME1's overall good performance has been due to the high effort that HE/SHE has exerted. NAME1 has worked very hard to keep the store functioning at a high level. HE/SHE has been putting in many overtime hours to institute or maintain new sales and employment development programs. Most other managers exert less effort than NAME1.

It seems that NAME1's overall good performance has been in spite of the low natural ability HE/SHE possesses. It takes much time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE does not seem to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be below average in intelligence.

It also seems that NAME1's overall good performance has been in spite of the difficulty of managing this particular store. The store NAME1 manages is one of the most difficult stores to oversee. There are many other competitors and few customers in the area, so sales are hard to make and maintain. Most other managers who have worked in this store in the past have performed poorly.

OUTLINE Causes of Performance: Effort-Declining
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out well and HE/SHE has declined in performance as the year has progressed.

It seems that NAME1's recent poor performance has been due to the low effort that HE/SHE has exerted. NAME1 has worked very little to keep the store functioning at a high level. HE/SHE has been putting in few overtime hours to institute or maintain new sales and employment development programs. Most other managers exert more effort than NAME1.

It seems that NAME1's recent poor performance has been in spite of the high natural ability HE/SHE possesses. It takes little time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE seems to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be above average in intelligence.

It also seems that NAME1's recent poor performance has been in spite of the ease of managing this particular store. The store NAME1 manages is one of the easiest stores to oversee. There are few other competitors and many customers in the area, so sales are easy to make and maintain. Most other managers who have worked in this store in the past have performed well.

OUTLINE Causes of Performance: Ease of Job-Improving
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out poorly but HE/SHE has improved in performance as the year has progressed.

It seems that NAME1's recent good performance has been due to the ease of managing this particular store. The store NAME1 manages is one of the easiest stores to oversee. There are few other competitors and many customers in the area, so sales are easy to make and maintain. Most other managers who have worked in this store in the past have performed well.

It seems that NAME1's recent good performance has been in spite of the low effort that HE/SHE has exerted. NAME1 has worked very little to keep the store functioning at a high level. HE/SHE has been putting in few overtime hours to institute or maintain new sales and employment development programs. Most other managers exert more effort than NAME1.

It also seems that NAME1's recent good performance has been in spite of the low natural ability HE/SHE possesses. It takes much time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE does not seem to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be below average in intelligence.

OUTLINE Causes of Performance: Ease of Job-Maintaining
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out well and HE/SHE has maintained in performance as the year has progressed.

It seems that NAME1's overall good performance has been due to the ease of managing this particular store. The store NAME1 manages is one of the easiest stores to oversee. There are few other competitors and many customers in the area, so sales are easy to make and maintain. Most other managers who have worked in this store in the past have performed well.

It seems that NAME1's overall good performance has been in spite of the low effort that HE/SHE has exerted. NAME1 has worked very little to keep the store functioning at a high level. HE/SHE has been putting in few overtime hours to institute or maintain new sales and employment development programs. Most other managers exert more effort than NAME1.

It also seems that NAME1's overall good performance has been in spite of the low natural ability HE/SHE possesses. It takes much time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE does not seem to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be below average in intelligence.

OUTLINE Causes of Performance: Ease of Job-Declining
Review of NAME1 by the Division Manager

NAME1's store has performed well above average overall for the past year. HE/SHE started out well but HE/SHE has declined in performance as the year has progressed.

It seems that NAME1's recent poor performance has been due to the difficulty of managing this particular store. The store NAME1 manages is one of the most difficult stores to oversee. There are many other competitors and few customers in the area, so sales are hard to make and maintain. Most other managers who have worked in this store in the past have performed poorly.

It seems that NAME1's recent poor performance has been in spite of the high effort that HE/SHE has exerted. NAME1 has worked very hard to keep the store functioning at a high level. HE/SHE has been putting in many overtime hours to institute or maintain new sales and employment development programs. Most other managers exert less effort than NAME1.

It also seems that NAME1's recent poor performance has been in spite of the high natural ability HE/SHE possesses. It takes little time for NAME1 to understand new and constantly changing computer technologies, and HE/SHE seems to relate easily with HIS/HER employees. Compared to other Store Managers, NAME1 seems to be above average in intelligence.

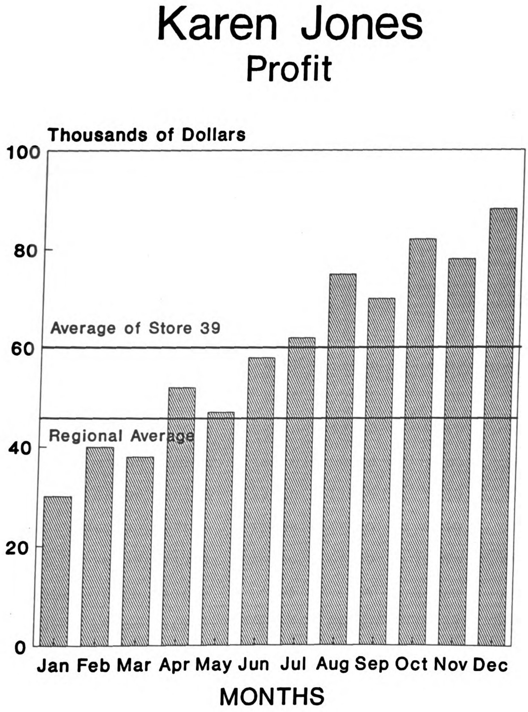


Figure 28. Sample of an Improving Trend for a Female Managerial Employee

JONES, Karen
712 Woodland Road
Middleborough, CA 92083
(515) 793-0563

Social Security Number
913-45-7243
Date of Birth:
5-15-60

WORK HISTORY:
Date of Hire: 10-29-90
Current Title: Store Manager
Area of Responsibility: Store #39

Profit for the Year 1991:
$720,000

Average Profit per Month for the Year 1991:
$60,000

Average Profit by Month and Revenue Type:

Month	Total Amount	Computer Sales	Printer Sales	Monitors Sales	Accssrs Sales	Repair/ Labor
January	30000	9900	6900	6300	5400	1500
February	40000	12400	8800	9600	6400	2800
March	38000	14060	9500	7980	4560	1900
April	52000	13520	11960	12480	8840	5200
May	47000	15510	10810	9870	9400	1410
June	58000	18560	12760	13920	8700	4060
July	62000	22940	15500	13020	7440	3100
August	75000	21750	18750	17250	12750	4500
September	70000	23100	16100	14700	14000	2100
October	82000	26240	18040	19680	12300	5740
November	78000	28860	19500	16380	9360	3900
December	88000	25520	22000	20240	14960	5280
Totals	720000	232360	170620	161420	114110	41490

Review of KAREN JONES by the Division Manager

Karen's store has performed well above average overall for the past year. She started out poorly but she has improved in performance as the year has progressed.

It seems that Karen's recent good performance has been due to the high natural ability she possesses. It takes little time for Karen to understand new and constantly changing computer technologies, and she seems to relate easily with her employees. Compared to other Store Managers, Karen seems to be above average in intelligence.

It seems that Karen's recent good performance has been in spite of the difficulty of managing this particular store. The store Karen manages is one of the most difficult stores to oversee. There are many other competitors and few customers in the area, so sales are hard to make and maintain. Most other managers who have worked in this store in the past have performed poorly.

It also seems that Karen's recent good performance has been in spite of the low effort that she has exerted. Karen has worked very little to keep the store functioning at a high level. She has been putting in few overtime hours to institute or maintain new sales and employee development programs. Most other managers exert more effort than Karen.

PERSONNEL EVALUATION FORM
To Be Completed by the Division Manager

Rated on a scale of 1 to 10
10=BEST, 1=WORST

	Rating for Last 6 Months of Year	**Rating for Previous 6 Months of Year**
General Ability as a Manager	10	6
Effort on the Job	5	5
Follows Company Policy	5	5
Total:	20	16

Overall Average Score: 6

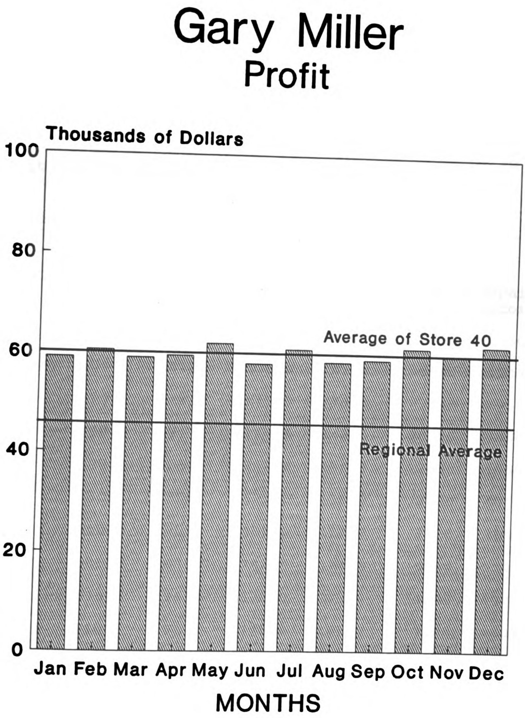


Figure 29. Sample of a Maintaining Trend for a Male Managerial Employee

MILLER, Gary
4125 Gemstone Way
Harrison, CA 94548
(652) 232-6794

Social Security Number
654-12-4912
Date of Birth:
9-29-60

WORK HISTORY:
Date of Hire: 12-13-90
Current Title: Store Manager
Area of Responsibility: Store #40

Profit for the Year 1991:
$720,000

Average Profit per Month for the Year 1991:
$60,000

Average Profit by Month and Revenue Type:

Month	Total Amount	Computer Sales	Printer Sales	Monitors Sales	Accssrs Sales	Repair/ Labor
January	59000	19470	13570	12390	10620	2950
February	60500	18755	13310	14520	9680	4235
March	59000	21830	14750	12390	7080	2950
April	59500	15470	13685	14280	10115	5950
May	62000	20460	14260	13020	12400	1860
June	58000	18560	12760	13920	8700	4060
July	61000	22570	15250	12810	7320	3050
August	58500	16965	14625	13455	9945	3510
September	59000	19470	13570	12390	11800	1770
October	61500	19680	13530	14760	9225	4305
November	60000	22200	15000	12600	7200	3000
December	62000	17980	15500	14260	10540	3720
Totals	720000	232360	170620	161420	114110	41490

Review of GARY MILLER by the Division Manager

Gary's store has performed well above average overall for the past year. He started out well and he has maintained in performance as the year has progressed.

It seems that Gary's overall good performance has been due to the high natural ability he possesses. It takes little time for Gary to understand new and constantly changing computer technologies, and he seems to relate easily with his employees. Compared to other Store Managers, Gary seems to be above average in intelligence.

It seems that Gary's overall good performance has been in spite of the difficulty of managing this particular store. The store Gary manages is one of the most difficult stores to oversee. There are many other competitors and few customers in the area, so sales are hard to make and maintain. Most other managers who have worked in this store in the past have performed poorly.

It also seems that Gary's overall good performance has been in spite of the low effort that he has exerted. Gary has worked very little to keep the store functioning at a high level. He has been putting in few overtime hours to institute or maintain new sales and employee development programs. Most other managers exert more effort than Gary.

PERSONNEL EVALUATION FORM
To Be Completed by the Division Manager

Rated on a scale of 1 to 10
10=BEST, 1=WORST

	Rating for Last 6 Months of Year	**Rating for Previous 6 Months of Year**
General Ability as a Manager	8	8
Effort on the Job	5	5
Follows Company Policy	5	5
Total:	18	18

Overall Average Score: 6

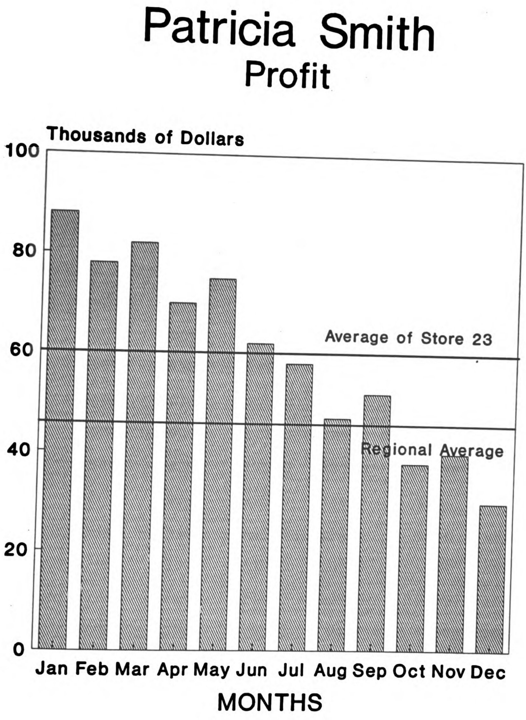


Figure 30. Sample of a Declining Trend for a Female Managerial Employee

SMITH, Patricia
732 Handlebar Road
Rancho Verde, CA 91222
(613) 445-5245

Social Security Number
882-91-3766
Date of Birth:
11-9-60

WORK HISTORY:
Date of Hire: 8-17-90
Current Title: Store Manager
Area of Responsibility: Store #23

Profit for the Year 1991:
$720,000

Average Profit per Month for the Year 1991:
$60,000

Average Profit by Month and Revenue Type:

Month	**Total Amount**	**Computer Sales**	**Printer Sales**	**Monitors Sales**	**Accssrs Sales**	**Repair/ Labor**
January	88000	29040	20240	18480	15840	4400
February	78000	24180	17160	18720	12480	5460
March	82000	30340	20500	17220	9840	4100
April	70000	18200	16100	16800	11900	7000
May	75000	24750	17250	15750	15000	2250
June	62000	19840	13640	14880	9300	4340
July	58000	21460	14500	12180	6960	2900
August	47000	13630	11750	10810	7990	2820
September	52000	17160	11960	10920	10400	1560
October	38000	12160	8360	9120	5700	2660
November	40000	14800	10000	8400	4800	2000
December	30000	8700	7500	6900	5100	1800
Totals	720000	232360	170620	161420	114110	41490

Review of PATRICIA SMITH by the Division Manager

Patricia's store has performed well above average overall for the past year. She started out well but she has declined in performance as the year has progressed.

It seems that Patricia's recent poor performance has been due to the low natural ability she possesses. It takes much time for Patricia to understand new and constantly changing computer technologies, and she does not seem to relate easily with her employees. Compared to other Store Managers, Patricia seems to be below average in intelligence.

It seems that Patricia's recent poor performance has been in spite of the ease of managing this particular store. The store Patricia manages is one of the easiest stores to oversee. There are few other competitors and many customers in the area, so sales are easy to make and maintain. Most other managers who have worked in this store in the past have performed well.

It also seems that Patricia's recent poor performance has been in spite of the high effort that she has exerted. Patricia has worked very hard to keep the store functioning at a high level. She has been putting in many overtime hours to institute or maintain new sales and employee development programs. Most other managers exert less effort than Patricia.

PERSONNEL EVALUATION FORM
To Be Completed by the Division Manager

Rated on a scale of 1 to 10
10=BEST, 1=WORST

	Rating for Last 6 Months of Year	**Rating for Previous 6 Months of Year**
General Ability as a Manager	2	6
Effort on the Job	7	7
Follows Company Policy	7	7
Total:	16	20

Overall Average Score: 6

APPENDIX E

Appendix E

Measurement Scales

These are the items which comprised the questionnaires. The items were block randomized during the construction of the questionnaires.

Participant Instructions:
Please fill out a single Opscan or Scantron sheet for each of the three managers whose personnel files you have read. Please do not write on the personnel files nor on the questionnaires themselves. Thanks!

Store Number
Please make sure that the **store number** on the Scantron sheet (found under SECTION) matches the **store number** of the Store Manager you are currently evaluating. These numbers will NOT be linked with your identity. They are used to track which personnel files you received.

Thank you.

On a Scale of 1 to 5
1=Strongly Disagree
2=Disagree
3=Neither Disagree Nor Agree
4=Agree
5=Strongly Agree

Causation of Observed Performance

Ability
1. I believe the observed performance of this store was due to the Store Manager's high ability. (ability)

2. I believe this Store Manager is naturally intelligent. (ability)

3. I believe the observed performance of the store was due to the Store Manager's high natural ability. (ability)

Effort
4. I believe the observed performance of this store was due to the Store Manager's high level of effort. (effort)

5. I believe this Store Manager has had to work hard to perform well. (effort)

6. I believe the observed performance of the store was due to high effort on the part of the Store Manager. (effort)

Ease of Job

7. I believe the observed performance of this store was because the Store Manager's job would be easy to accomplish by anyone. (easejob)

8. I believe this Store Manager's performance was because this store was easy to run. (easejob)

9. I believe this Store Manager's job was easy. (easejob)

Attributions of the Inferred Causes of Performance

Controllability

10. The CAUSE of the observed performance of this Store Manager was something the Store Manager could directly control. (control)

11. The CAUSE of the observed performance of this Store Manager was due to something which this person could affect. (control)

12. The CAUSE of the observed performance of this Store Manager was due to something which the Store Manager could easily influence. (control)

13. The CAUSE of the observed performance of this Store Manager was due to something which was from within the Store Manager and which the Store Manager was in direct control over. (control)

14. The CAUSE of this store's observed performance was due to something which was internal to the Store Manager and which the Store Manager was directly able to change. (control)

15. The CAUSE of the observed performance of this Store Manager was due to something which was from within the Store Manager but which was not easily controlled by the Store Manager. (R-control)

16. The CAUSE of this store's observed performance was due to something which was internal to the Store Manager but which the Store Manager was not easily able to affect. (R-control)

17. The CAUSE of this Store Manager's performance was due to something which reflects some aspect of the Store Manager but the CAUSE is not something that the Store Manager can easily influence. (R-control)

Internality

18. The CAUSE of this store's observed performance was due to something which was external to the Store Manager. (extlocus)

19. The observed performance of this Store Manager was a result of something which was from outside that person. (extlocus)

20. The CAUSE of this store's performance was because of the situation. (extlocus)

21. The CAUSE of this store's performance was something that reflects some aspect of the situation and not some aspect of the Store Manager. (extlocus)

22. The CAUSE of this Store Manager's observed performance was due to something which was in the environment. (extlocus)

Stability

23. The CAUSE of the store's observed performance was due to something which will be likely to change in the future. (R-stable)

24. The CAUSE of the store's observed performance was due to something which will be likely to stay the same in the future. (stable)

25. The observed performance of the Store Manager was a result of something which will always be there. (stable)

26. The CAUSE of the store's observed performance was something that is permanent. (stable)

27. The CAUSE of the store's observed performance was something that is temporary. (R-stable)

Expectations and Affect

Expected Future Performance

28. I expect the Store Manager to perform above average in the future. (expect)

29. I expect the Store Manager to perform below average in the future. (R-expect)

30. I expect the Store Manager to perform well in the future. (expect)

31. I think the Store Manager is likely to continue in above average performance. (expect)

32. I don't think this Store Manager will do well in the future. (R-expect)

Affect

33. I feel uncomfortable about the intentions of this Store Manager. (R-affect)

34. I have concerns about this Store Manager. (R-affect)

35. I think this Store Manager is a questionable employee. (R-affect)

36. I don't feel good about this Store Manager. (R-affect)

37. I think this Store Manager is a poor employee. (R-affect)

38. I dislike this Store Manager. (R-affect)

Personnel Decisions

Promotion
39. I would recommend this person for permanent promotion to Division Manager. (promote)

40. I would like to interview this person as a candidate for promotion to Division Manager. (promote)

41. I believe this person deserves a promotion. (promote)

42. I would promote this person to a position higher than the current position of Store Manager. (promote)

43. I would promote this Store Manager. (promote)

Raise
44. I would not recommend this Sales Manager for a 10% salary increase. (R-pay)

45. I would not recommend this Sales Manager for a 20% salary increase. (R-pay)

46. I think this Sales Manager deserves reduced pay. (R-pay)

47. I would make a decision to lower this Sales Manager's pay by 10%. (R-pay)

48. This Sales Manager should receive a lower salary. (R-pay)

Merit Pay Bonus
49. I would not give this person a one-time bonus. (R-merit)

50. I would not give this person a merit pay bonus for a job well done. (R-merit)

51. I would not recommend this person for a merit pay bonus. (R-merit)

52. This person deserves NO bonus pay. (R-merit)

<u>Performance Level</u>

53. **The average profit level for this Store Manager was (see graph):**
    1 = $70,000
    2 = $60,000
    3 = $50,000
    4 = $40,000
    5 = $30,000

54. **The average profit level for all stores in the region was (see graph):**
    1 = $75,000
    2 = $65,000
    3 = $55,000
    4 = $45,000
    5 = $35,000

55. Compared to the regional average (see graph and use answers to #53 and #54), the profit level of the Store **Manager in this** <u>scenario</u> was depicted as: ______ (please indicate your answer using 1, 2, or 3 from below).

1=Below average for the region
2=Average for the region
3=Above average for the region

Completed After All Other Questionnaires Are Done

On a Scale of 1 to 5
1=Strongly Disagree
2=Disagree
3=Neither Disagree Nor Agree
4=Agree
5=Strongly Agree

Women as Managers Scale (WAMS)

1. It is less desirable for women than men to have a job that requires responsibility. (R)

2. Women have the objectivity required to evaluate business situations properly.

3. Challenging work is more important to men than it is to women. (R)

4. Men and women should be give equal opportunity for participation in management training programs.

5. Women have the capability to acquire the necessary skills to be successful managers.

6. On the average, women managers are less capable of contribution to an organization's overall goals than are men. (R)

7. It is not acceptable for women to assume leadership roles as often as men. (R)

8. The business community should someday accept women in key managerial positions.

9. Society should regard work by female managers as valuable as work by male managers.

10. It is acceptable for women to compete with men for top executive positions.

11. The possibility of pregnancy does not make women less desirable employees than men.

12. Women would no more allow their emotions to influence their managerial behavior than would men.

13. Problems associated with menstruation should not make women less desirable than men as employees.

14. To be a successful executive, a women does not have to sacrifice some of her femininity.

15. On the average, a woman who stays at home all the time with her children is a better mother than a woman who works outside the home at least half time. (R)

16. Women are less capable of learning mathematical and mechanical skills than are men. (R)

17. Women are not ambitious enough to be successful in the business world. (R)

18. Women cannot be assertive in business situations that demand it. (R)

19. Women possess the self-confidence required of a good leader.

20. Women are not competitive enough to be successful in the business world. (R)

21. Women cannot be aggressive in business situations that demand it. (R)

Promotion Decisions

22. I made my promotion decisions on the basis of expected future performance.

23. I made my promotion decisions on the basis of whether or not the Store Manager deserved a reward.

Pay Raise Decisions

24. I made my pay raise decisions on the basis of expected future performance.

25. I made my pay raise decisions on the basis of whether or not the Store Manager deserved a reward.

Merit Pay Decisions

26. I made my merit pay bonus decisions on the basis of expected future performance.

27. I made my merit pay bonus decisions on the basis of whether or not the Store Manager deserved a reward.

Final Questions

Gender of the Target

28. What was the gender of the Store Managers in the scenarios?

1=Male 2=Female

Gender of the Subject

29. What is your gender?

1=Male 2=Female

Age of the Subject

30. What is your age?

1) 19 or less 2) 20-22 3) 23-25 4) 26-28 5) more than 29

Supervisory Work Experience

31. Have you ever had any previous supervisory work experience?

1) Yes 2) No

32. How much supervisory experience have you had (in months)?

1) 12 or less 2) 13-18 3) 19-24 4) 25-30 5) more than 31

APPENDIX F

Appendix F

Protocol

MATERIALS

Each subject should get one sample file, three personnel files, four Scantrons, the first of two questionnaires (1=manager questionnaire; 2=WAMS and final questions), consent form (to be handed out), a subject number, and a pencil (second questionnaire and Feedback to Participants comes later).

Females are even, Males are odd in subject number

PROTOCOL

1. Explain consent forms, have them signed, and collect them.
2. Pass out materials and pencils. Explain the importance of the store manager number. Used to group the materials. Very important to match (or fill in) appropriately. **Explain how the store numbers are used.** Store Number of the Store Manager is located in the area marked Section.
3. Introduction (please don't write on materials - to be reused)
4. Description of graphs and sample survey questions to test graph understanding and to provide survey examples. Don't actually need to answer the questions.
5. Initial description of company and situation
6. Read one of the three personnel files then answer questions. Pick the next one and repeat. Read them **in order, one at a time.**
7. Answer questions on the Scantron (**fill in subject number and store number**), one for each file **as you read them.** Treat each file independently.
8. When done, fill out last questionnaire (WAMS scale)
9. Collect all data
10. Feedback to participants
11. Track subject hours and participation

1. Consent forms

Before we begin, please read over the consent forms. If you agree to participate, please sign form and turn it over. I'll come by later to collect them. I am collecting the consent forms separately from the rest of the study so that your identity will remain separate from your responses.

Participation is strictly voluntary. You are free to discontinue the experiment at any time for any reason.

2. Check manager store numbers.
Explain that they are used to match surveys, not to identify the participants in the study. Explain how the numbers are recorded on the Scantron sheets. The manager store number is NOT linked to your identity.

3. Introduction
Good evening. Thanks for participating in today's research effort. Please do not begin until I've completed the instructions. Today, you are about to participate in research which is conducted with the use of personnel files and surveys. There will be various scenarios presented to you in a written form, and they will be about various types of managers. After you have read the scenarios, you will be asked to answer some questions about the people presented in the scenarios. None of the questions are of a personal nature and your identity will remain anonymous. However, please remember that the response each of you gives is important and may affect the results of the experiment. It is important that each of you answer the questions as thoughtfully and as carefully as possible. Also, please try to answer each question, even if you aren't sure of your answer. You may ask me about a question if you need to. Also, PLEASE DON'T WRITE ON THESE MATERIALS. I have to reuse them to collect data.

4. Description
Included with the personnel files will be a graph depicting the performance of stores of various Store Managers. Within the file marked Sample, is a sample graph which you can view. You may open it now. (Pause). At the bottom of the graph are the months of the year, starting with January, ending in December. (Show the graphs). It is important to read the graphs carefully in order to understand what the manager's performance trend has been like. You will notice that there are two lines which indicate the average for the stores of the region by year and the average that this person has for the year (point to averages). This is done so that you can compare the performance of this manager to the average performance of all the managers of the region.

Please turn to the questionnaire in the Sample file. Does everyone have one? Please read the first question, "What is the regional average in profit?" Next read the second question, "What is this person's average in profit?" Finally, read the third question, "What were the profits for this person in the month of July?" (Wait two minutes). The answer to the question about the regional average was around $45,000. The answer to the question about this person's average was around $55,000. The answer to the question about the profit in July was around $70,000. Does anyone have any questions about how to read the graphs? (Pause). You will now notice that underneath the questions you just answered are some other sample questions. You do not have to answer these. They are just example questions to give you an idea of what type of questions you will be asked later.

When you are asked to fill out the surveys, you will be asked to answer many questions which use a scale similar to the ones you are presently viewing. You will be providing your answers on a Scantron, so you will need a Number 2 pencil. Does everyone have a pencil? (Pause). When you are answering the questions, you may find that the way in which the question was asked will change the way you answer. When filling out the surveys, the scales may vary in the same manner as well, so read each question and each answer carefully before writing your answer. Also, I know that you will see questions which are similar to each other. The purpose of multiple questions on the same topic is to analyze the quality of the questions themselves. Again, do you have any questions? (Pause).
(You may now replace the Sample File into the folder)

<u>5.,6., & 7. Administration-Initial Description, Instruction, and Surveys</u>

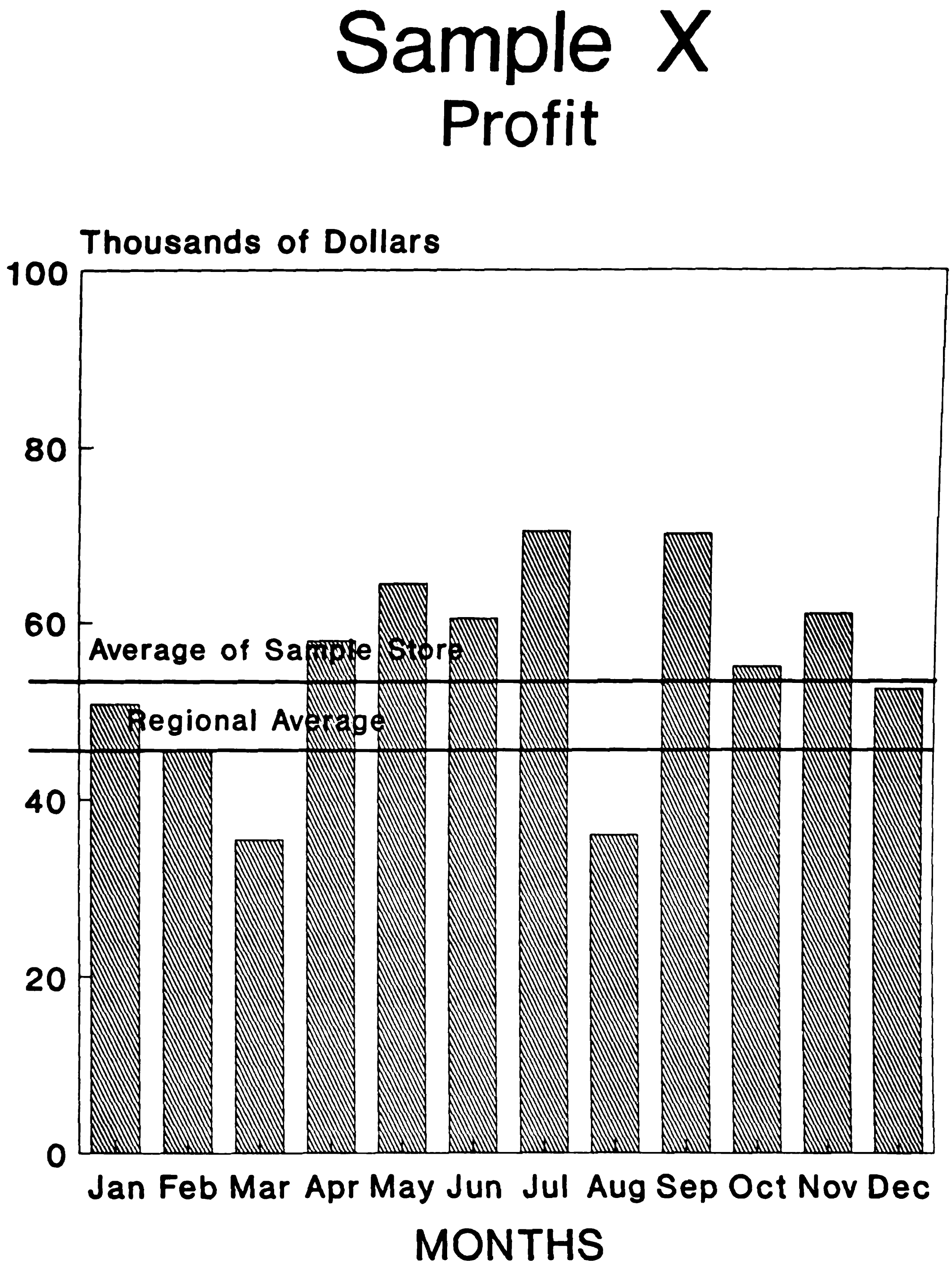
We are just about to begin, but before we do, I have some other instructions. Find the page which contains an initial general description of the company and the situation within which you are to evaluate each manager. Please read it now. (Pause and wait). You may refer back to the initial description provided on the company and situation at any time. After reading the initial description, you may choose the first of the three personnel files in front of you and begin reading. PLEASE READ THE FILES IN ORDER. After you have read the first file, open the questionnaire marked #1. Next, find the Scantron form with the store number (under Session) which matches the file you just read. <u>Mark in one, under Form</u>. When you do the second managerial file, mark in two, under Form. Do the same for three. You have one Scantron form for each of the three managerial files. Answer questionnaire one for each of the three managers. Please answer the questions for each of the files independently of your answers for the other files. Also, please read through the file carefully before answering any of the questions about that manager. When you are through with this part, you should have completed three of the four Scantron sheets.

<u>8.,9., & 10. Second and Last Questionnaire, Collect Data, Feedback</u>
When you have completed these three sheets, please bring them to the front. Also, please bring your employee folders. Please do NOT place Scantrons back into the files. Pick up questionnaire number two. This is your last

questionnaire. This will be marked "111" in Section. **Please answer this questionnaire honestly.** Remember, your answers are completely anonymous. After you have answered this questionnaire, please turn it in at the front.

You will then receive a **Feedback to Participants** sheet which explains the purpose of the experiment. If you have any questions, feel free to ask them as soon as the time is up and the data is collected. Thank you for your help and participation. You may now begin.

<u>11. Make Sure Participants get Credit for Participation</u>



<u>Figure 31</u>. Sample Graph for Explanation to Participants

SAMPLE QUESTIONS

Please do not write on these questions. These materials will be reused later. Thanks.

FIRST SET

1. What is the regional average in profit for the year?_______________

2. What is this person's average in profit for the year?______________

3. What were the profits for Manager X in the month of July?_______________

SECOND SET

On a Scale of 1 to 5
1=Strongly Disagree
2=Disagree
3=Neither Disagree Nor Agree
4=Agree
5=Strongly Agree

1. I think the manager is a great person.

2. I don't like the manager at all.

NOTE THE CHANGE BETWEEN QUESTION 1 AND 2

FEEDBACK TO PARTICIPANTS

You have just participated in a study which is designed to examine the influence of gender stereotypes on personnel decision-making. I am a graduate student in the Industrial/Organizational Psychology program and I am interested in the effect of gender stereotypes on perceived causes of performance and personnel decisions.

Specifically, I expect information about causes of performance to affect perceptions of the controllability and stability of those causes. Furthermore, I expect this information to affect whether the cause of the observed performance is perceived to be something which is internal or external to the performer. The factors of controllability, stability, and internality are predicted to affect decisions about promotion, merit pay, and salary decisions in different ways for different observed performances. For example, controllable improving performance should be rewarded more than uncontrollable improving performance, while controllable declining performance should be rewarded less than uncontrollable declining performance. Similar predictions are made for internality and stability.

Furthermore, I expect gender to affect the perceived causes of high performing individuals. I believe that males will tend to view male employee improving performance as more controllable, internal, and stable than female employee improving performance. I also believe that females will tend to view female employee improving performance as more controllable, internal, and stable than male employee improving performance. I expect the opposite to be true for declining performance. Since personnel decision-making is expected to be linked to controllability, stability, and internality, I expect to find gender bias in the decisions made with regard to promotions, raises, and merit pay.

The implication is that gender can affect perceptions of decision makers and that these perceptions will bias personnel decision- making. This is expected to be true in spite of large amounts of specific information about the observed performance and its causes. These findings could have important theoretical and applied implications for business and organizational settings.

Your responses to the questionnaires will allow me to analyze the whether gender of employees or decision-makers will affect the personnel decisions which are made. They will also help to determine whether locus of cause, controllability, and stability play a role in the formation of personnel decisions. If you are interested in the results of the study, you can contact me through the psychology department. I will send you an abstract after my thesis is completed. If you have further interests, I can discuss my findings with you in person.

Thank you very much for your time.

CONSENT FORM

The questionnaires which you are about to answer are designed to examine the effects of different types of performance information on personnel decision-making. You will be asked to read about different types of fictional managers and then you will be asked to answer questions about what you believed caused the performance of that manager to occur. Also, you will be asked to rate different types of personnel decisions in response to the presented manager's performance. These personnel decisions will be made with regard to promotions, salaries, and merit pay bonuses. Also, you will be asked how you feel about the quality of the performance and how well you expect the manager to do in the future. Finally, you will be asked to answer questions about how you feel about different types of managers and their qualifications for different types of jobs. Your involvement in this study is expected to take about one and one-half hours. At the end of your involvement, I will provide you with a one page sheet explaining the purpose of this research effort.

Participation is strictly voluntary. You are free to discontinue the experiment at any time for any reason. Also, your responses will be anonymous and treated with the strictest confidence. After your involvement with this study you are free to ask any questions you might have. You may contact Stanley Gully through the Department of Psychology by mail or you may call directly at 353-9166.

By signing this sheet, you agree that the researcher has explained the study to you and that you understand the procedures of the study.

By signing this form, I agree to participate in this study.

____
Signature

After you have signed this form, set it to the side. The research assistant will come by and collect it separately from the questionnaires. Your responses to the questionnaires will not be associated with your identity.

APPENDIX G

Appendix G

Definition of Terms

Attributions: The perceived cause (attribution) of a particular event. Managers act as "naive psychologists" when judging the cause and meaning of organizational events (Heider, 1958; Gioia & Sims, 1986).

Bias: The likelihood that information will be processed differently when a stereotype or category is activated than when it is not (Bierhoff, 1989, p. 27).

Controllability: The degree to which a cause is a factor that the person has control over (Weiner, 1979; 1986).

Declining Performance Trend: Performance begins above the overall performance level mean and ends below the overall performance level mean.

Improving Performance Trend: Performance begins below the overall performance level mean and ends above the overall performance level mean.

Ingroup/Outgroup: Refers to whether a person is perceived as part of the group one identifies oneself with on the basis of some salient characteristic (skin color, religion, gender, etc.). Operationalized in this study as whether or not the target person is of the same gender as the decision maker.

Locus of Cause (Internal or External): The degree to which the cause is located within the person (internal), rather than outside the person (external) (Weiner, 1979).

Maintaining Performance Trend: Performance shows minor random shifts around the overall performance level mean.

Pay Decisions: The willingness to allocate merit pay, bonus, or a general salary increase to an employee.

Performance Level: Whether overall performance level is considered above average, average, or below average.

Performance Trend: Given an overall performance level, performance can vary over time and yield the same overall average. Performance trend indicates the way in which the performance can vary over time.

Personnel Decisions: Promotion, merit pay bonus, and salary decisions.

Promotion Decisions: The willingness to promote an employee to a higher managerial position (may imply a commensurate pay increase).

Sex or Gender: Gender of stimulus person or decision maker.

Stability: The degree to which the cause can be expected to be present at the same level every time the same situation arises (Weiner, 1979).

Stereotype: A set of attributes ascribed to a group and imputed to its individual members simply because they belong to that group (Taylor, Fiske, Etcoff, & Ruderman, 1978; Heilman, 1983)

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